

This PDF contains a number of attachments, reports, and other information previously provided to the Internal Affairs Committee and the City Council as part of their discussion regarding alcohol regulation in 2013.

Some material in this document (such as portions of Attachment R) does not reflect the current position or direction of the City of Chico, but it is all provided for the sake of completeness.

Those with questions about this information are encouraged to contact Associate Planner Greg Redeker, AICP, at [greg.redeker@chicoca.gov](mailto:greg.redeker@chicoca.gov) or (530) 879-6810.

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## INTERNAL AFFAIRS COMMITTEE AGENDA

A Committee of the Chico City Council: Councilmembers Morgan, Schwab, and Chair Ritter

**Special Meeting of July 24, 2013 - 8:00 a.m. to 10:00 a.m.**

Council Chamber Building, 421 Main Street, Conference Room No. 1

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### REGULAR AGENDA

- A. **Consideration of Possible Municipal Code Amendments to Increase City Authority to Regulate Alcoholic Beverage Establishments** - *(Report - Mark Wolfe, AICP, Community Development Director)*

**Recommendation:** *The Community Development Director recommends that the Internal Affairs Committee accept this report, and provide direction to staff.*

- B. **Discussion and Direction for Policy Implementation of Alcohol Outlets and Establishment of Special Conditions for Alcohol License** - On May 21, 2013 and July 2, 2013 two Determinations of Public Convenience or Necessity were brought before the City Council with recommendations to not approve a finding of determination of convenience or necessity to have new alcohol licenses established in the community. The Chico Police Department was referred by the City Council to the Internal Affairs Committee to discuss policy implementation for Alcohol Outlets and establishment of Special Conditions for Alcohol Licenses. *(Report - Kirk Trostle, Chief of Police)*

**Recommendation:** *The Chief of Police requests direction on implementation of a policy for Alcohol Outlets and the establishment of Special Conditions for Alcohol Licenses.*

### REPORTS AND COMMUNICATIONS

- C. **Request to be Agendized** - The owners of the B Street Oyster Company and Branshee have submitted a request to Council to be agendized regarding conditions that have been placed on their ABC License. After further discussion with owner, William Brady, there was concurrence to place his request on the Internal Affairs Committee agenda.
- D. **Business from the Floor** - Members of the public may address the Committee at this time on any matter not already listed on the agenda, with comments being limited to three minutes. The Committee cannot take any action at this meeting on requests made under this section of the agenda.
- E. **Adjournment and Next Meeting** - The meeting will adjourn no later than 10:00 a.m. The next regular Internal Affairs Committee meeting is scheduled for Wednesday, August 14, 2013, at 8:00 a.m. in Conference Rm. No. 1.

Distribution available in the office of the City Clerk

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Posted: 7/18/13

Prior to: 5:00 p.m.

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## Internal Affairs Committee Agenda Report

Meeting Date: July 24, 2013

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TO: Mayor and City Council

FROM: Kirk Trostle, Chief of Police

RE: Discussion and direction for policy implementation of Alcohol Outlets and establishment of Special Conditions for Alcohol Licenses

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### **REPORT IN BRIEF:**

On May 21, 2013 and July 2, 2013, a Determination of Public Convenience or Necessity was brought before the City Council to oppose a recommendation to find a determination of convenience or necessity to have new alcohol licenses established in the community. The Chico Police Department was referred by the City Council to the Internal Affairs Committee to discuss policy implementation for Alcohol Outlets and establishment of Special Conditions for Alcohol Licenses.

### **Recommendation:**

The Chief of Police requests direction on implementation of a policy for Alcohol Outlets and the establishment of Special Conditions for Alcohol Licenses.

### **FISCAL IMPACT:**

The fiscal impact to the City budget will be any gain or loss of tax revenue (.0095%) that would have been generated from the sale of alcoholic beverages. An estimate of the potential tax revenue Alcohol Outlet sales would be projected to generate for the City of Chico would be minimal. While adding Alcohol Outlets will create a negative impact on public safety and health services, assessing the degree of the fiscal effect is difficult to calculate. The transportation of alcoholic beverages is not restricted to a census tract, thus alcohol sales could potentially have a negative impact on other census tracts within the City.

### **BACKGROUND:**

On May 21, 2013 and July 2, 2013, a Determination of Public Convenience or Necessity (PCN) was brought before the City Council recommending opposition to finding a PCN to have new alcohol licenses established in the community. As this matter relates to public policy, the Chico Police Department was referred by the City Council to the Internal Affairs Committee to discuss policy implementation on Alcohol Outlets, establish Special Conditions for Alcohol Licenses, and consider local regulation of alcohol.

### **DISCUSSION:**

The Department of Alcoholic Beverage Control (ABC) establishes the number of licenses it deems appropriate for each census tract and is the authority for approving and issuing all alcohol licenses in the

State of California. A census tract is designated as a geographic area as determined by the most recent United States decennial or special census. The City of Chico has 22 Census Tracts that ABC has deemed appropriate to provide a maximum of 113 on-sale alcohol licenses and 75 off-sale licenses for a total of 188 alcohol licenses. Currently, the City of Chico has 173 on-sale licenses and 91 off-sale licenses for a total of 264 alcohol licenses. These numbers reflect a 153% oversaturation of the on-sale licenses and 121% oversaturation for the off-sale licenses. Refer to Attachment A for an authorized licensee saturation matrix, common ABC license types and their basic privileges form, and map of the City of Chico Census Tracts.

On January 1, 1998, Business and Profession Code 23817.5 was amended to permanently establish a moratorium on the issuance of off-sale beer and wine licenses (Type 20) in cities and counties where the ratio of Type 20 licenses exceeds one license for each 2,500 inhabitants. All of Butte County, including the City of Chico, remains a part of this moratorium due to an undue concentration of Type 20 alcohol outlets. Refer to Attachment B for details.

An applicant, who desires authorization for an alcohol license, must use the ABC website to initiate the process. The applicant is directed to download all the required forms from the ABC website and complete the application. Once the application is filled out, the applicant is required to make an appointment with ABC to personally submit the application and pay any required fees. The applicant is also provided with a checklist of all the documents and requirements (notices to neighborhood, Alcohol Beverage Establishment Review form, PCN requirement, etc.). The Alcohol Beverage Establishment Review form requires a description of the proposed plan for how the alcohol license will be used.

The applicant is provided an Alcohol Beverage Establishment Review (ABE) form from ABC to deliver to the jurisdiction the license will be used. This form begins the initial assessment by local authorities to comment on the proposal. The applicant is directed to describe the type of business, type of license desired or any modifications, days and hours of operation, merchandise and/or services the business will provide, and any other pertinent information that is relevant for the local jurisdiction to make an initial assessment on the feasibility of the proposal. This document is not an approval by the local jurisdiction or ABC. The ABE review provides the local jurisdiction the ability to comment on the initial proposal to ABC by the applicant.

If the requested approval for a license is a Type 20, 21, 42 or 48, the license must be purchased from the owner of an existing license within the Butte County. A new Type 20 or Type 47 license can be obtained through an ABC lottery only if the County/City population has increased sufficiently to allow additional licenses into a Census Tract.

A Type 20, 21, 42 or 48 license requires a PCN from the local governing body (City Council). If a census tract is below the authorized limit for alcohol licenses, ABC can approve the license though the process still requires the PCN process.

Type 41 and Type 47 licenses require a PCN, but the applicant submits their own PCN document to ABC justifying their proposal for how the license will be used. The local governing body is not included in making a PCN determination on the proposed license on behalf of the community.

In order for an applicant to be approved for a new alcohol license or transfer a license from one census tract to another, the applicant is required to follow the ABC procedures as outlined above. No business should move forward on a proposed plan until ABC's application and review process has been adhered to and ABC has authorized and issued an alcohol license.

The World Health Organization (WHO) completed a study on Alcohol in the *European Union: Consumption, Harm, and Policy Issues* (2012). The WHO study stated, "Alcohol is one of the world's top three priority public health areas. Even though only half the global population drinks alcohol, it is the world's third leading cause of ill health and premature death, after low birth weight and unsafe sex (for which alcohol is a risk factor), and greater than tobacco. In Europe, alcohol is also the third leading risk factor for disease and mortality after tobacco and high blood pressure (WHO, 2009)".

Enloe Medical Center completed a Community Health Survey as part of the 2013 Community Health Needs Assessment conducted in collaboration with Enloe Medical Center, Feather River Hospital, Biggs-Gridley Memorial Hospital, and Butte County Public Health. In answer to the question, *Most challenging "Risky Behavior" facing our community*, the number one ranked response was Drug Abuse, the second ranked response was Alcohol Use, and the third ranked response was Driving While Under the Influence. Additionally, data was compared between Butte County and (where available) the United States for binge drinking and heavy alcohol consumption. In both cases, the research revealed Butte County had a higher rate.

Enloe Medical Center provided general information on the impacts they endure as a result of alcohol intoxication. On a typical Friday or Saturday night, the emergency room serves between three (3) and ten (10) alcohol-related cases. In most instances, these individuals are brought to the emergency room by ambulance, friends or family when they become concerned for their safety. Enloe Medical Center's data revealed the emergency room receives between two (2) to four (4) alcohol overdose individuals, between the ages of 17 to 22 years of age, every weekend night while school is in session. The emergency room has approximately twenty-five (25) alcohol related cases on holidays that historically have high levels of alcohol consumption (Labor Day, Halloween, St. Patrick's Day, Cesar Chavez Day, and Memorial Day). The emergency room does experience alcohol and drug overdose related deaths, some intentional and some accidental. During the period of July 2012 through June 2013, Enloe Medical Center treated 845 individuals for public intoxication or alcohol overdose at a cost of \$3000.00 per individual. This cost of treatment was approximately \$2.5 million dollars.

The Centers for Disease Control and Prevention reported on a new study, completed by The Lewin Group in February 2013, that found excessive alcohol consumption cost the United States \$223.5 billion in 2006. Almost three-quarters of these costs were due to binge drinking. Binge drinking is defined as consuming four or more alcoholic beverages per occasion for women or five or more drinks per occasion for men. The study said "researchers found that the cost of excessive drinking was quite far-reaching, reflecting the effect this dangerous behavior has on many aspects of the drinker's life and on the lives of those around them. The costs largely resulted from losses in workplace productivity (72% of the total cost), health care expenses for problems caused by excessive drinking (11% of the total), law enforcement and other criminal justice expenses related to excessive alcohol consumption (9% of total), and motor vehicle crash costs from impaired driving (6% of the total). Refer to Attachment C for details of the *Economic Costs of Excessive Alcohol Consumption in the United States, 2006, The Lewin Group, February 2013*. The Attachment is limited to the Executive Summary due to the voluminous pages of the study. The final report can be found on the Web: <http://www.lewin.com/publications/publication/451>.

The "party culture" reputation that CSU, Chico and Butte College have had for many years continues to exacerbate this problem. Former California State University president Manuel Esteban and Professor Walt Schafer completed a research article entitled, *Confronting College Student Drinking: A Campus Case Study* that was published in the California Journal of Health Promotion, 2005. The article highlighted the darker



story of Chico State University which revealed the “shadow side” of student alcohol abuse and the university’s reputation as a “party school”. The article stated that “student drinking has long been a challenge for campus leaders at CSU, Chico, constantly threatening the quality of academic life, as well as student health and safety”. Refer to exhibit D to review the article. In a 2011 survey of 1,836 incoming CSU, Chico freshmen, 35 percent reported they had participated in binge drinking before arriving on campus – far more than national survey results of 22 percent.

An article published in CSU, Chico’s Statements section on their web page, *Under the Influence; Student Drinking Takes Its Toll*, begins with “Probably nothing is better known – or more regretted – about California State University, Chico than its number one party-school ranking by *Playboy* magazine in 1987. Author Marion Harmon discussed the dynamics of the drinking culture in Chico and spoke to the alcohol related deaths referring to it as a tragic trend. Adrian Heideman was 18 years old when his life ended due to an alcohol related cause. Harmon wrote, “Heideman was the fourth CSU, Chico student in five years to die from alcohol-related causes. In 1997, 21 year old Justin Sommers died at a party from alcohol poisoning and the ‘designer drug’ GHB, and in 1996 and 1998, respectively, Chance Woodroof and Nicholas Losik died from alcohol poisoning after celebrating their 21<sup>st</sup> birthdays by trying to down the ‘traditional’ 21 shots of alcohol”. Additionally, Harmon stated in the article that “It’s a socially accepted drug, and many local businesses make a lot of money from it. The most noticeable are the dollar drink specials and the ‘pub crawls’ promoted by bars, providing students with added incentives to drink more and drink faster”. As such, the alcohol abuse issue has been a systemic problem for decades within our community, yet no tangible actions have been taken to overcome this darkness. Refer to Attachment E for details. In the 1990’s, four (4) young people died from alcohol during a 5 year period of time.

Chico has an alcohol abuse problem. In the City last year, the 2012 alcohol related crime incidents totaled 1,639. A map showing these calls for service can be located in Attachment F. The ultimate tragedy has been six deaths of young people from alcohol related incidents from August 2012 through April 2013 in our community; an 8 month period of time. Refer to Attachment G. How many more young people must die from alcohol-related incidents before our community takes active and substantial steps in preventing these tragedies from occurring in our future?

Because of the significance of the aforementioned deaths and the continued debauchery alcohol abuse has created in our community, a *Community Call to Action* meeting was held in February 2013. This meeting was, once again, undertaken to find solutions in solving public safety issues and health concerns among our citizenry. Since this meeting, the community and our academic institutions have continued to gather ideas, discuss solutions, and work toward building a consensus in overcoming these significant challenges. While this process takes months or years for a community to come to an agreement to implement action, the City of Chico does not have this luxury. Alcohol license applications continue to be received by ABC for approval, so the City’s ability to sit back and take no action is unrealistic. Applications for alcohol licenses within the City of Chico will continue to be presented to the governing body to make Determinations of Public Convenience or Necessity or recommend special conditions for these licenses. Since the City Council has the opportunity to do their part to curb this significant community health issue through the establishment of public policy, the Council must actively address it, not continue to engage in an endless dialogue.

There is a significant amount of evidence based research that correlates the volume of drinking and the corresponding necessity for police, fire, and emergency medical service response to critical incidents such as acts of violence, sexual assaults, disorderly events, disturbance of the peace, public intoxication, and alcohol overdoses among others, is well documented. In an article published on behalf of the American

Journal of Preventive Medicine, *The Effectiveness of Limiting Alcohol Outlet Density as a Means of Reducing Excessive Alcohol Consumption and Alcohol-Related Harms*, research based studies were reviewed to assess the effects of outlet density. The article stated, “Most of the studies included in this review found that greater outlet density is associated with increased alcohol consumption and related harms, including medical harms, injury, crime, and violence. Primary evidence was supported by secondary evidence from correlational studies. The regulation of alcohol outlet density may be a useful public health tool for the reduction of excessive alcohol consumption and related harms”. Regulation would include licensing and zoning restrictions. Refer to Attachment H for details.

The Centers for Disease Control and Prevention completed a study on *Using Public Health and Community Partnerships to Reduce Density of Alcohol Outlets*. The abstract cites that “excessive alcohol use causes approximately 80,000 deaths in the United States each year. ‘The Guide to Community Preventive Services’ recommends reducing the density of alcohol outlets – the number of physical locations in which alcoholic beverages are available for purchase either per area or per population – through the use of regulatory authority as an effective strategy for reducing excessive alcohol consumption and related harms”. Refer to Attachment I for details.

The Oxford University Press published an article entitled, *Epidemiology and Policy, Hours and days of Sale and Density of Alcohol Outlets: Impacts on Alcohol Consumption and damage: A Systematic Review*. The aim of this study was to examine research studies published between 2000 and 2008 focusing on the availability of alcohol. The researchers were attempting to determine if there was a negative impact from the hours and days of sale and the density of alcohol outlets. The findings revealed the majority of studies reviewed found that alcohol density and hours and days of sale had an impact on one or more of the three main outcome variables, such as overall alcohol consumption, drinking patterns, and damage from alcohol. The researcher’s conclusion was restricting availability of alcohol is an effective measure to prevent alcohol-attributable harm. The study stated a secondary effect of each new alcohol outlet potentially increases the competitive pressures on existing outlets, which may result in price reductions that tend to lead to increased levels of consumption. Refer to Attachment J for details.

The director of the Centers for Disease Control and Prevention formed an independent, nonfederal, unpaid group of public health and prevention experts to form the Community Preventative Services Task Force. This Task Force recommended numerous alcohol policy strategies for reducing excessive alcohol consumption and related harm, including the regulation of alcohol outlet density. Refer to Attachment K for an overview of the Task Force’s recommendation for limiting alcohol outlet density.

The ability of a local community to implement community guidelines recommended by the Center for Disease Control and Prevention’s Task Force is dependent upon whether the state delegates the authority to regulate the sales and distribution of alcoholic beverages by local government. The American Journal of Preventive Medicine published an article entitled, *State Pre-Emption, Local Control, and Alcohol Retail Outlet Density Regulation, 2013*. This article is a good research document that explains state pre-emption and local land use powers available to local jurisdictions. Refer to Attachment L for details.

In the *Strategizer 55, Regulating Alcohol Outlet Density: An Action Guide*, the research document states “one of the most effective approaches for reducing excessive drinking and its many health and social consequences is to limit the physical availability of alcohol. One approach to doing so is regulating alcohol density or the concentration of retail alcohol establishments, including bars and restaurants and liquor or packaging stores, in a given geographic area. A high concentration of alcohol outlets leads to a variety of serious health and social consequences, including violence, alcohol-impaired driving, neighborhood

disruption, and public nuisance activities". The document stated "dangerous behavior can lead to a range of health and social problems, including unintentional injuries (e.g., automobile crashes and drowning), interpersonal violence, HIV infection, unplanned pregnancy, alcohol poisoning, and Fetal Alcohol Spectrum Disorders. Over time excessive alcohol consumption increases the risk of alcohol dependency, cancer, and high blood pressure, among other chronic conditions. Underage youth who binge drink are also at additional risk of poor school performance and interrupted brain development. Alcohol use at younger ages is also associated with increased risks of alcohol problems including alcohol dependence later in life." Refer to Attachment M for details.

The Ventura County Limits newsletter, June 2005, included an article on *Public Convenience or Necessity: The Power of Local Municipalities to Control Alcohol Outlet Density*. The article discusses concern about growth and urban development and communities being at risk by becoming oversaturated with bars, liquor stores, and other locations where alcohol can be purchased. The article cites if reasonable limits are not imposed, such conditions can threaten public health and safety and reduce the quality of life in surrounding neighborhoods. "There is now a large and growing body of evidence showing that the negative consequences of alcohol use are strongly influenced by environmental factors. Foremost among these factors is alcohol-outlet density". The article suggests criteria be used when considering how and where to draw the line. Refer to Attachment N for details.

The Ventura County Limits completed a policy briefing on *Best Practices in Municipal Regulation to Reduce Alcohol-Related Harms from Licensed Alcohol Outlets, October 2007*. It discusses effective methods of locally controlling the alcohol issues in a community through Conditional Use Permits and Deemed Approved Ordinances. The City of Vallejo amended Ordinance 1399 and adopted a "Deemed Approved" regulation pertaining to performance standards and abatement procedures for the sale of alcohol beverages in the 1990's. City leaders had determined there were significant alcohol-related health and safety issues occurring in their community to warrant this action. Refer to Attachment O for details.

Lastly, it is recommended the city council review public policy on restaurants that "morph" into bars and nightclubs. "Morphing" is the practice of restaurants that shift their main operations from a Bona-fide eating establishment during the day to alcohol sales at night. Restaurants are establishments where alcohol may be consumed on the premise, and whose primary function is the sale of food with alcohol as a secondary product. Restaurants serve patrons who, during the hours when meals are regularly served come to a bona fide public eating place for the purpose of obtaining and actually ordering and obtaining a meal. The Community Prevention Initiative produced a policy brief on this issue. The document is entitled, *Restaurants that "Morph" into Bars and Nightclubs in California Communities: What's the Problem and What Can Be Done About It?* Refer to Attachment P for recommendations on how local jurisdictions can control and regulate alcohol establishments to prevent and reduce morphing.

There are numerous research based articles on outlet density, restricting hours of alcohol sales, public health impacts caused by the consumption of alcohol, and correlation studies that connect alcohol abuse to acts of violence, sexual assaults, disorderly events, disturbance of the peace, public intoxication, increase in sexually transmitted diseases, and alcohol overdoses. Additional research articles can be found in Attachment Q for consideration in determining public policy.

As a matter of public policy, the police department recommends the City Council establish a public policy to guide the police department's recommendations on the following: 1) new alcohol licenses; 2) transfer of alcohol licenses from one census tract to another census tract within the City of Chico; 3) transfer of alcohol license from any location outside the City into a City of Chico census tract; and 4) increased restrictions of



the conditions on alcohol licenses when transferred within the same census tract or when a license changes ownership. Enacting a policy developed using evidence based research as described above, would be a positive step policy makers could make as one of the solutions to our alcohol abuse challenges.

The police department recommends taking local control of the alcohol-related health and safety issues occurring in our community through the use of Conditional Use Permits, Deemed Approved Ordinances, and a standard set of Special Conditions for ABC licenses. A recommendation of conditions for off-sale alcohol outlets, on-sale restaurants, and on-sale public premise licenses can be found in Attachment R.

Reviewed by:

Approved by:

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Kirk Trostle, Chief of Police

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Brian S. Nakamura, City Manager

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**ATTACHMENTS:**

City Council Agenda Report, Item #4.5, May 21, 2013

City Council Agenda Report, Item #4.3, July 2, 2013

Attachments A through R

**FILE:**



**Internal Affairs Committee  
Agenda Report**

**Meeting Date: July 24, 2013**

TO: City Council Internal Affairs Committee  
FROM: Mark Wolfe, AICP, Community Development Director  
RE: Regulation of Alcoholic Beverage Establishments

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**REPORT IN BRIEF**

The City's authority to regulate Alcoholic Beverage Establishments is exercised via Title 19 of its Municipal Code. This Title, "Land Use Regulations and Development Standards", restricts such businesses to certain zoning districts, and in some cases, requires that a Use Permit be secured. Further, the Code limits the number of such establishments in the Downtown area. While the state Alcoholic Beverage Control Board (ABC) consults with the City and considers its recommendations on the issuance of liquor licenses and determinations of Public Convenience and Necessity (PCN), it is not bound by the City's Code; it may, over the City's objections, take unilateral action on the permit applications it receives.

Recent matters before the Council involving PCNs for alcoholic beverage establishments have brought to light some challenges faced under the current method of regulation. Because most of the zoning districts allowing such establishments permit them by right (i.e., without the need for a Use Permit), the City's ability to impose conditions on their operation is limited to what the ABC might include via its permitting process. Without a City permit requirement, the City has no enforcement authority. Under the current system, the City in effect relies on the ABC to carry out a local land use regulation function.

This memorandum provides a very brief summary of possible actions the Committee may wish to recommend to the Council on this subject. The alternatives range from maintaining the status quo to some significant changes in the Municipal Code.

Recommendation:

The Community Development Director recommends that the Internal Affairs Committee accept this report, and provide direction to staff as may be necessary.

**REGULATORY CONTEXT**

Definition of an Alcoholic Beverage Establishment: The Municipal Code defines an Alcoholic Beverage Establishment as:

"Any establishment which sells, offers, or dispenses any alcohol, and/or any establishment which has applied for or intends to apply for, or which has obtained, a liquor license from the California Department of Alcoholic Beverage Control (ABC) for the sale of alcohol. This definition shall not include uses wherein the sale, offer, or dispensing of alcohol is incidental to the conduct of a permitted use."

The definition encompasses a very wide range of uses, but at the same time provides a very broad exception. While there may be other uses where the dispensing of alcohol is "incidental" to a permitted use (for example, wine at a museum exhibit opening, etc.), main exceptions from the definition are restaurants.



Zoning: The Municipal Code allows alcoholic beverage establishments by right in four of the city's eight commercial zoning districts, and via Use Permit in two. They are also permissible with a Use Permit in two of the four Airport districts. Restaurants are allowed by right in all commercial and industrial districts, and with a Use Permit in two Airport districts. Alcohol sales at a bona fide restaurant are permissible when incidental to food service, per the Code definition.

Special Regulations: In the Downtown North and Downtown South zoning districts, special regulations apply. Per Section 19.44.060 of the Code:

"Limitation on Use - Alcoholic Beverage Establishments. No bar or drinking establishment shall be allowed in the DN (Downtown North) or DS (Downtown South) zoning districts except:

- A. Continued use of a building or a portion of a building as an alcoholic beverage establishment as defined in Section 19.04.020 of this title, or the resumption of the use of a building or portion of a building as an alcoholic beverage establishment if the building or portion thereof was operated as an alcoholic beverage establishment as of January 1, 1995; and
- B. Use of a building or portion of a building for fund-raising activities by a non-profit organization, including the use of a building or portion of a building for such purposes where the consumption of beer and/or wine is incidental to the fund-raising activity; and
- C. The relocation of an existing alcoholic beverage establishment, enlarging the occupied space of an existing alcoholic beverage establishment, and increasing the intensity of use of an existing alcoholic beverage establishment, and/or the structural alteration of the building space containing the alcoholic beverage establishment beyond repairs that are part of normal necessary maintenance, if permitted by use permit."

This Code section effectively places a cap on alcoholic beverage establishments in the downtown area.

## GENERAL SCOPE OF ALTERNATIVES FOR REGULATION

- I. Status Quo: No changes to Code.
  - Pro: - Continued flexibility for commerce
  - No expense to City to revise Code
  - Con: - Limited ability to regulate potentially detrimental land uses
- II. Mid-Range Code Amendments: Under this approach, the Municipal Code would, for example, be amended to require that alcoholic beverage establishments would require a Use Permit in all cases. The scope of the change(s), which by themselves could be significant in effect, would be comparatively limited.
  - Pro: - Increased ability to regulate potentially detrimental land uses
  - As compared to Alternative III, lower cost to City
  - As compared to Alternative III, could be achieved in shorter amount of time
  - Con: - Less flexibility and increased cost for commerce
  - Allocation of staff resources/expense to City to revise Code

III. Comprehensive Code Amendments Regarding Alcoholic Beverage Establishments: Under this scenario, the Municipal Code amendments in Alternative II would be supplemented by changes to code definitions, introduction of new definitions to reflect changes in the food/alcohol service industry, and changes to zoning land use tables and/or development standards. The scope of this alternative would be broad, and would include changes that would reduce the number of possible locations for future alcoholic beverage establishments.

Pro: - Maximum ability to regulate potentially detrimental land uses

Con: - Potentially significant restrictions on commerce/economic impacts to City  
- As compared to other Alternatives, most costly to City  
- As compared to other Alternatives, would require most amount of time

Prepared by:



Mark Wolfe, AICP, Community Development  
Director

Approved by:



Brian Nakamura, City Manager

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Police Chief Trostle  
Senior Planner Tillman  
Principal Planner Vieg

**DEPARTMENT OF ALCOHOLIC BEVERAGE CONTROL  
NUMBER OF LICENSES AUTHORIZED  
BY CENSUS TRACT**

COUNTY	CENSUS TRACT	POPULATION	AUTHORIZED ON-SALE	CURRENT ON-SALE	PERCENT OVER/UNDER	AUTHORIZED OFF-SALE	CURRENT OFF-SALE	PERCENT OVER/UNDER	GENERAL LOCATION
BUTTE	1.02	3,900	5	3	60%	3	0	0%	Lindo Channel - Mangrove, Ceres-East Ave (includes Cohasset/Hwy 99 & Pillsbury)
BUTTE	1.03	3,902	5	3	60%	3	4	133%	Floral - Wildwood Park, East Ave - North
BUTTE	1.04	5,636	7	3	43%	5	2	40%	Cohasset - Ceres, Manzanita - North
BUTTE	2.01	4,052	5	2	40%	3	2	67%	E. Lassen - Mud Creek, Hwy 99 - Cohasset
BUTTE	2.02	3,723	4	7	175%	3	7	233%	Cohasset - Hwy 99 - E. Lassen
BUTTE	3.00	4,410	5	14	280%	4	7	175%	Lindo Channel - Mud Creek, Hwy 99 - Esplanade
BUTTE	4.01	1,771	2	2	100%	1	0	0%	Esplanade - Railroad tracks, Bell Rd - Mud Creek
BUTTE	4.02	7,030	9	9	100%	6	4	67%	Esplanade - Alamo, Lindo Channel - North end of Bay Av
BUTTE	5.01	4,333	5	1	20%	3	5	167%	Railroad tracks - W. Sac. Ave, Muir Ave - W. 8th Ave
BUTTE	5.02	4,204	5	3	60%	3	4	133%	Big Chico Creek - Railroad tracks - W. 8th Ave
BUTTE	6.01	3,304	4	1	25%	3	1	33%	Esplanade - Railroad tracks, W. 8th Ave - Lindo Channel
BUTTE	6.03	3,130	4	1	25%	2	0	0%	Esplanade - Warner St, Big Chico Creek - W. 8th Ave
BUTTE	6.04	4,217	5	1	20%	3	2	67%	W. 8th Ave - Big Chico Creek, Warner St - Railroad tracks
BUTTE	7.00	4,694	6	15	250%	4	7	175%	Esplanade - Hwy 99, Big Chico Creek - Lindo Channel
BUTTE	8.00	5,295	6	2	33%	4	4	100%	Lindo Channel - Big Chico Creek - Hwy 99
BUTTE	9.01	2,142	2	2	100%	1	0	0%	Skyway - Stilson Canyon Rd, Hwy 99 - E. 20th St - Potter Rd
BUTTE	9.03	6,117	7	18	257%	5	12	240%	Hwy 99 - Hwy 32 - Bruce Rd (extension south to Hwy 99)
BUTTE	9.04	6,071	7	3	43%	5	1	20%	Hwy 32 - Big Chico Creek, Hwy 99 - Yosemite
BUTTE	10.00	4,801	6	63	1050%	4	10	250%	Hwy 99 - Railroad tracks, Big Chico Cr - Little Chico Cr
BUTTE	11.00	4,572	5	8	160%	4	5	125%	Railroad tracks to west city limit, Big Chico Cr to south city limit
BUTTE	12.00	3,556	4	3	75%	3	1	33%	Little Chico Cr - Park Ave/Midway - Railroad tracks
BUTTE	13.00	4,169	5	11	220%	3	12	400%	Little Chico Cr-Southern City Limit, Park Ave/Midway-Hwy 99
BUTTE	14.00	5,797	7	4	57%	5	1	20%	County jurisdiction from Dayton Rd to Cohasset Rd (inc. airport)
BUTTE	15.00	5,297	6	5	83%	4	3	75%	County jurisdiction from Dayton Rd to Hwy 99 except in Tract 12

Indicates room under saturation point

Updated May 2012



**COMMON ABC LICENSE TYPES  
AND THEIR BASIC PRIVILEGES**

LICENSE TYPE	DESCRIPTION
01	<b>BEER MANUFACTURER - (Large Brewery)</b> Authorizes the sale of beer to any person holding a license authorizing the sale of beer, and to consumers for consumption on or off the manufacturer's licensed premises. Without any additional licenses, may sell beer and wine, regardless of source, to consumers for consumption at a bona fide public eating place on the manufacturer's licensed premises or at a bona fide eating place contiguous to the manufacturer's licensed premises. May conduct beer tastings under specified conditions (Section 23357.3). Minors are allowed on the premises.
02	<b>WINEGROWER - (Winery)</b> Authorizes the sale of wine and brandy to any person holding a license authorizing the sale of wine and brandy, and to consumers for consumption off the premises where sold. Authorizes the sale of all wines and brandies, regardless of source, to consumers for consumption on the premises in a bona fide eating place that is located on the licensed premises or on premises owned by the licensee that are contiguous to the licensed premises and operated by and for the licensee. May possess wine and brandy for use in the preparation of food and beverage to be consumed at the bona fide eating place. May conduct winetastings under prescribed conditions (Section 23356.1; Rule 53). Minors are allowed on the premises.
20	<b>OFF SALE BEER &amp; WINE - (Package Store)</b> Authorizes the sale of beer and wine for consumption off the premises where sold. Minors are allowed on the premises.
21	<b>OFF SALE GENERAL - (Package Store)</b> Authorizes the sale of beer, wine and distilled spirits for consumption off the premises where sold. Minors are allowed on the premises.
23	<b>SMALL BEER MANUFACTURER - (Brew Pub or Micro-brewery)</b> Authorizes the same privileges and restrictions as a Type 01. A brewpub is typically a very small brewery with a restaurant. A micro-brewery is a small-scale brewery operation that typically is dedicated solely to the production of specialty beers, although some do have a restaurant or pub on their manufacturing plant.
40	<b>ON SALE BEER - (Bar, Tavern)</b> Authorizes the sale of beer for consumption on or off the premises where sold. No wine or distilled spirits may be on the premises. Full meals are not required; however, sandwiches or snacks must be available. Minors are allowed on the premises.
41	<b>ON SALE BEER &amp; WINE – EATING PLACE - (Restaurant)</b> Authorizes the sale of beer and wine for consumption on or off the premises where sold. Distilled spirits may not be on the premises (except brandy, rum, or liqueurs for use solely for cooking purposes). Must operate and maintain the licensed premises as a bona fide eating place. Must maintain suitable kitchen facilities, and must make actual and substantial sales of meals for consumption on the premises. Minors are allowed on the premises.
42	<b>ON SALE BEER &amp; WINE – PUBLIC PREMISES - (Bar, Tavern)</b> Authorizes the sale of beer and wine for consumption on or off the premises where sold. No distilled spirits may be on the premises. Minors are not allowed to enter and remain (see Section 25663.5 for exception, musicians). Food service is not required.
47	<b>ON SALE GENERAL – EATING PLACE - (Restaurant)</b> Authorizes the sale of beer, wine and distilled spirits for consumption on the licenses premises. Authorizes the sale of beer and wine for consumption off the licenses premises. Must operate and maintain the licensed premises as a bona fide eating place. Must maintain suitable kitchen facilities, and must make actual and substantial sales of meals for consumption on the premises. Minors are allowed on the premises.
48	<b>ON SALE GENERAL – PUBLIC PREMISES - (Bar, Night Club)</b> Authorizes the sale of beer, wine and distilled spirits for consumption on the premises where sold. Authorizes the sale of beer and wine for consumption off the premises where sold. Minors are not allowed to enter and remain (see Section 25663.5 for exception, musicians). Food service is not required.
49	<b>ON SALE GENERAL – SEASONAL -</b> Authorizes the same privileges and restrictions as provided for a Type 47 license except it is issued for a specific season. Inclusive dates of operation are listed on the license certificate.



LICENSE TYPE	DESCRIPTION
51	<b>CLUB</b> - Authorizes the sale of beer, wine and distilled spirits, to members and guests only, for consumption on the premises where sold. No off-sale privileges. Food service is not required. Minors are allowed on the premises.
52	<b>VETERAN'S CLUB</b> - Authorizes the sale of beer, wine and distilled spirits, to members and guests only, for consumption on the premises where sold. Authorizes the sale of beer and wine, to members and guest only, for consumption off the licensed premises. Food service is not required. Minors are allowed on the premises.
57	<b>SPECIAL ON SALE GENERAL</b> - Generally issued to certain organizations who cannot qualify for club licenses. Authorizes the sale of beer, wine and distilled spirits, to members and guests only, for consumption on the premises where sold. Authorizes the sale of beer and wine, to members and guests only, for consumption off the licensed premises. Food service is not required. Minors are allowed on the premises.
59	<b>ON SALE BEER AND WINE – SEASONAL</b> - Authorizes the same privileges as a Type 41. Issued for a specific season. Inclusive dates of operation are listed on the license certificate.
60	<b>ON SALE BEER – SEASONAL</b> - Authorizes the sale of beer only for consumption on or off the premises where sold. Issued for a specific season. Inclusive dates of operation are listed on the license certificate. Wine or distilled spirits may not be on the premises. Minors are allowed on the premises.
61	<b>ON SALE BEER – PUBLIC PREMISES</b> - (Bar, Tavern) Authorizes the sale of beer only for consumption on or off the licensed premises. Wine or distilled spirits may not be on the premises. Minors are not allowed to enter and remain (warning signs required). Food service is not required.
67	<b>BED AND BREAKFAST INN</b> - Authorizes the sale of wine purchased from a licensed winegrower or wine wholesaler only to registered guests of the establishment for consumption on the premises. No beer or distilled spirits may be on the premises. Wine shall not be given away to guests, but the price of the wine shall be included in the price of the overnight transient occupancy accommodation. Removal of wine from the grounds is not permitted. Minors are allowed on the premises.
70	<b>ON SALE GENERAL – RESTRICTIVE SERVICE</b> - Authorizes the sale or furnishing of beer, wine and distilled spirits for consumption on the premises to the establishment's overnight transient occupancy guests or their invitees. This license is normally issued to "suite-type" hotels and motels, which exercise the license privileges for guests' "complimentary" happy hour. Minors are allowed on the premises.
75	<b>ON SALE GENERAL – BREWPUB</b> - (Restaurant) Authorizes the sale of beer, wine and distilled spirits for consumption on a bona fide eating place plus a limited amount of brewing of beer. Also authorizes the sale of beer and wine only for consumption off the premises where sold. Minors are allowed on the premises.
80	<b>BED AND BREAKFAST INN – GENERAL</b> - Authorizes the sale of beer, wine and distilled spirits purchased from a licensed wholesaler or winegrower only to registered guests of the establishment for consumption on the premises. Alcoholic beverages shall not be given away to guests, but the price of the alcoholic beverage shall be included in the price of the overnight transient occupancy accommodation. Removal of alcoholic beverages from the grounds is not permitted. Minors are allowed on the premises.
86	<b>INSTRUCTIONAL TASTING LICENSE</b> —Issued to the holder of and premises of a Type 20 or Type 21 licensee, authorizes the tasting of alcoholic beverages as authorized to be sold from the off-sale premises, on a limited basis. Requires physical separation from the off-sale premises while tasting is taking place and generally requires the participation of a specifically-authorized manufacturer or wholesaler licensee.





## SPECIAL EVENTS

The Department also issues licenses and authorizations for the retail sale of beer, wine and distilled spirits on a temporary basis for special events. The most common are listed below. Other less common ones are found in Business and Professions Code Section 24045.2, et seq.

**SPECIAL DAILY BEER AND/OR WINE LICENSE** - (Form ABC-221) Authorizes the sale of beer and/or wine for consumption on the premises where sold. No off-sale privileges. Minors are allowed on the premises. May be revoked summarily by the Department if, in the opinion of the Department and/or the local law enforcement agency, it is necessary to protect the safety, welfare, health, peace and morals of the people of the State. In some instances, the local ABC office may require the applicant to obtain prior written approval of the local law enforcement agency. Issued to non-profit organizations. (Rule 59, California Code of Regulations)

**DAILY ON SALE GENERAL LICENSE** - (Form ABC-221) Authorizes the sale of beer, wine and distilled spirits for consumption on the premises where sold. No off-sale privileges. Minors are allowed on the premises. May be revoked summarily by the Department if, in the opinion of the Department and/or the local law enforcement agency, it is necessary to protect the safety, welfare, health, peace and morals of the people of the State. In some instances, the local ABC office may require the applicant to obtain prior written approval of the local law enforcement agency. Issued to political parties or affiliates supporting a candidate for public office or a ballot measure or charitable, civic, fraternal or religious organizations. (Section 24045.1 and Rule 59.5 California Code of Regulations)

**CATERING AUTHORIZATION** - (Form ABC-218) Authorizes Type 47, 48, 51, 52, 57, 75 and 78 licensees (and catering businesses that qualify under Section 24045.12) to sell beer, wine and distilled spirits for consumption at conventions, sporting events, trade exhibits, picnics, social gatherings, or similar events. Type 47, 48 and 57 licensees may cater alcoholic beverages at any ABC-approved location in the State. Type 51 and 52 licensees may only cater alcoholic beverages at their licensed premises. All licensees wishing to cater alcoholic beverages must obtain prior written authorization from the Department for each event. At all approved events, the licensee may exercise only those privileges authorized by the licensee's license and shall comply with all provisions of the ABC Act pertaining to the conduct of on-sale premises and violation of those provisions may be grounds for suspension or revocation of the licensee's license or permit, or both, as though the violation occurred on the licensed premises. (Section 23399 and Rule 60.5 California Code of Regulations)

**VENT AUTHORIZATION** - (Form ABC-218) Authorizes Type 41, 42, 47, 48, 49, 57, 75 and 78 licensees to sell beer, wine and distilled spirits for consumption on property adjacent to the licensed premises and owned or under the control of the licensee. This property shall be secured and controlled by the licensee and not visible to the general public. *The licensee shall obtain prior approval of the local law enforcement agency.* At all approved events, the licensee may exercise only those privileges authorized by the licensee's license and shall comply with all provisions of the ABC Act pertaining to the conduct of on-sale premises (including any license conditions) and violations of those provisions may be grounds for suspension or revocation of the licensee's license or permit, or both, as though the violation occurred on the licensed premises. (Section 23399)

**WINE SALES EVENT PERMIT** - (Form ABC-239) Authorizes Type 02 licensees to sell bottled wine produced by the winegrower for consumption off the premises where sold and only at fairs, festivals or cultural events sponsored by designated tax exempt organizations. The licensee must notify the city and/or county where the event is being held and obtain approval from ABC for each event (Form ABC-222). The licensee must also comply with all restrictions listed in Business and Professions Code Section 23399.6.

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### Note:

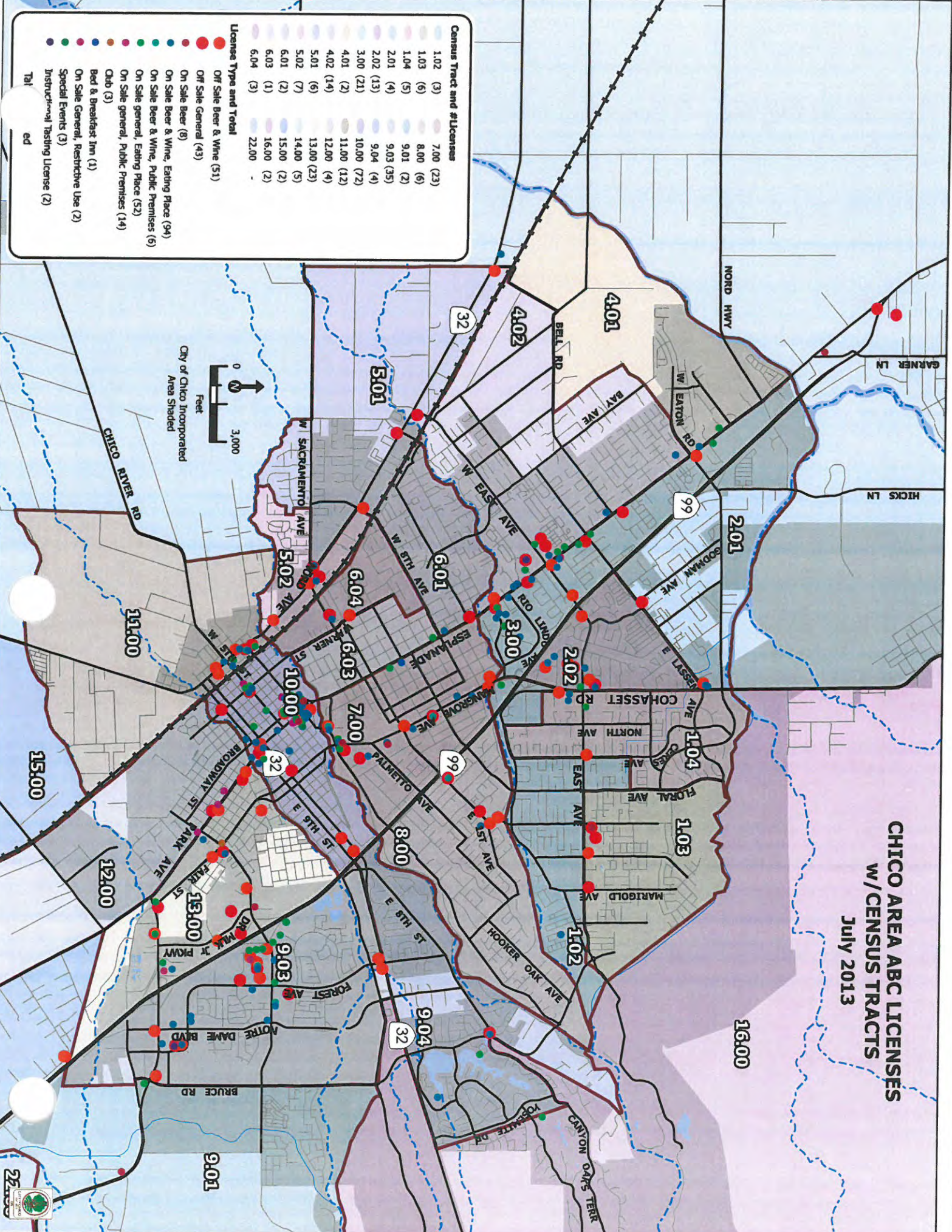
1. "Minor" means any person under 21 years of age.
2. Consult Section 25663(b) regarding age of employees in off-sale premises; consult Sections 25663(a) and 25663.5 regarding age of employees in on-sale premises.
3. In certain situations, ABC may place reasonable conditions upon a license, such as restrictions as to hours of sale, employment of designated persons, display of signs, restrictions on entertainment or dancing, etc. If a license has been conditioned, it will be endorsed as such on the face of the license. (Conditional licenses, Sections 23800-23805.)
4. Licensees whose license allows minors on the premises may have a "house policy" restricting minors from entering certain areas of the premises or prohibiting minors in the premises during certain hours.
5. This handout contains only abbreviated information. Contact your local ABC office for full information before doing anything which may jeopardize your license. Also available from the ABC: Quick Summary of Selected ABC Laws (form ABC-608); Alcoholic Beverage Control Act (complete laws); Rules & Regulations; and P-90 (describes privileges of non-retail licenses).







# CHICO AREA ABC LICENSES w/ CENSUS TRACTS July 2013



Census Tract and #Licenses	
1.02 (3)	7.00 (23)
1.03 (6)	8.00 (6)
1.04 (5)	9.01 (2)
2.01 (4)	9.03 (35)
2.02 (13)	9.04 (4)
3.00 (21)	10.00 (72)
4.01 (2)	11.00 (12)
4.02 (14)	12.00 (4)
5.01 (6)	13.00 (23)
5.02 (7)	14.00 (5)
6.01 (2)	15.00 (2)
6.03 (1)	16.00 (2)
6.04 (3)	22.00 -

License Type and Total	
Off Sale Beer & Wine (51)	Off Sale Beer (8)
Off Sale General (43)	On Sale Beer & Wine, Eating Place (94)
On Sale Beer (8)	On Sale Beer & Wine, Public Premises (6)
On Sale Beer & Wine, Eating Place (94)	On Sale general, Eating Place (52)
On Sale general, Eating Place (52)	On Sale general, Public Premises (14)
On Sale general, Public Premises (14)	Club (3)
Club (3)	Bed & Breakfast Inn (1)
Bed & Breakfast Inn (1)	On Sale General, Restrictive Use (2)
On Sale General, Restrictive Use (2)	Special Events (3)
Special Events (3)	Instructional Testing License (2)
Instructional Testing License (2)	Tailor (1)



City of Chico Incorporated Area Shaded





**CHICO AREA ABC LICENSES**

CENSUS LICENSE			ADDRESS		
TRACT	TYPE	BUSINESS	TRACT	TYPE	BUSINESS
<b>1.02</b>					
51		CHICO ELK'S LODGE	1705 MANZANITA AVE		
41		CHICO RACQUET CLUB	1629 MANZANITA AVE		
47		STAR OF INDIA	685 MANZANITA CT		
<b>1.03</b>					
21		CVS	1496 EAST AVE		
21		EAST AVE LIQUOR	1354 EAST AVE		
40		EL PATRON	1354 EAST AVE		
41		PELICAN'S ROOST	1354 EAST AVE		
20		PV 76	1398 EAST AVE		
21		SAFEWAY	1366 EAST AVE		
<b>1.04</b>					
20		7 ELEVEN	1096 EAST AVE		
20		FLYERS	2402 COHASSET RD		
41		PETER CHU'S CUISINE	2424 COHASSET RD		
47		QUACKERS	968 EAST AVE		
41		SPTERIS	971 EAST AVE		
<b>2.01</b>					
41		BURGER HUT	3211 COHASSET RD		
20		CORNER MARKET	1194 E LASSEN AVE		
41		MEKKALA THAI	1196 E LASSEN AVE		
21		TOWER MART	710 E LASSEN AVE		
<b>2.02</b>					
20		CHICO SUPER FOOD MART	481 EAST AVE		
21		CVS	801 EAST AVE		
20		DOLLAR TREE	801 EAST AVE		
41		FAST EDDIE'S	788 EAST AVE		
41		GINGERS CHINESE	2201 PILLSBURY RD		
20		GROCERY OUTLET	2157 PILLSBURY RD		
48		LAST CALL	876 EAST AVE		
21		LIKKER LOCKER	874 EAST AVE		
41		ROUND TABLE PIZZA	2201 PILLSBURY RD		
41		SCRAMBLES	880 EAST AVE		
47		THE POUR HOUSE	855 EAST AVE		
20		TRADER JOES	801 EAST AVE		
20		WALGREENS	860 EAST AVE		

CENSUS LICENSE			ADDRESS		
TRACT	TYPE	BUSINESS	TRACT	TYPE	BUSINESS
<b>3.00</b>					
47		ALBATROSS	3312 ESPLANADE		
20		CHEVRON	360 EAST AVE		
41		CHICO SPORTS CLUB	260 COHASSET RD		
21		CIRCLE R	2230 ESPLANADE		
21		CITY LIQUOR AND MARKET	3028 ESPLANADE		
21		CVS PHARMACY	2780 ESPLANADE		
21		DUKES	2360 ESPLANADE		
47		END ZONE	250 COHASSET RD		
41		HAPPY GARDEN	180 COHASSET RD		
41		HULA'S	2540 ESPLANADE		
47		ITALIAN COTTAGE	2234 ESPLANADE		
20		J&J FOOD AND GAS	2538 ESPLANADE		
41		KALICO KITCHEN	2396 ESPLANADE		
47		PANIGHETTI'S EATERY	2760 ESPLANADE		
20		PDQ MARKET	156 EATON RD		
41		PRIYA	2574 ESPLANADE		
47		RICE BOWL	2804 ESPLANADE		
41		RUSSELL'S	185 COHASSET RD		
41		SIN OF CORTEZ	2290 ESPLANADE		
48		STUDIO INN	2582 ESPLANADE		
41		WHITE OAK CAFE	196 COHASSET RD		
<b>4.01</b>					
47		BASQUE NORTE	3355 ESPLANADE		
41		SOL MEXICAN GRILL	3269 ESPLANADE		

**CHICO AREA ABC LICENSES**

CENSUS LICENSE			CENSUS LICENSE		
TRACT	TYPE	BUSINESS	TRACT	TYPE	BUSINESS
<b>4.02</b>			<b>7.00</b>		
47	AMF ORCHARD LANES	2397 ESPLANADE	20	AJ MARKET	580 E 10TH AVE
41	CALIFORNIA PASTA PRODUCTIONS	118 W EAST AVE	41	BIG TUNA SUSHI BISTRO	1722 MANGROVE AVE
47	CASA RAMOS	216 W EAST AVE	41	CHAMPENG'S MANDARIN CUISINE	1140 MANGROVE AVE
41	FARM STAR	2359 ESPLANADE	47	CHIPOTLE MEXICAN GRILL	620 MANGROVE AVE
41	JAPANESE BLOSSOMS	2995 ESPLANADE	41	COZY DINER	1695 MANGROVE AVE
47	LA HACIENDA	2635 ESPLANADE	20	CREEKSIDE CELLARS	250 VALLOMBROSA AVE
21	RALEYS	211 W EAST AVE	42	CREEKSIDE CELLARS	250 VALLOMBROSA AVE
86	RALEYS	211 W EAST AVE	47	GEN KAI JAPANESE RESTAURANT	605 MANGROVE AVE
41	RICARDO'S	2365 ESPLANADE	67	GOODMAN HOUSE	1362 ESPLANADE
21	RITTE AID	220 W EAST AVE	40	JERSEYS	615 MANGROVE AVE
21	SAVE MART	146 W EAST AVE	41	KWANDO RESTAURANT	740 MANGROVE AVE
47	TORTILLA FLATS	2601 ESPLANADE	40	LA COMIDA	954 MANGROVE AVE
20	VALERO	2233 ESPLANADE	21	MANGROVE BOTTLE SHOP	1350 MANGROVE AVE
41	WINE TIME	26 LOST DUTCHMAN DR	42	MANGROVE BOTTLE SHOP	1350 MANGROVE AVE
<b>5.01</b>			41	MORNING THUNDER	352 VALLOMBROSA AVE
21	BLUE OVAL FOODMART	1025 NORD AVE	41	MOUNTAIN MIKE'S PIZZA	1722 MANGROVE AVE
20	QUICK STOP MARKET	2269 NORD AVE	41	NOODLE HOUSE	605 MANGROVE AVE
21	QUICK STOP MARKET	2269 NORD AVE	47	RED TAVERN	1250 ESPLANADE
41	SPEEDY BURRITO	1031 NORD AVE	20	RELLANCE GAS	1101 MANGROVE AVE
20	SPORTSMAN'S 76	1800 NORD AVE	21	RITTE AID	650 MANGROVE AVE
21	TOWER MART	1255 W EAST AVE	41	ROUND TABLE PIZZA	964 MANGROVE AVE
<b>5.02</b>			20	S&S PRODUCE	1924 MANGROVE AVE
41	ADNAMI	1008 W SACRAMENTO AVE	21	SAFEWAY	720 MANGROVE AVE
20	IBRAHIM SAYEGH	409 NORD AVE	<b>8.00</b>		
41	LA FAMILIA	1008 W SACRAMENTO AVE	41	CABANA CAFE	1293 E 1ST AVE
41	MAMA CELESTE'S	1008 W SACRAMENTO AVE	21	FINNIGAN'S JUG LIQUOR	1084 E 1ST AVE
20	NORD AVENUE SHELL	952 NORD AVE	42	FINNIGAN'S JUG LIQUOR	1084 E 1ST AVE
21	SAFEWAY	1016 W SACRAMENTO AVE	21	SPIKE'S BOTTLE SHOP	1270 E 1ST AVE
21	STAR LIQUORS	959 NORD AVE	20	TONY'S MARKET	1385 LONGFELLOW AVE
<b>6.01</b>			20	VALERO	1350 LONGFELLOW AVE
21	ANTHONY'S	2101 ESPLANADE	<b>9.01</b>		
41	TURANDOT	1851 ESPLANADE	47	ITALIAN COTTAGE	2525 DOMINIC DR
<b>6.03</b>			40	SKYWAY GOLF PARK	1 LONGEST DR
47	NASH'S	1717 ESPLANADE	<b>6.04</b>		
41	MONSTRO PIZZA	626 W SACRAMENTO AVE	21	TONY'S LIQUOR	634 W SACRAMENTO AVE
21	TONY'S LIQUOR	634 W SACRAMENTO AVE	20	WARNER ST GROCERY	1147 WARNER ST

CHICO AREA ABC LICENSES

CENSUS LICENSE			CENSUS LICENSE		
TRACT	TYPE	BUSINESS	TRACT	TYPE	BUSINESS
<b>9.03</b>			<b>9.04</b>		
20	7	ELEVEN	41	BELLACHINO'S COFFEE	800 BRUCE RD
47	APPLEBEE'S	2030 BUSINESS LN	21	CALIFORNIA PARK MARKET	800 BRUCE RD
20	ARCO AMPM	2000 BUSINESS LN	47	JBS CATERING	2500 CALIFORNIA PARK DR
21	BEVMO	1937 E 20TH ST	41	THE TERRACES	2750 SIERRA SUNRISE TER
42	BEVMO	1937 E 20TH ST	<b>10.00</b>		
20	BIG LOTS	1927 E 20TH ST	21	5TH & IVY LIQUOR	645 W 5TH ST
41	BURGER HUT	2451 FOREST AVE	47	5TH ST STEAKHOUSE	345 W 5TH ST
41	BURRITO BANDITTO	2485 NOTRE DAME	20	7 ELEVEN	101 MAIN ST
21	CHICO SHELL	2036 FOREST AVE	21	ABC MARKET	715 W 9TH ST
47	CHILIS	1908 E 20TH ST	41	ACA TACO	133 BROADWAY ST
41	CHIPOTLE	1960 E 20TH ST	41	AMIGOS DE ACAPULCO	820 OROVILLE AVE
41	COCODINE	2485 NOTRE DAME	41	BEACH HUT DELI	146 W 2ND ST
20	CVS PHARMACY	1120 FOREST AVE	20	BEATNICK'S	1387 E 8TH ST
20	DOLLAR TREE	2485 NOTRE DAME	47	BELLAS	134 BROADWAY ST
41	EL PATROL	2454 NOTRE DAME	40	BLUE ROOM	139 W 1ST ST
41	EL PATROL	2454 NOTRE DAME	41	BROADWAY HEIGHTS	300 BROADWAY ST
20	FLYERS	2501 NOTRE DAME	47	BURGERS AND BREW	201 BROADWAY ST
41	HILAS	1937 E 20TH ST	41	CAFE CODA	265 HUMBOLDT AVE
41	ICHIBAN	2000 NOTRE DAME BLVD	41	CAFE FLO	365 E 3RD ST
47	LOGAN'S	1900 E 20TH ST	41	CAFFE MALVINA	234 W 3RD ST
47	MARIE CALLENDER'S	1910 E 20TH ST	41	CELESTINOS	101 SALEM ST
41	OIYA GOURMET	2477 FOREST AVE	47	CELESTINOS	101 SALEM ST
47	OLIVE GARDEN	2020 BUSINESS LN	41	CHADA THAI	117 W 2ND ST
47	OUTBACK STEAKHOUSE	1990 E 20TH ST	79	CHICO CELLARS	305 WALL ST
20	OXFORD SUITES	2035 BUSINESS LN	47	CHICO DIAMOND HOTEL	220 W 4TH ST
70	OXFORD SUITES	2035 BUSINESS LN	41	CHICO ICHI RAMEN	243 W 9TH ST
21	RALEYS	2485 NOTRE DAME	20	CHICO NATURAL FOODS	818 MAIN ST
86	RALEYS	2485 NOTRE DAME	47	CHRISTIAN MICHEAL'S	192 E 3RD ST
47	RED LOBSTER	2010 BUSINESS LN	41	CHRONIC TACO	119 W 2ND ST
41	ROUND TABLE PIZZA	2027 FORST AVE	48	GRAZY HORSE SALOON	303 MAIN ST
20	SKYWAY GAS & FOOD	1199 SKYWAY	47	CRUSH	201 BROADWAY ST
20	TARGET	1951 E 20TH ST	47	DOWN LO	319 MAIN ST
42	THE HANDLE BAR	2070 E 20TH ST	21	DOWNTOWN LIQUOR	598 E 8TH ST
41	TONG FONG LOW	2072 E 20TH ST	48	DUFFY'S TAVERN	337 MAIN ST
21	WINCO	2060 E 20TH ST	41	FIVE AND EYE	648 W 5TH ST
			47	FRANKY'S RESTAURANT	506 IVY ST
			41	GRANA	198 E 2ND ST
			41	HOUSE OF BAMBOO	163 E 2ND ST

CHICO AREA ABC LICENSES

CENSUS LICENSE			CENSUS LICENSE		
TRACT	TYPE	BUSINESS	TRACT	TYPE	BUSINESS
<b>10.00</b>			<b>10.00</b>		
cont			cont		
20	HOUSE OF RICE	338 BROADWAY ST	41	UNIVERSITY BAR	193 E 2ND ST
41	HWY 32 MINI MART	1295 E 8TH ST	41	WOODSTOCK'S PIZZA	166 E 2ND ST
47	JACK'S FAMILY RESTAURANT	540 MAIN ST	20	ZUCCHINI & VINE	204 MAIN ST
47	JIMMY JACK'S	305 MAIN ST			
41	JMAX PRODUCTIONS	230 W 2ND ST	<b>11.00</b>		
48	JOE'S BAR	749 W 5TH ST	20	7 ELEVEN	308 WALNUT ST
41	KINDERS MEAT & DELI	221 1/2 NORMAL AVE	47	ANGELO'S CUCINA TRINACRIA	407 WALNUT AVE
47	LA COCINA	905 WALL ST	20	BELLA'S MARKET	671 WALNUT ST
79	LA ROCCA VINEYARDS	BROADWAY ST & 3RD ST	21	CHICO PETROLEUM	1013 W 1ST ST
48	LA SALLES	229 BROADWAY ST	20	JACKPOT	1115 W 6TH ST
79	LARocca	305 WALL ST	41	MOUNTAIN MIKE'S PIZZA	1105 W 5TH ST
40	LAST STAND COMEDY	167 E 3RD ST	47	OASIS	1007 W 1ST ST
41	LEON BISTRO	817 MAIN ST	21	RAY'S	207 WALNUT ST
21	LIQUOR BANK	915 MAIN ST	42	RAY'S	207 WALNUT ST
48	LOST ON MAIN	319 MAIN ST	41	TACOS TONAYA	244 WALNUT ST
47	MADISON BEAR GARDEN	316 W 2ND ST	41	TEDDY MALIBUS	1002 W 5TH ST
47	MOM'S	209 SALEM ST	41	THE BREAKFAST BUZZ	208 CEDAR ST
41	MONK'S	128 W 2ND ST	<b>12.00</b>		
48	NORMAL STREET BAR	221 NORMAL AVE	48	OFF LIMITS	1414 PARK AVE
20	OHRI BROTHER'S	110 W 9TH ST	48	PARK AVE PUB	2010 PARK AVE
47	PANAMA BAR	177 E 2ND ST	21	SIERRA MARKET	1710 PARK AVE
41	PEKING CHINESE	243 W 2ND ST	48	THE MALTESE	1600 PARK AVE
41	PLUTOS	201 MAIN ST			
47	RAW BAR	346 BROADWAY ST			
47	RILEY'S	702 W 5TH ST			
41	SERRANO'S	645 W 5TH ST			
41	SILCILLAN CAFE	1020 MAIN ST			
41	SMOKIN MO'S BBQ	131 BROADWAY ST			
41	SPICE CREEK CAFE	230 W 3RD ST			
41	SULTAN'S BISTRO	300 BROADWAY ST			
41	TANNIN'S WINE BAR	234 W 3RD ST			
41	THAI BASIL	121 BROADWAY ST			
47	THE BANSHREE	132 W 2ND ST			
48	THE BEACH	191 E 2ND ST			
47	THE GRADUATE	322 W 8TH ST			
48	TOWNE LOUNGE	327 MAIN ST			
47	TRES HOMBRES	100 BROADWAY ST			

CHICO AREA ABC LICENSES

CENSUS LICENSE			CENSUS LICENSE				
TRACT	TYPE	BUSINESS	ADDRESS	TRACT	TYPE	BUSINESS	ADDRESS
13.00	20	76	1105 PARK AVE				NO DATA
	41	ANGELA HARRIS	175 E 20TH ST				
	47	CASA RAMOS	2490 FAIR ST				
	20	COST PLUS	2101 MARTIN LUTHER KING JR PKWY				
	21	COSTCO	2100 MARTIN LUTHER KING JR PKWY				
	41	COURTYARD MARRIOTT	2481 CARMICHAEL DR				
	21	DUKE'S	1205 PARK AVE				
	51	EAGLES LODGE	1940 MULBERRY ST				
	41	EL REY	465 E 20TH ST				
	21	FAIR ST MARKET	455 E 20TH ST				
	20	FOOD EXPRESS	2049 FAIR ST				
	21	FOOD MAXX	2051 MARTIN LUTHER KING JR PKWY				
	20	LAUREL STREET GROCERY	1345 LAUREL ST				
	20	MONEY SAVER GAS	1631 PARK AVE				
	40	OFF THE WALL	1090 E 20TH ST				
	47	PETE'S	2495 CARMICHAEL DR				
	70	RESIDENCE INN	2485 CARMICHAEL DR				
	20	SIERRA NEVADA	1075 E 20TH ST				
	41	SILVER DOLLAR SPEEDWAY	2357 FAIR ST				
	41	SILVER DOLLAR SPEEDWAY	2357 FAIR ST				
	20	THE TACKLE BOX	379 E PARK AVE				
	47	THE TACKLE BOX	379 E PARK AVE				
	21	TOWER MART	110 E PARK AVE				
14.00	21	CJ'S LAST CHANGE DINER	13670 ANDERSON BROTHERS DR				
	21	KWIKEE FOOD MART	3990 ESPLANADE				
	41	SCOTTYS	12609 RIVER RD				
	40	SUNSET HILLS GOLF COURSE	13301 GARNER LN				
	41	TAQUERIA LOS AMIGOS	3524 STATE HWY 32				
15.00	51	BUTTE CREEK COUNTRY CLUB	175 ESTATES DR				
	20	CALIFORNIA HARVEST	629 ENTTLER AVE				
16.00	47	CANYON OAKS COUNTRY CLUB	999 YOSEMITE DR				
	20	COHASSET STORE	8930 COHASSET RD				

END

**DEPARTMENT OF ALCOHOLIC BEVERAGE CONTROL**

3927 Lennane Drive, Suite 100  
Sacramento, CA 95834  
(916) 419-2500



## 2011 Moratorium Counties/Cities

### 2011 Moratorium Figures – Section 23817.5 B & P Code

On January 1, 1998, Section 23817.5 was amended to permanently establish a moratorium on the issuance of off-sale and wine licenses (Type 20) in cities and counties where the ratio of Type 20 licenses exceeds one for each 2,500 inhabitants.

In the city and county of San Francisco, the ratio has been established as one for each 1,250 inhabitants. The San Francisco computation combines off-sale beer and wine license with off-sale general licenses for the purpose of establishing the ratio.

Enclosed are the following lists and a map showing the new Type 20 license limitation data:

- List of Counties with their moratorium status.
- List of Cities in Counties with partial moratorium status.
- Summary of Changes to Moratorium Counties/Cities.

Please note the changes in moratorium counties compared to the 2005 list. There have been changes in some of the cities within the current 11 non-moratorium counties.

The new moratorium lists are effective as of May 9, 2011 and will be in effect until recalculated in approximately five years, in accordance with Section 23817.9.

The enclosed lists and map may be distributed to all interested parties.

If you have any questions or need additional information, please contact Debbie Holden:

Email: [Debra.Holden@abc.ca.gov](mailto:Debra.Holden@abc.ca.gov)

Phone: (916) 419-2535

**MORATORIUM - COUNTIES - SECTION 23817.5 B.P. CODE**

**May 9, 2011**

<b><u>COUNTY</u></b>	<b><u>MORATORIUM</u></b>	<b><u>COUNTY</u></b>	<b><u>MORATORIUM</u></b>
Alameda	No	Orange	No
Alpine	<b>YES</b>	Placer	<b>YES</b>
Amador	<b>YES</b>	Plumas	<b>YES</b>
Butte	<b>YES</b>	Riverside	No
Calaveras	<b>YES</b>	Sacramento	No
Colusa	<b>YES</b>	San Benito	<b>YES</b>
Contra Costa	No	San Bernardino	No
Del Norte	<b>YES</b>	San Diego	No
El Dorado	<b>YES</b>	San Francisco	<b>YES</b>
Fresno	<b>YES</b>	San Joaquin	<b>YES</b>
Glenn	<b>YES</b>	San Luis Obispo	<b>YES</b>
Humboldt	<b>YES</b>	San Mateo	No
Imperial	<b>YES</b>	Santa Barbara	<b>YES</b>
Inyo	<b>YES</b>	Santa Clara	No
Kern	<b>YES</b>	Santa Cruz	<b>YES</b>
Kings	<b>YES</b>	Shasta	<b>YES</b>
Lake	<b>YES</b>	Sierra	<b>YES</b>
Lassen	<b>YES</b>	Siskiyou	<b>YES</b>
Los Angeles	No	Solano	No
Madera	<b>YES</b>	Sonoma	<b>YES</b>
Marin	<b>YES</b>	Stanislaus	<b>YES</b>
Mariposa	<b>YES</b>	Sutter	<b>YES</b>
Mendocino	<b>YES</b>	Tehama	<b>YES</b>
Merced	<b>YES</b>	Trinity	<b>YES</b>
Modoc	<b>YES</b>	Tulare	<b>YES</b>
Mono	<b>YES</b>	Tuolumne	<b>YES</b>
Monterey	<b>YES</b>	Ventura	No
Napa	<b>YES</b>	Yolo	<b>YES</b>
Nevada	<b>YES</b>	Yuba	<b>YES</b>

SUMMARY OF CHANGES TO MORATORIUM COUNTIES/CITIES  
EFFECTIVE May 9, 2011

<u>NO LONGER MORATORIUM CITIES</u>	<u>CITIES</u>	<u>MORATORIUM</u>
CONTRA COSTA COUNTY	Pittsburg	NO
LOS ANGELES COUNTY	Paramount	NO
	Pico Rivera	NO
RIVERSIDE COUNTY	Beaumont	NO
	San Jacinto	NO
SACRAMENTO COUNTY	Galt	NO
SAN BERNARDINO COUNTY	Grand Terrace	NO
	Montclair	NO
	Pomona	NO
	Victorville	NO
SANTA CLARA COUNTY	Hollister	NO
VENTURA COUNTY	Westlake Village	NO
<u>NEWLY ADDED MORATORIUM CITIES</u>		
ALAMEDA COUNTY	San Leandro	YES
CONTRA COSTA COUNTY	Danville	YES
	Martinez	YES
	Walnut Creek	YES
LOS ANGELES COUNTY	Artesia	YES
	Beverly Hills	YES
	Calabasas	YES
	Covina	YES
	Culver City	YES
	El Monte	YES
	Gardena	YES
	La Puente	YES
	Manhattan Beach	YES
	San Dimas	YES
	Torrance	YES
	Whittier	YES



SUMMARY OF CHANGES TO MORATORIUM COUNTIES/CITIES  
EFFECTIVE May 9, 2011

<b>ORANGE COUNTY</b>	La Palma	<b>YES</b>
<b>RIVERSIDE COUNTY</b>	Corona	<b>YES</b>
	La Quinta	<b>YES</b>
	Palm Springs	<b>YES</b>
	Temecula	<b>YES</b>
<b>SACRAMENTO COUNTY</b>	Rio Vista	<b>YES</b>
<b>SAN DIEGO COUNTY</b>	Encinitas	<b>YES</b>
<b>SAN MATEO COUNTY</b>	Atherton	<b>YES</b>
	Burlingame	<b>YES</b>
	Redwood City	<b>YES</b>
	San Bruno	<b>YES</b>
	South San Francisco	<b>YES</b>
<b>SOLANO COUNTY</b>	Vacaville	<b>YES</b>

MORATORIUM CITIES - SECTION 23817.5 B. P. CODE

Effective May 9, 2011

**ALAMEDA COUNTY**

CITY	MORATORIUM	CITY	MORATORIUM
Alameda	NO	Livermore	<b>YES</b>
Albany	<b>YES</b>	Newark	NO
Berkeley	<b>YES</b>	Oakland	NO
Dublin	NO	Piedmont	NO
Emeryville	<b>YES</b>	Pleasanton	NO
Fremont	NO	San Leandro	<b>YES</b>
Hayward	NO	Union City	NO

**CONTRA COSTA COUNTY**

CITY	MORATORIUM	CITY	MORATORIUM
Antioch	NO	Oakley	NO
Brentwood	<b>YES</b>	Orinda	NO
Clayton	NO	Pinole	NO
Concord	NO	Pittsburg	NO
Danville	<b>YES</b>	Pleasant Hill	<b>YES</b>
El Cerrito	NO	Richmond	NO
Hercules	NO	San Pablo	<b>YES</b>
Lafayette	NO	San Ramon	NO
Martinez	<b>YES</b>	Walnut Creek	<b>YES</b>
Moraga	NO		

**LOS ANGELES COUNTY**

CITY	MORATORIUM	CITY	MORATORIUM
Agoura Hills	NO	La Verne	NO
Alhambra	NO	Lawndale	<b>YES</b>
Arcadia	NO	Lomita	NO
Artesia	<b>YES</b>	Long Beach	NO
Avalon	<b>YES</b>	Los Angeles	NO
Azusa	<b>YES</b>	Lynwood	NO
Baldwin Park	NO	Malibu	<b>YES</b>
Bell	<b>YES</b>	Manhattan Beach	<b>YES</b>
Bell Flower	NO	Maywood	<b>YES</b>
Bell Gardens	<b>YES</b>	Monrovia	NO
Beverly Hills	<b>YES</b>	Montebello	NO
Bradbury	NO	Monterey Park	NO
Burbank	NO	Norwalk	NO

MORATORIUM CITIES - SECTION 23817.5 B. P. CODE

Effective May 9, 2011

**LOS ANGELES COUNTY (Continued)**

CITY	MORATORIUM	CITY	MORATORIUM
Calabasas	<b>YES</b>	Palmdale	NO
Carson	NO	Palos Verdes Estate	NO
Cerritos	NO	Paramount	NO
Claremont	NO	Pasadena	NO
Commerce	<b>YES</b>	Pico Rivera	NO
Compton	NO	Pomona	NO
Covina	<b>YES</b>	Rancho Palos Verde	NO
Cudahy	<b>YES</b>	Redondo Beach	NO
Culver City	<b>YES</b>	Rolling Hills	NO
Diamond Bar	NO	Rolling Hills Estates	NO
Downey	NO	Rosemead	NO
Duarte	<b>YES</b>	San Dimas	<b>YES</b>
El Monte	<b>YES</b>	San Fernando	<b>YES</b>
El Segundo	<b>YES</b>	San Gabriel	NO
Gardena	<b>YES</b>	San Marino	NO
Glendale	NO	Santa Clarita	NO
Glendora	NO	Santa Fe Springs	<b>YES</b>
Hawaiian Garder	<b>YES</b>	Santa Monica	NO
Hawthorne	NO	Sierra Madre	NO
Hermosa Beach	<b>YES</b>	Signal Hill	<b>YES</b>
Hidden Hills	NO	South El Monte	<b>YES</b>
Huntington Park	<b>YES</b>	South Gate	<b>YES</b>
Industry	<b>YES</b>	South Pasadena	NO
Inglewood	<b>YES</b>	Temple City	NO
Irwindale	<b>YES</b>	Torrance	<b>YES</b>
La Canada Flintr	NO	Vernon	<b>YES</b>
La Habra Height	NO	Walnut	NO
Lakewood	NO	West Covina	NO
La Mirada	NO	West Hollywood	NO
Lancaster	NO	Westlake Village	NO
La Puente	<b>YES</b>	Whittier	<b>YES</b>

**ORANGE COUNTY**

CITY	MORATORIUM	CITY	MORATORIUM
Aliso Viejo	NO		
Anaheim	NO	La Palma	<b>YES</b>
Brea	NO	Los Alamitos	NO
Buena Park	NO	Mission Viejo	NO

MORATORIUM CITIES - SECTION 23817.5 B. P. CODE

Effective May 9, 2011

**ORANGE COUNTY (Continued)**

CITY	MORATORIUM	CITY	MORATORIUM
Costa Mesa	<b>YES</b>	Newport Beach	NO
Cypress	NO	Orange	NO
Dana Point	NO	Placentia	NO
Fountain Valley	NO	Rancho Santa Marg:	NO
Fullerton	<b>YES</b>	San Clemente	NO
Garden Grove	NO	San Juan Capistrano	NO
Huntington Beac	NO	Santa Ana	NO
Irvine	NO	Seal Beach	NO
Laguna Beach	NO	Stanton	<b>YES</b>
Laguna Hills	NO	Tustin	NO
Laguna Niguel	NO	Villa Park	NO
Laguna Woods	NO	Westminster	NO
La Habra	NO	Yorba Linda	NO
Lake Forest	NO		

**RIVERSIDE COUNTY**

CITY		CITY	
Banning	<b>YES</b>	La Quinta	<b>YES</b>
Beaumont	NO	Menifee	NO
Blythe	<b>YES</b>	Moreno Valley	NO
Calimesa	<b>YES</b>	Murrieta	NO
Canyon Lake	NO	Norco	<b>YES</b>
Cathedral City	<b>YES</b>	Palm Desert	<b>YES</b>
Coachella	<b>YES</b>	Palm Springs	<b>YES</b>
Corona	<b>YES</b>	Perris	NO
Desert Hot Sprin	<b>YES</b>	Rancho Mirage	NO
Hemet	<b>YES</b>	Redlands	NO
Indian Wells	NO	Riverside	NO
Indio	<b>YES</b>	San Jacinto	NO
Lake Elsinore	<b>YES</b>	Temecula	<b>YES</b>
		Wildomar	NO

**SACRAMENTO COUNTY**

CITY			
Citrus Heights	NO	Isleton	<b>YES</b>
Elk Grove	NO	Rancho Cordova	NO
Folsom	NO	Rio Vista	<b>YES</b>
Galt	NO	Sacramento	<b>YES</b>

MORATORIUM CITIES - SECTION 23817.5 B. P. CODE

Effective May 9, 2011

**SAN BERNARDINO COUNTY**

CITY	MORATORIUM	CITY	MORATORIUM
Adelanto	NO	Montclair	NO
Apple Valley	NO	Needles	<b>YES</b>
Barstow	<b>YES</b>	Ontario	<b>YES</b>
Big Bear Lake	<b>YES</b>	Pomona	NO
Chino	<b>YES</b>	Rancho Cucamonga	NO
Chino Hills	NO	Redlands	NO
Colton	<b>YES</b>	Rialto	NO
Fontana	NO	San Bernardino	<b>YES</b>
Grand Terrace	NO	Upland	NO
Hesperia	NO	Victorville	NO
Highland	NO	Yucaipa	NO
Loma Linda	NO	Yucca Valley	<b>YES</b>
		29 Palms	NO

**SAN DIEGO COUNTY**

CITY	MORATORIUM	CITY	MORATORIUM
Carlsbad	NO	Lemon Grove	NO
Chula Vista	NO	National City	NO
Coronado	NO	Oceanside	NO
Del Mar	NO	Poway	NO
El Cajon	<b>YES</b>	San Diego	NO
Encinitas	<b>YES</b>	San Marcos	NO
Escondido	<b>YES</b>	Santee	NO
Imperial Beach	NO	Solana Beach	NO
La Mesa	NO	Vista	NO

**SAN MATEO COUNTY**

CITY	MORATORIUM	CITY	MORATORIUM
Atherton	<b>YES</b>	Menlo Park	<b>YES</b>
Belmont	NO	Millbrae	NO
Brisbane	<b>YES</b>	Pacifica	NO

MORATORIUM CITIES - SECTION 23817.5 B. P. CODE

Effective May 9, 2011

**SAN MATEO COUNTY (Continued)**

Burlingame	<b>YES</b>	Portola Valley	NO
Colma	<b>YES</b>	Redwood City	<b>YES</b>
Daly City	NO	San Bruno	<b>YES</b>
East Palo Alto	NO	San Carlos	NO
Foster City	NO	San Mateo	NO
Half Moon Bay	<b>YES</b>	South San Franciscc	<b>YES</b>
Hillsborough	NO	Woodside	NO

**SANTA CLARA COUNTY**

CITY	MORATORIUM	CITY	MORATORIUM
Campbell	<b>YES</b>	Morgan Hill	<b>YES</b>
Cupertino	NO	Monte Sereno	NO
Gilroy	<b>YES</b>	Mountain View	NO
Hollister	NO	Palo Alto	NO
Los Altos	NO	San Jose	NO
Los Altos Hills	NO	Santa Clara	NO
Los Gatos	<b>YES</b>	Saratoga	NO
Milpitas	NO	Sunnyvale	NO

**SOLANO COUNTY**

CITY	MORATORIUM	CITY	MORATORIUM
Benicia	<b>YES</b>	Suisun City	NO
Dixon	<b>YES</b>	Vacaville	<b>YES</b>
Fairfield	NO	Vallejo	NO
Rio Vista	<b>YES</b>		

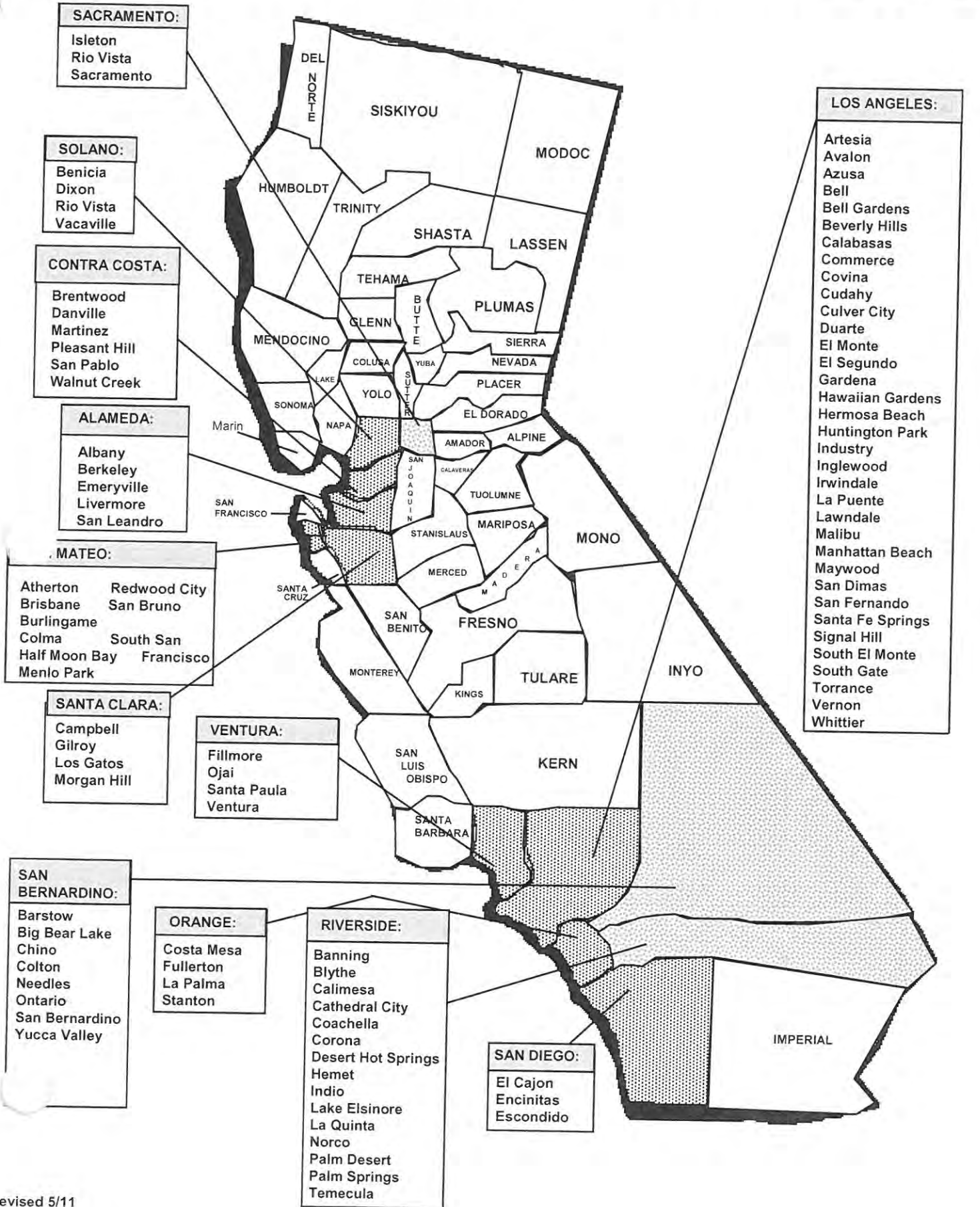
**VENTURA COUNTY**

CITY	MORATORIUM	CITY	MORATORIUM
Camarillo	NO	Port Hueneme	NO
Fillmore	<b>YES</b>	Santa Paula	<b>YES</b>
Moorpark	NO	Simi Valley	NO
Ojai	<b>YES</b>	Thousand Oaks	NO
Oxnard	NO	Ventura	<b>YES</b>
		Westlake Village	NO



COUNTIES WITH MORATORIUM = UNSHADED

COUNTIES WITH PARTIAL MORATORIUM = **SHADED**





# **Economic Costs of Excessive Alcohol Consumption in the United States, 2006**

*Final Report*

*Prepared for:*

**The Centers for Disease Control and Prevention and  
the National Foundation for the Centers for Disease  
Control and Prevention**

*Submitted by:*

**The Lewin Group, Inc.**

*Updated February 2013*



# **Economic Costs of Excessive Alcohol Consumption in the United States, 2006**

## ***Final Report***

*Prepared for:*

**The Centers for Disease Control and Prevention and  
the National Foundation for the Centers for Disease  
Control and Prevention**

*Prepared by:*

**Ellen Bouchery, The Lewin Group  
Carol Simon, The Lewin Group  
Hendrick Harwood, NASADAD**

*Updated*

***February 2013***

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## Executive Summary

### Overview

Excessive alcohol use is responsible for an average of 79,000 deaths and 2.3 million years of potential life lost in the United States each year, making it the third leading preventable cause of death in this country. In addition to premature mortality, excessive alcohol consumption affects us all through consequences such as additional health care costs, property damage from fire and motor vehicle crashes, increased crime and criminal justice system costs, and lost productivity. The most recent detailed study of the economic costs of excessive alcohol consumption was conducted by Harwood and produced an estimate for 1992. Since then, there have been significant advances in our scientific understanding of the health and social impacts of excessive drinking. Given the huge public health impact of excessive alcohol consumption and the improvements in scientific understanding since the prior estimates, with generous support from the Robert Wood Johnson Foundation, the CDC Alcohol Team engaged The Lewin Group to develop updated estimates of the economic cost of excessive alcohol consumption in the U.S. Estimates were developed for 2006, because this is the most recent year for which cost and outcome data were generally available.

### Methods

To develop estimates comparable to previous studies of the cost of excessive alcohol consumption and to studies of societal costs of other illnesses, this study follows *Guidelines for PHS Cost of Illness Studies*. Most previous studies of excessive alcohol consumption for the U.S. have followed these guidelines, as have most cost of illness studies performed over the past 30 years. The methods in this study are similar to those used in Harwood, however, the current study took advantage of improvements in scientific knowledge and available data.

Alcohol-attributable fractions were obtained from multiple sources, including Alcohol-Related Disease Impact software, meta-analyses, and population surveys. Economic costs were obtained from nationally representative datasets and then multiplied by the corresponding alcohol-attributable fraction. Separate estimates were made for binge drinking, underage drinking, drinking during pregnancy, and crime.

### Results

#### Overview

The total estimated 2006 economic cost of excessive drinking (Table ES-1) was \$223.5 billion, approximately \$746 for each man, woman, and child in the U.S. in 2006. Of the total cost, 72.2% came from lost productivity, 11.0% from health care costs, 9.4% from criminal justice system, and 7.5% from other effects. The cost from binge drinking was \$170.7 billion, underage drinking \$24.6 billion, drinking during pregnancy \$5.2 billion, and crime \$73.3 billion.

**Table ES-1: Total Economic Costs of Excessive Alcohol Consumption in the United States, 2006 (in millions)**

Cost Category	Total Cost
<b>Health Care Costs</b>	
Alcohol Abuse and Dependence	\$10,668.457
Primary Diagnoses Attributable to Alcohol	\$8,526.822
Fetal Alcohol Syndrome	\$2,538.004
Other Health System Costs	\$2,822.308
<b>Total, Health Care Costs</b>	<b>\$24,555.591</b>
<b>Productivity Losses</b>	
Impaired Productivity	\$83,695.036
Institutionalization/Hospitalization	\$2,053.308
Mortality	\$65,062.211
Incarcerations	\$6,328.915
Victims of Crime	\$2,092.886
Fetal Alcohol Syndrome	\$2,053.748
<b>Total, Productivity Losses</b>	<b>\$161,286.103</b>
<b>Other Effects on Society</b>	
Crime Victim Property Damage	\$439.766
Criminal Justice System	\$20,972.690
Motor Vehicle Crashes	\$13,718.406
Fire Losses	\$2,137.300
FAS Special Education	\$368.768
<b>Total, Other Effects</b>	<b>\$37,636.930</b>
<b>Total</b>	<b>\$223,478.624</b>

### *Health System Direct Costs*

Of the \$24.6 billion in health expenditures attributable to alcohol, about 43.4% was from specialty treatment for alcohol abuse and dependence and another 34.7% was for medical care for medical conditions stemming from excessive drinking. There were 360,785 alcohol-attributable hospitalizations (0.9% of all hospitalizations) in community hospitals; 2.785 million physician office visits (0.31% of all such visits); 0.329 million hospital outpatient department visits (0.32% of total); and 1.272 million emergency department (ED) visits (1.07% of ED visits) for a total of 4.386 million outpatient visits (0.39% of all outpatient visits) attributable to excessive drinking, as were 11,976 (0.80%) nursing home admissions.

### *Productivity Losses*

The two largest categories of productivity losses were impaired productivity (51.9%) and lost productivity resulting from the 83,180 alcohol-attributable deaths (46,825 from acute conditions and 36,355 from chronic ones) (40.3%) that occurred in 2006. For males with alcohol dependence (a subset of excessive drinkers), there was a statistically significant reduction in



both labor force participation (2.5%) and earnings given labor force participation (5.0%). There was also an estimated 19.269 million days spent institutionalized or hospitalized for care resulting from excessive drinking and, depending on age group, 0.4-0.9 days lost to absenteeism per year for female binge drinkers and 0.5-1.2 days for male binge drinkers.

### Other Costs

The two largest categories of other costs were criminal justice system costs (55.7%) and motor vehicle crashes (36.4%). Of the \$21.0 billion in criminal justice system costs, 76.8% came from crimes that would not be thought of as alcohol-attributable (e.g., assault) as opposed to obviously alcohol-attributable crimes like driving under the influence of alcohol.

### Who Bears the Burden

Costs related to excessive alcohol consumption may be borne by those who excessively drink and their families, government, private health insurers, employers, crime victims, and others. A full assessment of employer costs was beyond the scope of this study. Therefore, we grouped payers into 1) government, 2) excessive drinkers and their families, and 3) others.

The main payer for excessive alcohol consumption was government (42.1% of costs), followed by excessive drinkers and their families (41.5%) and then others in society (16.4%). Overall, \$94.2 billion of the total economic cost of excessive alcohol use was paid by government, including federal, state, and local government agencies.

The share of payments from each payer varied considerably by type of cost. The excessive drinker and their household bear a very small share (10.3%) of the health-related expenses. Government paid the largest share (60.9%) of the health expenses. In contrast, the excessive drinker and their family paid the largest share of productivity losses (54.6%). Government paid 35.1% of these losses. The remaining costs are primarily criminal justice system and motor vehicle crash related costs. Criminal justice system costs were paid almost exclusively by government (98.9%). Motor vehicle crash costs were paid mainly by others in society (85.8%) including private insurance and the general public.

### Conclusion

The estimated \$223.5 billion cost of excessive drinking in 2006 is on a par with the costs of other major health risk behaviors. For example, smoking cost the U.S. over \$172 billion annually – \$96.8 billion from lost productivity (2000-2004) and \$75.5 billion in health care costs in 1998. The total direct and indirect cost of physical inactivity in 2000 was also estimated to be in excess of \$150 billion.

According to the National Institute on Alcohol Abuse and Alcoholism, 7,538,026,000 total gallons of beer, wine, and spirits were consumed in the U.S. in 2006. Considering the \$94.2 billion paid by government for excessive alcohol consumption, this cost amounted to \$12.50 per gallon of alcoholic beverages consumed.

Most costs for excessive alcohol consumption were attributable to binge drinking (76.4%) and resulted from lost productivity. Our estimates reflect not only the substantial health impact of excessive drinking, but the significant social impact of this behavior as reflected in the cost of

alcohol-attributable crime and productivity losses. **Effective interventions to reduce excessive alcohol consumption – including increasing alcohol excise taxes, limiting alcohol outlet density, and maintaining and enforcing the age 21 minimum legal drinking age –** are available but are underutilized and some of these interventions (e.g., increasing alcohol excise taxes) could even be used to help fund prevention and treatment activities.



## I. Introduction

Excessive alcohol consumption is responsible for an average of 79,000 deaths and 2.3 million years of potential life lost in the U.S. each year (1), making it the third leading preventable cause of death in this country (2). Excessive alcohol consumption is associated with multiple adverse health and social consequences, including liver cirrhosis, certain cancers, unintentional injuries, unintended pregnancy, and fetal alcohol spectrum. In addition, the link between excessive alcohol consumption and crime especially violent crime including homicide and child maltreatment is well established.

Excessive alcohol consumption affects us all through consequences such as premature death, additional health care costs, property damage from fire and motor vehicle crashes, increased crime and criminal justice system costs, and lost productivity. The most recent detailed study of the economic costs of excessive alcohol consumption was conducted by Harwood (1998) and produced an estimate of \$148 billion for 1992 (3). That estimate was subsequently updated for population growth and inflation to 1998 and amounted to \$185 billion (4). However, since then, there have been significant advances in our scientific understanding of the health and social impacts of excessive drinking. One such advance, made by Centers for Disease Control and Prevention (CDC) scientists working with a panel of health experts, was the development of the Alcohol-Related Disease Impact (ARDI) system (<http://www.cdc.gov/alcohol/ardi.htm>) which defined a set of alcohol-attributable health conditions and associated disease-specific attribution factors for excessive alcohol consumption.

Given the huge public health impact of excessive alcohol consumption, new scientific findings on the effectiveness of prevention strategies ([www.thecommunityguide.org/alcohol](http://www.thecommunityguide.org/alcohol)), and health care reform, it appeared timely to update the cost estimates to better understand the importance of the problem. Accordingly, with generous support from the Robert Wood Johnson Foundation, the CDC Alcohol Team engaged The Lewin Group to conduct such a study. The purpose of the study was develop a more current estimate of the economic cost of excessive alcohol consumption in the U.S. and also to estimate the cost of binge drinking, drinking by underage youth, and drinking during pregnancy. It is our hope that these estimates will be used to more fully assess the public health impact of excessive drinking and inform discussions of public policy.

## II. General Methodological Approach

An initial consideration in developing updated estimates was selecting a year for the update. Estimates were developed for 2006, because this is the most recent year for which observed cost and outcome data were generally available.

Our general approach to producing estimates of economic costs focused on three issues that were important across all components of our estimates: 1) comparability to other research (including previous cost of excessive alcohol consumption research and cost studies for other illnesses); 2) focus on excessive drinking, including binge and underage drinking as well as alcohol dependence and abuse; and 3) the assessment of the proportion of costs that were due to excessive drinking, i.e., the alcohol-attributable fraction (AAF). We discuss each of these issues in turn, below.

## A. Comparability to Other Research

To develop estimates comparable to previous studies of the cost of excessive alcohol consumption and to studies of societal costs of other illnesses, this study follows *Guidelines for PHS Cost of Illness Studies* (5). Most previous studies of excessive alcohol consumption (3,4,6) for the U.S. have followed these guidelines, as have most cost of illness studies performed over the past 30 years.

Additionally, to make the estimates more comparable across illnesses, this study developed estimates when possible as a share of national control totals. For example, national health spending is tracked annually by the Centers for Medicare and Medicaid Services (CMS) in the National Health Expenditure Accounts (NHEA). To estimate medical costs of excessive alcohol consumption, we estimated the proportion of a national total that could plausibly be attributed to excessive alcohol consumption. Similarly, for crime-related costs, the Bureau of Justice Statistics compiles national spending estimates for the criminal justice system in the "Justice Expenditure and Employment Extract Series." Therefore, we estimated the share of those expenditures that were attributable to excessive alcohol consumption.

## B. Definition of Excessive Consumption

This study is specifically directed at assessing the consequences and costs of excessive alcohol consumption. There are two primary and overlapping patterns of excessive alcohol consumption: "binge drinking" and "heavy drinking." Binge drinking is defined as a pattern of alcohol consumption that results in a blood alcohol concentration of .08 gm/dL or greater which is typically achieved by a female consuming four or more drinks on a single occasion or a male consuming five or more drinks. Heavy drinking is the consumption of an average of more than one drink per day for females and more than two drinks per day for males. In addition to binge drinking and heavy drinking, any consumption of alcohol by pregnant women or by individuals under age 21 years is deemed excessive consumption.

**This problem definition encompasses alcohol-attributable health and social outcomes resulting from alcohol dependence and alcohol abuse, but also includes the broader range of health and social problems that are associated with non-dependent excessive drinking, including a wide range of acute and chronic health problems; productivity losses due to absenteeism; and crimes committed while intoxicated.** This broader focus on excessive drinking is consistent with the public health focus on excessive drinking as a risk factor for various health and social harms, and is consistent with the World Health Organization's (WHO's) emphasis on reducing the harmful use of alcohol, as described in the draft Global Alcohol Strategy.

While we assessed a broad range of economic costs associated with excessive drinking, our methods remained consistent with the *Guidelines for PHS Cost of Illness Studies* (5), as previously noted. Furthermore, the costs that we assessed in this report, and the methods we used to do so, were consistent with the methods used in the previous cost studies done by Harwood in 1992 and 1998, even though these reports were ostensibly focused on costs due to alcohol abuse, perhaps implying that they were restricted to costs that were largely attributable to clinical alcohol use disorders. We did, however, make use of the best available science for assessing the economic costs of alcohol-attributable health and social outcomes, and as a result, some of the



specific conditions or approaches that we used to obtain alcohol-attributable fractions (AAFs) (e.g., AAFs for crime), differed somewhat from those that were used in previous cost studies.

### C. Alcohol-Attributable Fractions (AAFs)

Several components of this study use AAFs - that is the proportion of a condition or outcome that is due to excessive alcohol consumption. For some outcomes, AAFs already existed; for others we developed AAFs based on literature review. Following is a summary of how we chose diagnosis- and criminal offense-specific AAFs. The choices of other AAFs are discussed elsewhere in the relevant section.

#### 1. Diagnosis-Specific AAFs

The CDC's ARDI system produces estimates of alcohol-attributable deaths and years of potential life lost due to excessive alcohol consumption for conditions identified by a panel of public health experts as fully or partially attributable to alcohol. This panel also guided the selection or calculation of attribution factors for each cause of death.

For this study, the conditions and attribution factors used for fatalities were fully adopted from ARDI. For each fatal outcome in ARDI, a nonfatal equivalent was defined, e.g., fatal = homicide; nonfatal = assault (see Appendix Table A). For non-fatal chronic health conditions, the study used the AAFs for the equivalent fatal condition from ARDI. For nonfatal injuries, the AAFs for fatal injuries in ARDI would not be appropriate as they would overestimate the contribution of excessive drinking to the nonfatal outcome. Based on a CDC literature review in 2009, this study identified AAFs for motor vehicle injuries, unintentional injuries other than motor vehicle injuries, and injuries from violence. These AAF were used for the given category of injuries irrespective of the treatment setting as noted in Table II-1.

Table II-1: AAFs for Non-Fatal Injury

Type of Non-Fatal Injury	AAF	Source
Motor Vehicle Traffic Injuries	.061	Blincoe L, Seay A, Zaloshnja E, Miller T, Romano E, Luchter S, Spicer R. The Economic Impact of Motor Vehicle Crashes, 2000 (NHTSA Technical Report). May 2002. Washington, DC: U.S. Department of Transportation, National Highway Traffic Safety Administration. Table 10.
Unintentional Injuries	.058	Cherpitel (2005) "Attributable Risk of Injury Associated with Alcohol Use: Cross National Data from the Emergency Room Collaborative Alcohol Analysis Project." American Journal of Public Health. 95, No 2: 266-272. Table 3.
Injuries from Violence	.267	Cherpitel (2005) "Attributable Risk of Injury Associated with Alcohol Use: Cross National Data from the Emergency Room Collaborative Alcohol Analysis Project." American Journal of Public Health. 95, No 2: 266-272. Table 3.

#### 2. Criminal Offense-Specific AAFs

Table II-2 displays the categories of offenses this study attributes to excessive alcohol consumption and the cost components that were assessed by offense. These categories were developed to align with our primary data sources: Sourcebook of Criminal Justice Statistics Online, Federal Bureau of Investigations' "Arrests by Offense and Age, 2006," the Bureau of Justice Statistics' National Crime

Victimization Survey, and the Department of Justice's Surveys of Inmates in State and Federal Correctional Facilities and Inmates in Local Jails.

**Table II-2: Crime Classifications by Cost Component**

Offense	Cost Component					
	Victim Medical Cost	Victim Productivity Loss	Victim Property Loss <sup>1</sup>	Incarceration Cost	Criminal Justice System Cost	Arrests
<b>Violent Crime</b>						
Homicide	X	X		X	X	X
Forcible Rape	X	X	X	X	X	X
Other Sex Offenses	X	X	X	X	X	X
Aggravated Assault	X	X	X	X	X	X
Other Assaults	X	X	X	X	X	X
<b>Property Crime</b>						
Robbery	X	X	X	X	X	X
Burglary		X	X	X	X	X
Larceny-theft		X	X	X	X	X
Motor Vehicle Theft		X	X	X	X	X
Vandalism				X	X	X
<b>Alcohol-related Crime</b>						
Driving Under the Influence				X	X	X
Drunkenness				X	X	X
Liquor Laws				X	X	X
<b>Other</b>						
Offenses Against Family and Children				X	X	X

<sup>1</sup> Property loss and victim productivity loss associated with vandalism were not available from sources (e.g., crime victim survey).

In prior studies of the costs of excessive alcohol consumption (3, 4), 100% of alcohol-attributable crimes (e.g., driving under the influence, public drunkenness) were attributed to alcohol. For those crimes that were less than 100% alcohol-attributable, surveys of inmate populations (e.g., Survey of Inmates in State and Federal Correctional Facilities 1997; Census of Jail Inmates 1996) were used to identify the percentage of crimes where the perpetrator was self-reported to be drinking at the time of the offense. Harwood then attributed to alcohol one-half of violent and one-tenth of property crimes where the perpetrator was drinking.

In this study, updated versions of these surveys were used to estimate the alcohol-attributable share of crimes. In contrast to earlier surveys that only asked about any level of consumption at the time of the offense, the updated surveys gathered data about both level of consumption and type of alcohol beverage consumed. This information allowed us to estimate the share of inmates

intoxicated at the time of the offense (Table II-3); inmates were categorized by controlling offense, i.e., the crime for which they were punished.

**Table II-3: Site- and Crime-specific Percentage of Incarcerated Persons Under the Influence of Alcohol and Intoxicated at the Time of Their Offense**

Type of Offense	Federal & State Prisons		Local Jails	
	Percent Drinking <sup>1</sup>	Percent Intoxicated <sup>1</sup>	Percent Drinking <sup>1</sup>	Percent Intoxicated <sup>1</sup>
<b>Violent Crime</b>				
Homicide	40.8%	33.1%	15.2%	13.8%
Forcible Rape	37.0%	28.3%	34.4%	31.1%
Other Sex Offenses	27.4%	21.5%	21.0%	18.8%
Aggravated Assault	38.7%	29.4%	27.9%	22.6%
Other Assault	25.0%	18.8%	17.3%	13.8%
<b>Property Crime</b>				
Robbery	32.1%	26.5%	20.8%	18.7%
Burglary	33.0%	27.2%	25.5%	21.9%
Larceny - theft	25.1%	19.9%	20.7%	16.1%
Motor vehicle theft	27.5%	22.2%	26.8%	23.1%
Vandalism	29.1%	26.8%	32.6%	19.2%
<b>Alcohol-Related Crime<sup>2</sup></b>				
Driving Under The Influence	90.7%	68.5%	82.0%	63.3%
Public Drunkenness <sup>3</sup>	49.9%	35.3%	45.4%	34.8%
Liquor laws	100.0%	100.0%	53.0%	53.0%
<b>Other</b>				
Offenses Against Family and Children	16.2%	12.5%	14.0%	9.5%
All Other	21.6%	15.9%	17.7%	12.6%
<b>Total</b>	<b>30.3%</b>	<b>23.6%</b>	<b>24.6%</b>	<b>19.0%</b>

Source: Analysis of the Jail Inmate Survey, 2002 and the Survey of State and Federal Prison Inmates, 2004.

<sup>1</sup> Percent drinking indicates the percentage of incarcerated persons who had been drinking any alcohol at the time of the offense. Intoxicated was defined as having four or more drinks for a female or five or more drinks for a male at the time of or immediately prior to the offense.

<sup>2</sup> Alcohol-related crimes were 100% attributed to alcohol regardless of inmate reports of intoxication.

<sup>3</sup> This category includes drunkenness, disorderly conduct, vagrancy, begging, loitering, and unlawful assembly. It was not possible to identify drunkenness separately.

The AAF for homicide was drawn from ARDI (note: it is a perpetrator-based AAF). Alcohol-related crimes including driving under the influence of alcohol, public drunkenness, and liquor law violations were fully attributed to alcohol. For other offenses, attribution, i.e., the AAF was estimated as the percentage of offenders intoxicated at the time of their offense (Table II-4). Use of intoxication at the time of the offense is consistent with the literature and assures that alcohol played a significant role in the event. AAFs for state and federal inmates were used to attribute costs for these incarcerations. AAFs for jail inmates were used to attribute costs for jail incarcerations, as well as for arrests and victim costs by offense. Crimes that were less than 100% attributable to alcohol were only counted if the offender was 15 years of age or older.

Table II-4: Criminal Offense-Specific AAFs

Type of Crime	Federal & State Incarceration Costs	Jail Incarceration, Arrests, & Victim Costs
<b>Violent Crime</b>		
Homicide	47.0%	47.0%
Forcible Rape	28.3%	31.1%
Other Sex Offenses	21.5%	18.8%
Aggravated Assault	29.4%	22.6%
Other Assault	18.8%	13.8%
<b>Property Crime</b>		
Robbery	26.5%	18.7%
Burglary	27.2%	21.9%
Larceny - theft	19.9%	16.1%
Motor vehicle theft	22.2%	23.1%
Vandalism	26.8%	19.2%
<b>Alcohol-Related Crime</b>		
Driving Under The Influence	100.0%	100.0%
Public Drunkenness	100.0%	100.0%
Liquor laws	100.0%	100.0%
<b>Other</b>		
Offenses Against Family and Children	12.5%	9.5%

### III. Health System Direct Costs

Health system direct costs are the use of goods or services for treatment of a health problem. We estimated health system direct costs for the 54 chronic and acute conditions included in ARDI, including alcohol dependence and abuse. We also assessed other health system costs and the cost of medical services for crime victims. Inpatient and outpatient costs were only assessed for persons with a primary diagnosis of an alcohol-attributable condition, as defined by ARDI.

In the next section, we provide a summary of the estimated health system direct costs. Then, we provide a discussion of the methods related to each component of the estimates.

#### A. Summary

Table III-1 itemizes the \$24.6 billion in health expenditures attributable to alcohol in 2006. About 43.4% of the costs (\$10.7 billion) were from treatment of alcohol abuse and dependence. Another 34.7% (\$8.5 billion) was for medical care for medical conditions stemming from excessive drinking excluding fetal alcohol syndrome.



**Table III-1**  
**Total Health Care Expenditure, 2006 (in millions of \$)**

<b>Cost Category</b>	<b>Total Cost</b>
Alcohol Abuse and Dependence	\$10,668.457
Primary Diagnoses Attributable to Alcohol	\$8,526.822
Inpatient Hospital	\$5,115.568
Physician Office and Hospital Ambulatory Care	\$1,195.946
Nursing Home Care	\$1,002.888
Retail Pharmacy and Other Health Professional	\$1,212.420
Fetal Alcohol Syndrome	\$2,538.004
Other Health System Costs	\$2,822.308
Prevention and Research	\$1,207.120
Training	\$29.527
Health Insurance Administration	\$1,585.660
<b>Total, Health Care Costs</b>	<b>\$24,555.591</b>

## B. Treatment Costs for Alcohol Abuse and Dependence

Estimates of treatment costs for alcohol abuse and dependence were drawn directly from SAMHSA's National Mental Health (MH) and Substance Abuse (SA) Treatment Spending Estimates Project (SEP). Designed to be consistent with the NHEA, the most recent SEP estimates available were through 2003 (7). A companion study by Levit (8) projected expenditures for SA treatment from 2004-2014, but did not break-out alcohol spending (although it was calculated during development of the published estimates). These unpublished projections were obtained from SAMHSA for 2006 and used here.

The diagnoses included in these estimates were: 1) Alcohol Abuse (305.0); 2) Alcohol Dependence (303.0 and 303.9); and 3) Alcohol Psychosis (291.x). Estimates included treatment expenditures for these diagnoses at specialty SA treatment facilities and non-specialty providers in general hospitals, ambulatory care settings, nursing homes, and pharmacies. Federal spending by the VA and Indian Health Service are included in these estimates. Spending for specialty treatment for alcohol abuse was calculated based on the National Survey of Substance Abuse Treatment Services (N-SSATS). For non-specialty providers numerous data sets, such as the National Ambulatory Medical Care Survey (NAMCS) and the Healthcare Cost and Utilization Project (HCUP), and the Nationwide Inpatient Sample were used to determine the proportion of total service use and expenditures that involved a primary alcohol disorder.

Total spending for treatment of primary diagnoses of alcohol disorders was \$10,668 million in 2006 with an additional \$682 million for related health insurance administration costs (Table III-2). Of the \$23,572 millions spent for SA treatment, alcohol-related costs represented 48.1% of the total.

**Table III-2: Estimated Spending on Direct Health Care for Alcohol Abuse and Dependence, 2006**  
(in millions of \$)

	Total	Private				Public				State & Local
		Total	Out-of-Pocket	Insurance	Other	Total	Medicare	Medicaid	Other Federal	
All Services plus Prescription Drugs plus Insurance Administration	\$11,350.635	\$2,863.383	\$824.777	\$1,367.623	\$670.983	\$8,487.252	\$614.508	\$1,726.922	\$1,154.898	\$4,990.923
All Services plus Prescription Drugs	\$10,668.457	\$2,668.972	\$824.777	\$1,188.213	\$655.983	\$7,999.485	\$596.835	\$1,612.204	\$1,117.805	\$4,672.641
All Services	\$10,543.819	\$2,589.916	\$790.188	\$1,143.745	\$655.983	\$7,953.903	\$584.371	\$1,580.129	\$1,116.763	\$4,672.641
Hospital All	\$2,929.255	\$679.289	\$170.038	\$375.094	\$134.157	\$2,249.966	\$322.862	\$580.775	\$462.995	\$883.335
General Hospital	\$2,723.052	\$658.284	\$162.349	\$367.570	\$128.365	\$2,064.767	\$305.729	\$538.617	\$460.750	\$759.671
Non-specialty Units	\$1,178.382	\$409.988	\$89.631	\$249.950	\$70.407	\$768.395	\$231.120	\$164.098	\$76.682	\$296.494
Specialty Units	\$1,544.670	\$248.297	\$72.719	\$117.621	\$57.957	\$1,296.373	\$74.609	\$374.519	\$384.068	\$463.177
Specialty Hospitals	\$206.203	\$21.005	\$7.689	\$7.523	\$5.792	\$185.199	\$17.133	\$42.158	\$2.244	\$123.664
Physicians	\$1,055.111	\$483.059	\$148.934	\$203.026	\$131.099	\$572.053	\$71.370	\$113.484	\$42.433	\$344.765
Other Professionals	\$1,872.766	\$858.736	\$264.956	\$360.955	\$232.825	\$1,014.030	\$127.983	\$201.915	\$72.920	\$611.212
Nursing Homes	\$290.360	\$119.443	\$60.219	\$59.224	\$0.000	\$170.916	\$32.214	\$138.311	\$0.019	\$0.372
Home Health	\$3.671	\$2.297	\$1.087	\$0.000	\$1.211	\$1.373	\$0.083	\$0.000	\$0.000	\$1.291
Multi-service Mental Health Organizations	\$699.459	\$90.458	\$12.883	\$33.407	\$44.168	\$609.002	\$14.085	\$219.434	\$25.763	\$349.720
Specialty Substance Abuse Clinics	\$3,693.196	\$356.634	\$132.071	\$112.039	\$112.524	\$3,336.562	\$15.774	\$326.210	\$512.632	\$2,481.947
Prescription Drugs	\$124.639	\$79.056	\$34.589	\$44.468	\$0.000	\$45.582	\$12.464	\$32.076	\$1.043	\$0.000
Insurance Administration	\$682.177	\$194.410	\$0.000	\$179.410	\$15.000	\$487.767	\$17.674	\$114.718	\$37.093	\$318.282

## C. Treatment Costs for Primary Diagnoses Attributable to Alcohol

Estimated costs for conditions fully or partially caused by alcohol were derived by multiplying three components: 1) the number of alcohol-related conditions or causes of injury based on ARDI in 2006, 2) the relevant AAF (indicating the proportion of each condition or injury attributable to alcohol), and 3) the total (or mean) estimated costs for each condition or cause of injury in 2006.

Both fatal and non-fatal conditions were included in this analysis (Appendix A). The AAFs used for each outcome are described in Section II.C. For chronic conditions where attribution was indirectly estimated, CDC provided alcohol consumption estimates specific to the 2006 population.

Costs related to treatment of alcohol abuse and dependence (ICD-9 = 303.xx Alcohol Dependence Syndrome or 305.0x - Alcohol Abuse or 291.xx -- Alcohol Psychoses, where x=any number) were not included here as they are reported in Section III.B. Similarly, costs for fetal alcohol syndrome were not included in this section as they are reported in Section III.E.

Health care costs were estimated for the following categories: inpatient hospitalizations, ambulatory care visits (hospital outpatient department, emergency department, and physician offices), nursing home admissions, retail pharmacy and other health professional costs.

### 1. Inpatient Hospital Care for Alcohol-Attributable Conditions

Cost estimates for non-federal and federal hospitals were developed separately, because federal hospitals are not included in the Healthcare Cost and Utilization Project (HCUP) National Inpatient Sample (NIS), the primary data source for the estimating non-federal hospital costs. Methods for non-federal hospitals are described in the next section. Then, methods for estimating federal hospital costs are described.

#### a. Non-Federal Hospitals

##### (1) Data Sources

Hospital discharges and the associated charges for each alcohol-attributable condition were identified in the HCUP, NIS based on primary diagnosis. NIS included data from about 8 million discharges from approximately 1,000 hospitals in 38 states, representing 90% of hospital discharges nationally. HCUP includes weights for producing national estimates; those estimates may be biased to the extent that patterns of care and excessive drinking in the 12 unrepresented states are different from those in the 38 represented states. Discharges from smaller states are underrepresented in the HCUP. Nonetheless, the HCUP is frequently used in federal and academic analyses to develop national estimates for spending and costs of hospital inpatient care, and is particularly valuable for analysis of less frequent conditions.

Instead of using national estimates of average per diem inpatient costs as Harwood did, we used HCUP data on charges, as these data, while not directly associated with payments, provide information on which discharges tend to be more costly. We used expenditure-to-charge ratios by payer developed from the MEPS for inpatient care for all diagnoses to adjust the charge estimates to expenditures, i.e., payments (Table III-3).

**Table III-3: Inpatient Hospital Expenditure-to-Charge Ratios, MEPS 2006\***

Primary Source of Payment	Expenditure-to-Charge Ratio
Government (Medicare, Medicaid, Other)	31.9%
Private Insurance	49.4%
Other Private (Self-pay, Other)	41.3%
Overall	37.5%

\* Analysis of MEPS, 2006.

## (2) Methods and Results

Age was defined by age at admission. With the exception of prematurity, low birth weight, intrauterine growth retardation, and child maltreatment, discharges for acute and chronic conditions were only included for individuals 15 years of age or older and 20 years or older, respectively. The steps of the calculation were (see Appendix Tables B-1A [chronic conditions] and B-1B [acute conditions]):

**Step 1: Identify Discharges with Alcohol-Related Primary (i.e., first-listed) Diagnoses** – Identify the number of discharges with alcohol-related primary diagnoses and the charges associated with these discharges in HCUP using the ICD-9 codes based on the conditions included in ARDI that are listed in Appendix A. (The national estimate of total discharges for each primary diagnosis and mean charge per stay are presented in columns 3 and 4 of Appendix Table B-1A and B-1B.)

**Step 2: Adjust Charges** – Calculate mean expenditures per discharge (Appendix Table B-1A and B-1B, column 5) by applying expenditures-to-charge ratios by primary source of payment from the MEPS to the charges listed in the HCUP. (This adjustment factor varied across diagnoses depending on the distribution of primary source of payment within each diagnosis.)

**Step 3: Estimate Total Expenditures** – Components in each row were multiplied to yield the total expenditures attributable to alcohol for each diagnosis (last column). The number of discharges (column 3) was multiplied times average expenditures per discharge (column 5) and the AAF for the diagnosis (column 6). In the case of a hospitalization that led to death, the AAF for fatality was used instead of the AAF for a non-fatal outcome. For chronic illnesses the fatal and non-fatal AAFs were the same.

For the small number of observations where age, gender, or discharge status were missing, we imputed these values based on their known distribution within a diagnostic category.

Physician services provided during an inpatient stay were not included in the HCUP estimates. This amount was estimated by multiplying the number of inpatient days in each diagnostic category times mean expenditures on physician services per inpatient day (\$270 based on the MEPS 2006) times the attribution factor for the diagnosis. These estimates are presented in Appendix B, Tables B-2A [chronic conditions] and B-2B [acute conditions].

Based on the HCUP, in 2006 there were 39,450,216 discharges of which 360,785 or 0.9% were attributed to alcohol (excluding those with alcohol disorders as the primary diagnosis).



## b. Federal Hospitals

Federal hospitals, e.g., VA and DOD hospitals are not included in HCUP. The estimated total federal hospital expenditures for 2006 were obtained from CMS' Office of the Actuary, National Health Statistics Group. Federal hospital expenditures (\$33,955 million) were used in conjunction with the NHEA published estimates of total hospital expenditures in 2006 (\$649,327 million) to estimate the proportion of national hospital spending related to federal hospitals (5.2%). We conservatively assumed the relative proportion of costs incurred as a result of treatment attributable to excessive alcohol consumption in federal hospitals was the same as in non-federal hospitals. Thus, community hospital expenditures attributable to alcohol represented 94.77% of all hospitals expenditures attributable to alcohol. Dividing these community hospital expenditures by .9477 yielded total hospital expenditures attributable to alcohol (\$4,848/.9477) of \$5,116 million. The difference between community hospital expenditures and total hospital expenditures represents federal hospital expenditures attributable to alcohol (Table III-4).

**Table III-4: Summary of Inpatient Hospital Treatment Costs for Alcohol-Attributable Chronic and Acute Conditions, 2006 (in millions \$)**

Type of Service	Chronic	Acute	Total Cost
Non-Federal Hospitals	\$3,211.971	\$1,636.093	\$4,848.064
Inpatient Facility Services	\$2,837.730	\$1,487.205	\$4,324.935
Inpatient Physician Services	\$374.241	\$148.887	\$523.128
Federal Hospitals <sup>1</sup>	\$177.229	\$90.276	\$267.504
<b>All Hospitals</b>	<b>\$3,389.199</b>	<b>\$1,726.368</b>	<b>\$5,115.568</b>

<sup>1</sup> Based on NHEA estimate of federal hospital spending as a share of overall hospital spending.

## 2. Physician Office and Hospital Ambulatory Care

### a. Data Sources

The 2006 National Ambulatory Medical Care Survey (NAMCS) and 2006 National Hospital Ambulatory Medical Care Survey (NHAMCS) were used for counts of physician office, outpatient hospital, and emergency department visits. Because the office and outpatient hospital visits parts of the 2006 files lack E-codes, for acute conditions where attribution was based on cause of injury, the 2004 NAMCS and NHAMCS files were used to estimate the distribution of injury in the 2006 files. The NAMCS and NHAMCS do not include information on revenue or charges for services provided. Data from the MEPS 2006 were used to estimate mean expenditures per visit by type of visit.

### b. Methods

Alcohol-attributable costs for physician office and hospital ambulatory care visits were estimated in the following steps.

**Step 1: Identify Visits with Alcohol-Related Primary Diagnoses** – Counts of physician office, outpatient hospital, and emergency department visits were obtained by first-listed (primary) diagnosis code from the NAMCS and NHAMCS 2006 for the diagnosis codes listed in Appendix A.

**Step 2: Estimate Expenditures per Visit** – Data from the MEPS 2006 were used to estimate mean expenditures per visit by type of visit (Table III-5). To develop the estimates, we truncated the report distribution of expenditures at the 95<sup>th</sup> percentile to reduce the impact of outliers. We believe this method is consistent with the conservative approach used throughout this study. Without truncation, the estimates would increase to: emergency department visit - admitted = \$152, emergency department visit - not admitted = \$738, hospital outpatient department visit = \$690, and an office visit = \$161.

**Table III-5: Mean Physician Visit Expenditures by Type of Visit  
MEPS, 2006**

Type of Visit	Mean Expenditure per Visit
Physician Office Visit	\$112
Hospital Outpatient Department Visit	\$539
Hospital Emergency Room Visit - Admitted	\$143
Hospital Emergency Room Visit - Not Admitted	\$607

**Step 3: Estimate Total Expenditures** -- Counts of visits for each diagnostic category were multiplied by mean expenditures per visit and by the AAF for the diagnostic group and patient characteristics to estimate total expenditures (For simplicity, a single estimate of mean expenditures per visit was estimated across all payers).

With the exception of prematurity, low birth weight, intrauterine growth retardation, child maltreatment, and motor vehicle non-traffic crashes, acute and chronic conditions were only calculated for individuals 15 years of age or older and 20 or older, respectively.

Appendix B, Tables B-3A [chronic conditions] and B-3B [acute conditions] display these calculations by diagnosis or cause of injury and type of visit.

### c. Results

Overall, \$1,196 million in physician office and hospital ambulatory care treatment costs were attributed to the medical consequences of excessive alcohol consumption (Table III-6).

**Table III-6: Ambulatory Treatment Costs Attributable to Alcohol, 2006**

Type of Visit	Chronic Conditions	Acute Conditions	Total Cost
Physician In-Office	\$199.312	\$112.613	\$311.925
Hospital Outpatient	\$99.426	\$77.730	\$177.156
Hospital Emergency - Admitted	\$9.767	\$10.336	\$20.103
Hospital Emergency Room Visit - Not Admitted	\$47.439	\$639.323	\$686.762
<b>Total</b>	<b>\$355.944</b>	<b>\$840.002</b>	<b>\$1,195.946</b>



These costs resulted from 2,785,040 physician office visits, 328,678 outpatient hospital visits, and 1,271,987 emergency room visits. Alcohol-attributable visits represented 0.39% of all ambulatory care visits in 2006 (Table III-7).

**Table III-7: Physician Office and Hospital Ambulatory Treatment Visits for Alcohol-Attributable (AA) Conditions, 2006**

Type of Visit	AA Visits	All Visits	AA Share
Physician In-Office	2,785,040	901,954,225	0.31%
Hospital Outpatient	328,676	102,208,171	0.32%
Hospital Emergency	1,271,987	119,191,528	1.07%
<b>Total</b>	<b>4,385,703</b>	<b>1,123,353,924</b>	<b>0.39%</b>

### 3. Nursing Home Care Costs

We only estimated nursing home care costs attributable to non-dependent excessive drinking because nursing home costs related to alcohol abuse or dependence were already accounted for in Section III.A. The number of current nursing home residents with an alcohol-attributable diagnosis at admission was estimated from the NNHS 2004 (the 1992 report only included costs for nursing home residents with a primary diagnosis of alcohol abuse; thus this study expands this category of costs). The costs associated with these residents were estimated as follows:

**Step 1: Identify Residents with Alcohol-Attributable Diagnoses** – The approximately 1.5 million nursing home residents in 2004 were divided into four groups based on primary diagnosis at admission: 1) those with alcohol abuse or dependence (these costs were excluded, as noted above, to avoid double-counting), 2) those admitted with alcohol-attributable chronic conditions (see Appendix A), 3) those admitted with injury diagnoses, and 4) those with diagnoses unrelated to alcohol. Because E-coding was unavailable in the NNHS, to count injuries for group 2 we summed a) all residents with admissions for injuries (primary diagnosis in ICD-9 range 800 – 999) and b) all residents with primary admission code of V54 (other orthopedic aftercare) and secondary or tertiary diagnosis(es) in ICD range 800 – 999 to identify those receiving such aftercare in a nursing home following an acute injury.

**Step 2: Apply AAFs** – We first excluded Group 1 and Group 4. We then applied AAFs to the count of residents in Group 2 by alcohol-attributable chronic condition admitting diagnosis by gender (using AAFs as appropriate from Appendix A) to determine the total number of Group 2 residents whose admission was attributable to alcohol. For Group 3, we multiplied the total number of residents admitted with either an a) injury diagnosis or b) orthopedic aftercare following an acute injury by 0.058 – the AAF used for non-fatal, unintentional injuries (Table II-1).

**Step 3: Estimate Overall Percentage of Residents Whose Admission Was Attributable to Alcohol** – The total number of residents who were admitted for an alcohol-attributable condition (excluding persons admitted with alcohol abuse or dependence) was then divided by the total number of residents to determine the overall proportion of residents who were admitted with an alcohol-attributable condition.

**Step 4: Estimate Total Expenditures by Source of Payment** -- The percentage of residents who were admitted with an alcohol-attributable condition was then multiplied times the

total NHEA Nursing Home Care Expenditures for 2006 by source of payment. Because we were unable to identify a primary source of payment for each resident, and the survey provided no information on the contribution level of reported payers, the share of NHEA expenditures attributed to alcohol was held constant across payers.

Table III-8 displays estimated nursing home costs attributable to alcohol. Of the 1,492,207 nursing home residents in 2004, the admissions of 11,976 or 0.80% were attributed to alcohol. Acute conditions represented 74.0% of residents with alcohol-attributable primary diagnoses; the remainder had chronic conditions. These estimates represent about \$84,000 per year for each of the nursing home residents with a stay attributable to alcohol.

**Table III-8: Nursing Home Costs Attributable to Alcohol, 2006**  
(in millions \$)

Category of Costs	Private Health Insurance	Medicaid	Medicare	Other	Out-of-Pocket	Total
Total National Expenditures <sup>1</sup>	\$9,264	\$54,087	\$21,080	\$8,204	\$32,727	\$125,362
Estimated Expenditures Attributable to Alcohol <sup>2</sup>	\$74.111	\$432.693	\$168.639	\$65.631	\$261.814	\$1,002.888

<sup>1</sup> Downloaded from

[http://www.cms.hhs.gov/NationalHealthExpendData/02\\_NationalHealthAccountsHistorical.asp](http://www.cms.hhs.gov/NationalHealthExpendData/02_NationalHealthAccountsHistorical.asp). Published NHEA estimates were rounded to the nearest million. Therefore, additional decimal places are not provided.

<sup>2</sup> Total NHEA expenditures for each payer times the share of nursing home expenditures attributable to alcohol (0.80%).

#### 4. Retail Pharmacy and Other Health Professional Costs

Retail pharmacy and other professional (e.g., home health technicians) costs were estimated as a percentage of NHEA costs for these services. In the 1992 Harwood report, this percentage of NHEA costs was based on the share of hospital days for conditions fully or partially caused by alcohol. Because retail pharmacy and other health professional services are ambulatory care services, for this study this share was estimated based on the share of all ambulatory visits attributed to alcohol. Of 1.123 billion ambulatory visits, we estimated that 4.386 million or 0.39% were alcohol-attributable (Table III-7) (This excludes alcohol-attributable visits for a primary diagnosis of alcohol abuse, alcohol dependence or alcohol psychosis as costs related to these diagnoses are summarized in Section A). This share was applied to NHEA costs for retail pharmacy, non-durable medical equipment, and other health professional services to estimate the share of these costs attributable to alcohol. We assumed a constant share of expenditures attributable to alcohol across all payment sources (Table III-9).

**Table III-9: Retail Pharmacy, Other Professional,  
and Non-Durable Medical Equipment Costs Attributable to Alcohol, 2006  
(in millions \$)**

Category of Costs	Private Health Insurance	Medicaid	Medicare	Other	Out-of-Pocket	Total
<b>Total National Expenditures<sup>1</sup></b>						
Retail Pharmacy	\$96,244	\$19,723	\$39,516	\$14,623	\$46,731	\$216,837
Non-Durable Medical Equipment	\$0	\$0	\$2,299	\$0	\$33,043	\$35,342
Other Professional Services	\$21,446	\$3,657	\$12,482	\$6,125	\$14,987	\$58,697
<b>Estimated Expenditures Attributable to Alcohol<sup>2</sup></b>						
Retail Pharmacy	\$375.352	\$76.920	\$154.112	\$57.030	\$182.251	\$845.664
Non-Durable Medical Equipment	\$0.000	\$0.000	\$8.966	\$0.000	\$128.868	\$137.834
Other Professional Services	\$83.641	\$14.263	\$48.681	\$23.888	\$58.450	\$228.922
<b>Total</b>	<b>\$458.992</b>	<b>\$91.182</b>	<b>\$211.759</b>	<b>\$80.918</b>	<b>\$369.569</b>	<b>\$1,212.420</b>

<sup>1</sup> CMS National Health Expenditure Totals 2006. Published NHEA estimates are rounded to the nearest million. Therefore, additional decimal places are not provided.

<sup>2</sup> 0.39% of the CMS National Health Expenditure Total 2006, based on share of total national ambulatory visits attributable to alcohol.

## D. Treatment Costs for Crime Victims

### 1. Data Sources

The National Crime Victimization Survey (NCVS) is the primary source of information on the characteristics of criminal victimization and on the number and types of crimes not reported to law enforcement authorities. Data are obtained from a nationally representative sample of the U.S. population on the frequency, characteristics, and consequences of criminal victimization in the U.S. Using data from the 2006 NCVS, we estimated three types of crime victim losses: medical expenses, earnings lost due to missed worked days, and loss of stolen or damaged property. In this section we discuss losses from medical expenses; other types of victim losses are reported in Sections IV-E and V-B.

We focused on FBI Class I crimes or 100% alcohol-attributable crimes that were included in the NCVS. The numbers of crime victims were taken from The National Crime Victimization Survey Statistical Tables, 2006. To estimate mean medical expenses per victim, we analyzed the NCVS 2006 data on victims report of whether they received medical care as a result of the crime, and, if so where the care was received, and the amount of their medical expenses, including any expenses paid by insurance.

### 2. Methods and Results

The total medical expense was estimated as follows:

**Step 1: Assign Victims to Crime Categories** – Respondents were assigned to one of nine crime categories based on the type of crime code in the NCVS 2006. Only five of these

categories are presented in Table III-10 below because the remaining categories were either not attributable to alcohol or did not have any reported medical costs.

**Step 2: Determine Share Having Medical Expense** – The weighted share of respondents in each crime category who reported having medical care at a health care provider - including a doctor's office, an emergency room or a hospital - were coded as having a medical expense.

**Step 3: Estimate Medical Expense per Victim Having Expense** – Among those who indicated they had a medical expense, the reported values were averaged. Individuals reporting they had expenses, but having a zero value for the expense were excluded from calculation of the average.

**Step 4: Estimate Medical Care Expense per Victim** – The share of victims having an expense from step 2 was multiplied times the estimated mean expense among those having an expense from step 3 to estimate the mean medical expense per victim (Table III-10).

These data were combined with estimates of the number of victimizations and the crime-specific share attributable to alcohol (Table II-4, jail column) to estimate total victim medical expenses for each alcohol-attributable crime.

**Table III-10: Treatment Costs for Violent Crime Victims Attributable to Alcohol, 2006**

Type of Crime	Number of Victims <sup>1</sup>	Medical Expense per Victim <sup>2</sup>	AAF	Total Cost (in millions \$)
(1)	(2)	(3)	(4)	(2) X (3) X (4)
<b>Violent Crime</b>				
Forcible Rape	116,600	\$285.03	31.1%	\$10.336
Other Sex Offenses	144,340	\$0.00	18.8%	\$0.000
Aggravated Assault	1,344,280	\$842.93	22.6%	\$256.087
Other Assault	3,776,550	\$20.06	13.8%	\$10.455
<b>Property Crime</b>				
Robbery	712,610	\$140.74	18.7%	\$18.755
<b>Total</b>	<b>6,094,380</b>			<b>\$295.633</b>

<sup>1</sup> National Crime Victimization Survey Statistical Tables, 2006 Table 1.

<sup>2</sup> Based on the National Crime Victimization Survey, 2006

These crime victim medical costs are included in the summary table on crime-related costs (Table VI-2). However, since the health costs associated with injuries from crime are included in the health care estimates, the costs reported here are not included in the health care estimates to avoid potential double counting.



## E. Treatment Costs for Fetal Alcohol Syndrome

Despite warnings from the U.S. Surgeon General in 2005 that no amount of alcohol is safe during pregnancy, data from the 2006 and 2007 National Survey on Drug Use and Health (NSDUH) indicate that among pregnant women aged 15 to 44, an estimated 11.6 percent reported current alcohol use, 3.7 percent reported binge drinking, and 0.7 percent reported heavy drinking (9). About 4,000 infants per year are adversely affected by fetal alcohol syndrome (FAS) and other alcohol-related birth defects, termed fetal alcohol spectrum disorders (FASD).

The Lewin Group recently conducted a study of the Economic Costs of Fetal Alcohol Spectrum Disorders (10). These costs included home and residential care associated with mental retardation, medical equipment, special education, and lost productivity. Estimates of medical cost for FAS were drawn directly from that report and were trended to 2006 based on a 1.87% annual increase in the U.S. population and an 8.42% annual increase in the consumer price index (CPI) for medical care services. Table III-11 presents the estimates for FAS costs based on a prevalence of 1 per 1,000 births. Appendix C, Table C-1 shows cost estimates based on other assumptions of prevalence.

**Table III-11: Treatment Costs for FAS by Age Group, 2006**

Age Group	Average Annual Expected Cost of Treatment	FAS Population	National Annual Cost (millions \$)
<18	\$3,372.13	62,556	\$210.947
18-77	\$11,250.79	206,835	\$2,327.058
All Ages	\$9,421.27	269,391	\$2,538.004

## F. Prevention and Research

Federal, state, and local governments as well as private organizations pay for research and prevention programs for excessive alcohol consumption. Annual federal expenditures for these programs are generally available through budget documents as spending related to the National Drug Control Strategy from the Office of National Drug Control Policy (ONDCP). Programs targeting illicit drug use often overlap with those targeting alcohol, as ONDCP considers alcohol an illegal drug for minors. Where programs addressed both alcohol and drug abuse, the share attributed to alcohol was estimated based on the share of specialty substance abuse treatment spending in the SEP for alcohol (48.1%). Harwood (1998) obtained estimates of state, local, and private prevention expenditures from a National Association of State Alcohol and Drug Abuse Directors (NASADAD) report. Although this report is no longer being updated, NASADAD provided estimates of state and local prevention and research expenditures based on state block grants reports for state fiscal year (SFY) 2005. These estimates were trended to 2006 based on changes in federal appropriations for drug abuse prevention as recorded in the ONDCP National Drug Control Strategy. Table III-12 summarizes federal and state and local research and prevention costs attributable to alcohol in 2006.

**Table III-12: Prevention and Research Costs, 2006**  
(in millions of \$)

Source of Expenditures	Overall Spending	Share Attributable to Alcohol <sup>1</sup>	Alcohol-attributable Expenditures (in millions \$)
<b>Federal Research and Prevention</b>			
Substance Abuse Block Grant Prevention Set-Aside <sup>2</sup>	\$351.485	0.481	\$169.064
Projects of Regional and National Significance Prevention <sup>2</sup>	\$192.767	0.481	\$92.721
Safe and Drug-Free Schools and Communities <sup>3</sup>	\$489.807	0.481	\$235.597
DoD Prevention and Research <sup>4</sup>	\$193.744	0.481	\$93.191
National Institute on Alcohol Abuse and Alcoholism <sup>5</sup>	\$432.000	1.000	\$432.000
ONDCP Drug-Free Communities <sup>6</sup>	\$79.200	0.481	\$38.095
ONDCP National Youth Anti-Drug Media Campaign <sup>6</sup>	\$99.000	0.481	\$47.619
Enforcing Underage Drinking Laws <sup>7</sup>	\$24.681	1.000	\$24.681
NHTSA Public Information and Outreach on Drunk Driving <sup>8</sup>	\$0.200	1.000	\$0.200
CDC Fetal Alcohol Syndrome <sup>9</sup>	\$9.856	1.000	\$9.856
<b>State and Local Research and Prevention<sup>10</sup></b>	<b>\$133.255</b>	<b>0.481</b>	<b>\$64.096</b>
<b>Total</b>	<b>\$2,005.995</b>		<b>\$1,207.120</b>

<sup>1</sup> If no other information is available, substance abuse spending related to both alcohol and illicit drugs is allocated to alcohol based on the share of SEP substance abuse treatment spending related to alcohol ( $\$11,351 / \$23,572 = 48.1\%$ ).

<sup>2</sup> ONDCP National Drug Control Strategy Budget. <http://www.ncjrs.gov/pdffiles1/ondcp/216432.pdf> (page 43). Accessed on April 5, 2010. 20% of Substance Abuse Block Grant Spending is allocated to Prevention. Includes only Federal Spending.

<sup>3</sup> ONDCP National Drug Control Strategy Budget. <http://www.ncjrs.gov/pdffiles1/ondcp/216432.pdf> (page 25). Accessed on April 5, 2010.

<sup>4</sup> ONDCP National Drug Control Strategy Budget. <http://www.ncjrs.gov/pdffiles1/ondcp/216432.pdf> (page 17). Accessed on April 5, 2010.

<sup>5</sup> The Budget for Fiscal Year 2008 at <http://www.gpoaccess.gov/usbudget/fy08/pdf/appendix/hhs.pdf> (page 408). Accessed on March 10, 2010. Used to obtain actual 2006 expenditures for NIAAA.

<sup>6</sup> ONDCP National Drug Control Strategy Budget. <http://www.ncjrs.gov/pdffiles1/ondcp/216432.pdf> (page 107). Accessed on April 5, 2010.

<sup>7</sup> ONDCP National Drug Control Strategy Budget. <http://www.ncjrs.gov/pdffiles1/ondcp/216432.pdf> (page 91). Accessed on April 5, 2010.

<sup>8</sup> ONDCP National Drug Control Strategy Budget. <http://www.ncjrs.gov/pdffiles1/ondcp/216432.pdf> (page 138). Accessed on April 5, 2010.

<sup>9</sup> CDC FY06 FAS budget CAN 69211892.

<sup>10</sup> Includes state and local government funding derived by NASADAD based and State Block Grant applications for SFY 2005 trended to 2006.

## G. Health Insurance Administration

The cost of health insurance administration for medical care attributable to alcohol was estimated as a percentage of health treatment costs attributable to alcohol. Since administration costs vary substantially by payment source, where possible health care costs were estimated by primary source of payment. Source of payment information was also necessary for assessing burden of costs. Where such information was unavailable, the NHEA distribution of source of payment for the given type of care or an average across all payers was applied.

The health insurance administration percentages for the payers reported in Table III-13 were calculated based on CMS' NHEA for 2006 (11). In the NHEA, the category "personal health care expenditures" included all therapeutic goods and services rendered to treat or prevent specific diseases or conditions in a specific person. These expenditures were compared to the NHEA category for Administration & Net Costs of Private Insurance to estimate administrative costs as a percentage of treatment costs.

**Table III-13: Administrative Costs as Percentage of Treatment Costs, 2006**

Source of Payment	2006 U.S. Expenditures (in millions \$)		Admin. Costs as % of Treatment Costs
	Personal Health Care Expenditures	Administration & Net Cost of Private Insurance	
Private Health Insurance	\$637,950	\$93,316	14.6%
Medicaid	\$292,726	\$25,103	8.6%
Medicare	\$382,793	\$19,503	5.1%
Other	\$197,023	\$12,434	6.3%
Out-of-Pocket	\$255,006	\$0	0.0%
<b>Total</b>	<b>\$1,765,498</b>	<b>\$150,356</b>	<b>8.5%</b>

These percentages were then applied to estimated alcohol-attributable health treatment costs by type of care developed in previous sections (Table III-14).

**Table III-14: Health Insurance Administration Costs  
for Treatment of Alcohol-attributable Conditions, 2006  
(in millions \$)**

Category of Treatment Cost	Private Health Insurance	Medicaid	Medicare	Other	Out-of-Pocket	Payer Dist. Unknown	Total
<b>Alcohol-attributable Medical Expenditures</b>							
Private Hospital	\$1,776.349	\$711.320	\$1,453.269	\$339.604	\$567.521	NA	\$4,848.064
Federal Hospital	NA	NA	NA	\$267.504	NA	NA	\$267.504
Ambulatory Care Services	\$451.620	\$209.834	\$201.246	\$131.554	\$201.692	NA	\$1,195.945
Nursing Home	\$74.111	\$432.693	\$168.639	\$65.631	\$261.814	NA	\$1,002.888
Retail Pharmacy	\$375.352	\$76.920	\$154.112	\$57.030	\$182.251	NA	\$845.664
Non-Durable Medical Equipment	\$0.000	\$0.000	\$8.966	\$0.000	\$128.868	NA	\$137.834
Other Professional Services	\$83.641	\$14.263	\$48.681	\$23.888	\$58.450	NA	\$228.922
Fetal Alcohol Syndrome	NA	NA	NA	NA	NA	\$2,538.004	\$2,538.004
<b>Total</b>	<b>\$2,761.073</b>	<b>\$1,445.029</b>	<b>\$2,034.913</b>	<b>\$885.211</b>	<b>\$1,400.595</b>	<b>\$2,538.004</b>	<b>\$11,064.826</b>
<b>Alcohol-attributable Health Insurance Administration Expenditures</b>							
Insurance Percentage	14.6%	8.6%	5.1%	6.3%	0.0%	8.5%	8.2%
Estimated Insurance Administration	\$403.875	\$123.920	\$103.677	\$55.865	\$0.000	\$216.145	\$903.483

Administration costs developed as part of the SEP estimates (\$682 million)(Table III-2) were added to the above Table III-14 total (\$903 million) to obtain the final estimate of \$1,586 million for insurance administration costs.

## H. Training

Estimates of training costs in Harwood (1998) were based on a study of SA training needs (12). Since that research has not been updated, we obtained estimates of the number of new and existing SA counselors and MH and SA social workers from the Bureau of Labor Statistics. Hours of training for new and existing professionals were based on hours required by the National Association of Addiction Professionals and the National Association of Social Workers. Assuming that the majority of continuing education was provided at conferences, Harwood (1998) estimated training costs at \$16.67 per hour based on the cost of attending the National Association of Alcoholism and Drug Counselors conferences in 1992. By 2006, continuing education courses were widely available on-line for as little as \$8 an hour. Due to the growing use of on-line continuing education, we assumed a cost of \$10 per training hour. The alcohol-related training cost of SA counselors and social workers was estimated at \$13.745 million (Table III-15).



**Table III-15: Training Costs for SA Counselors and SA Social Workers, 2006**  
(in millions of \$)

Type of Professional	Number of Personnel	Training or Continuing Education Hours/Year <sup>3</sup>	Share of Hours Attributable to Alcohol <sup>4</sup>	Cost per Training Hour	Total Cost (in millions \$)
New Substance Abuse and Behavioral Disorder Counselors <sup>1</sup>	2,900	270.0	48.1%	\$10	\$3.766
Existing Substance Alcohol and Behavioral Disorder Counselors <sup>2</sup>	75,940	20.0	48.1%	\$10	\$7.305
New Mental Health and Substance Abuse Social Workers <sup>1</sup>	3,700	180.0	7.8%	\$10	\$0.520
Existing Mental Health and Substance Abuse Social Workers <sup>2</sup>	114,820	24.0	7.8%	\$10	\$2.153
<b>Total</b>					<b>\$13.745</b>

<sup>1</sup> Number of personnel obtained from Bureau of Labor Statistics Occupational Outlook Handbook. <http://www.bls.gov/oco/ocos067.htm>. Accessed on March 10, 2010.

<sup>2</sup> Number of personnel obtained from Bureau of Labor Statistics May 2006 Occupation Employment and Wage Estimates. [http://www.bls.gov/oes/2006/may/oes\\_nat.htm#b00-0000](http://www.bls.gov/oes/2006/may/oes_nat.htm#b00-0000). Accessed on March 10, 2010.

<sup>3</sup> Training hours for Counselors and Social Workers based on association certification requirements. Estimates for other professions based on Harwood (1998).

<sup>4</sup> Share attributed to alcohol based on share of SEP treatment spending. SEP spending estimates indicated 48.1% (\$11,351/\$23,572) of substance abuse spending was related to alcohol and 7.8% (\$11,351/\$145,281) of total substance abuse and mental health spending was related to alcohol.

For MH professionals, the number of hours of training a year related to alcohol and drugs was based on Harwood (1998). Only 48.1% of these hours were attributed to alcohol based on share of SEP SA treatment spending related to alcohol; the remainder was attributed to other drugs. A total of \$15.782 million in costs was estimated (Table III-16).

**Table III-16: Training Costs for MH Professionals, 2006**  
(in millions of \$)

Type of Professional	Number of Personnel	Hours of Alcohol and Drug Training/Year	Share of Hours Attributable to Alcohol	Cost per Training Hour <sup>4</sup>	Total Cost (in millions \$)
MH Professionals <sup>1</sup>	1,640,590	2.0	48.1%	\$10	\$15.782

<sup>1</sup> Number of Professionals obtained from Bureau of Labor Statistics May 2006 Occupation Employment and Wage Estimates. [http://www.bls.gov/oes/2006/may/oes\\_nat.htm#b00-0000](http://www.bls.gov/oes/2006/may/oes_nat.htm#b00-0000). Accessed on March 10, 2010.

The sum of the costs in Tables III-15 and III-16 was \$29.5 million in training costs attributed to alcohol (Table III-17).

**Table III-17: Total Training Costs Attributed to Alcohol, 2006  
(in millions of \$)**

Type of Professional	Total Cost (in millions \$)
New Substance Abuse and Behavioral Disorder Counselors	\$3.766
Existing Substance Alcohol and Behavioral Disorder Counselors	\$7.305
New Mental Health and Substance Abuse Social Workers	\$0.520
Existing Mental Health and Substance Abuse Social Workers	\$2.153
Mental Health Professionals	\$15.782
<b>Total</b>	<b>\$29.527</b>

### I. Treatment Costs for Cholelithiasis (Gallstones)

Although the health impact of excessive drinking is overwhelmingly negative, the literature suggests that there is a small reduction in cholelithiasis attributable to excessive alcohol consumption. Table III-18 summarizes this benefit.

**Table III-18: Alcohol-attributable Treatment Costs Averted  
for Cholelithiasis by Type of Care, 2006**

Type of Cost	Total Cost (in millions \$)
Inpatient Hospital Care	-\$36.076
Ambulatory Care	-\$1.703
Retail Pharmacy	-\$1.812
Non-Durable Medical Equipment	-\$0.295
Other Professional Services	-\$0.491
<b>Total</b>	<b>-\$40.377</b>

Estimates from HCUP indicated there were 341,723 hospital discharges related to cholelithiasis in 2006. We estimated 3,022 discharges were avoided due to excessive alcohol consumption. There were 1,037,183 ambulatory visits related to cholelithiasis in 2006. We estimated 9,388 ambulatory visits related to cholelithiasis were avoided. These 9,388 visits represented 0.00084% of all ambulatory care visits nationally. Retail pharmacy, non-durable medical equipment costs and other professional service costs were estimated by assuming this 0.00084% share of the NHEA for each category was saved as a result of excessive alcohol consumption.

### IV. Productivity Losses

When sickness, disability, death, or incarceration prevents an individual from their normal expected productive activities this represents a loss of potential productivity – work that would have been done, but was not because of the excessive alcohol consumption. Under the “human capital” methodology recommended by the PHS Guidelines, lost productive time is to be valued at the market equivalent to replace the effort. This means the lost productive time should be valued at the expected salary plus the value of fringe benefits plus employer payroll

taxes. Productive activities include both work for hire (or self employment) and the value of effort in keeping the household.

The impact of excessive alcohol consumption on productivity is multifaceted and includes lost productivity from short term morbidity, longer term disability, impaired productivity, mortality, and crime-related losses (lost work days among crime victims and lost productivity of persons that are incarcerated because of conviction for crimes that were attributable to excessive alcohol consumption).

### A. Summary

A total of \$161.3 billion in productivity losses were attributed to alcohol in 2006 (Table IV-1). Impaired productivity accounted for 51.9% of all productivity losses while mortality accounted for 40.3%.

**Table IV-1**  
**Total Productivity Losses, 2006**  
**(in millions of \$)**

<b>Cost Category</b>	<b>Total Cost</b>
Impaired Productivity	\$83,695.036
Traditional Earnings	\$74,101.827
Household Productivity	\$5,355.629
Absenteeism	\$4,237.580
Institutionalization/Hospitalization	\$2,053.308
Mortality	\$65,062.211
Incarcerations	\$6,328.915
Victims of Crime	\$2,092.886
Fetal Alcohol Syndrome	\$2,053.748
<b>Total, Productivity Losses</b>	<b>\$161,286.103</b>

### B. Impaired Productivity

Excessive alcohol consumption can interfere with an individual's ability to gain employment and with their productivity on the job and at home. Alcohol can interfere with an individual's ability to work (physical and/or mental impairment); ability to find a job (lack of skills, experience, or reliability); and, potentially, willingness or motivation to find a job. Thus, wages or salaries among workers with excessive alcohol consumption may be lower than among similar workers without such problems.

We divide our estimate of impaired productivity losses into three components. These are: a traditional earnings model, household productivity losses, and a model of absenteeism. The first two of these components only identify losses among individuals who have a lifetime history of alcohol dependence. The third component of the productivity loss estimate identifies losses associated with individuals who binge drink, but who have no lifetime history of alcohol dependence.

As was done by Harwood (1998), we estimate a traditional earnings model providing estimates of labor force productivity losses among individuals with a lifetime history of alcohol dependence. Because the data used for the earnings models does not address household productivity, estimates of household productivity losses among individuals with lifetime history of dependence are estimated as a separate component. The final component of the loss estimate, losses related to absenteeism, is estimated separately from the earnings model, because while the literature suggests (13) that individuals who binge drink, but who have no lifetime history of dependence, have increased absenteeism, the traditional earnings model has failed to identify a productivity loss for these individuals. Estimating the impact of excessive alcohol consumption on earnings is impeded because of the "income effect" of higher wages. That is, individuals with higher income tend to consume more goods (like alcohol) and services. Thus, simple models of the relationship between income and alcohol consumption tend to show alcohol consumption goes up with increasing household income. Our estimate of productivity losses associated increased absenteeism among binge drinkers, avoids this issue by directly identifying the increased absenteeism.

### **1. Traditional Earnings Model**

The traditional human capital approach models an individual's productivity as a function of human capital characteristics such as experience, education, and health status. As was done by Harwood (1998), we only estimated productivity losses related to lifetime alcohol dependence.

#### **a. Data Sources**

Estimates in this section are developed based on the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC). NESARC was designed to determine the magnitude of alcohol use disorders and their associated disabilities. The NESARC is a representative sample of the non-institutionalized U.S. population 18 years of age and older. Our analysis used wave I fielded in 2001-2002 which obtained responses from 43,093 individuals.

Several alternative data sources were assessed for use in evaluating productivity losses related excessive alcohol consumption including the National Survey on Drug Use and Health (NSDUH) and the National Comorbidity Survey - Replication (NCS-R). While data for a more recent period is available from the NSDUH survey, this survey was not used because it does not include a measure of lifetime dependence on alcohol. The NESARC survey was preferred to the NCS-R because NESARC has a substantially larger sample size allowing for more precise estimation. NESARC also includes individuals 55-64 while individuals in this range are excluded from the NCS-R.

#### **b. Methods**

To estimate productivity losses related to excessive alcohol consumption, Harwood (1998) used a microsimulation approach developed for and employed in many analyses of the RAND Health Insurance Experiment (Newhouse and the Health Insurance Group 1993; Manning et al. 1987; Duan, 1983(14, 15)). In contrast to the approach taken by Harwood, recent research suggests that it is important to initially test the performance of alternative specifications before selecting the appropriate specification for estimating productivity losses related to excessive alcohol consumption.



The microsimulation approach taken by Harwood (1998) partitioned observations into those with and without alcohol dependence. Then, for each population subgroup earnings were estimated through a two-part model. The first part of the model estimated the probability of labor force participation and the second part estimated logged earnings conditional on labor force participation through ordinary least squares regression (OLS). Earnings were estimated in logged form because of their skewed distribution. Then, the estimates of logged dollars were transformed into dollars. Smearing techniques developed by Duan (1983) were used to adjust for retransformation bias that results from use of the log-linear model.

Manning and Mullahy (2001) (16) suggest alternative approaches to estimation may be preferable. They focus on the second-part of the two-part model and assert that use of generalized linear models (GLM) may be preferable to use of OLS depending on the data distribution. The GLM models they suggest do not require retransformation from the log scale as they estimate dollars directly. Thus, these models may be easier for researchers to implement than OLS. The OLS method can also be biased if the transformations employed are misspecified and do not appropriately address the heteroscedasticity of the data. GLM models are not always preferable to OLS, however. Homoscedastic OLS models are more precise than GLM models if their assumptions hold. Manning and Mullahy (2001) assert that “GLM models can yield very imprecise estimates if the log-scale error is heavily-tailed.

Based on this research by Manning and Mullahy, we updated the methods used by Harwood. Since we are interested in explicitly measuring the reductions in labor force participation separate from reductions in earnings, we only considered two-part models with the first part of the model estimating the probability of labor force participation and the second part estimating earnings conditional on labor force participation. In each part of the model, labor force participation and earnings were estimated as a function of age (a proxy for experience), race, educational attainment (*educ*), number of children under 18 (*children*), lifetime severe mental disorder (*mental*), lifetime alcohol disorder (*alc*), and lifetime drug disorder (*drug*) and gender.

$$\text{Earnings} = f(\text{Age}, \text{race}, \text{educ}, \text{children}, \text{mental}, \text{alc}, \text{drug}, \text{gender})$$

Because the labor market literature suggested that these various characteristics may have a different impact on men and women, models were estimated for men and women separately. Models that include controls for marital status tend to understate the impact of alcohol on labor force participation because of excessive alcohol consumption’s impact on reducing the likelihood of marriage or increasing the likelihood of divorce. Thus, our baseline model did not control for marital status. However, we tested the impact of controlling for marital status and provide model estimates controlling for marital status in Appendix D-1.

The functional form of the first part of the model for each specification considered was the same: a logit model of labor force participation. Then, we considered three alternative forms for our earnings model: 1) OLS regression for logged earnings with error retransformation, 2) GLM model with log link function and constant variance, and 3) GLM model with log-link function and variance proportional to the mean.

Each of these models was run for men and women in our sample. Then, the accuracy of the models for men and women with and without a lifetime history of alcohol dependence was tested

by comparing the actual and mean predicted earning for each decile of the sample. The second model had the best predictive capacity by decile. Thus, this model was chosen.

### c. Study Variables

Below, we provide a brief description of the study variables:

- **Lifetime Alcohol Dependence, Drug Dependence and Mental Disorder** - The NESARC questionnaire was designed around the DSM-IV clinical standards to allow potential diagnoses to be assigned respondents based on answers to specific sequences of questions concerning alcohol and drug use and symptoms and symptoms of mental disorders. These derived lifetime defined variables were used in this study.
- **Labor Force Participation** - Respondents were considered in the labor force if they reported positive income and working full time or part-time, or being employed but not currently at work due to illness, injury, vacation, or other absence from work.
- **Income** - Individuals are not asked to report labor force earnings in the NESARC. Respondents were asked to report their total personal income in the last 12 months in one of 17 categories. Income is used as a proxy for earnings. Use of income as a proxy for earnings will tend to induce a negative bias on our estimate of earnings losses related to alcohol consumption because income will include transfer payments from social programs or other sources that are more likely to be received by individuals with illnesses such as alcohol dependence. Individuals reporting no income were defined as not participating in the labor force, and thus, were excluded from the income model, (e.g., the second part of the two-part model). We created a continuous income measure based on the remaining 16 categories by coding at their mid-points for the continuous measure. The highest category (\$100,000 or more) was coded as \$125,000 in the continuous measure.

### d. Results

Descriptive statistics for the variables included in the regression analysis are presented in Table IV-2. These statistics indicate that a much larger share of individuals with a history of alcohol dependence have a history of mental illness and drug dependence relative to those with no history of alcohol dependence. For example, 71.6% of women with a history of alcohol dependence also have a history of mental illness compared to only 36.2% of women with no history of alcohol dependence. A greater share of individuals reporting a history of alcohol dependence were between 20 and 44, and a smaller share were between 55 and 64, relative to their counterparts with no history of alcohol dependence. A smaller share of individuals with a history of alcohol dependence were married relative to those with no history of dependence. Finally, the estimates indicate a smaller share of individuals with a history of alcohol dependence are in the labor force and individuals in this group have lower average earnings when in the labor force, but these differences are small.

The results from the logit model for labor force participation and the earnings model are presented in Table IV-3.

Similar to Harwood's 1992 study, alcohol dependence had no measured effect on workplace productivity for women. The parameter estimates for the impact of alcohol dependence on

labor force participation and earnings given labor force participation for women were not significant. Thus, no productivity loss for women was estimated. In contrast, for males, there was a statistically significant reduction in both labor force participation and earnings given labor force participation.

**Table IV-2: Comparison of Regression Variable Means For Those With and Without a History of Alcohol Dependence Individuals 18 to 64**

Variable	Men						Women					
	No History of Alcohol Dependence			History of Alcohol Dependence			No History of Alcohol Dependence			History of Alcohol Dependence		
	Mean / Percent	Standard Error		Mean / Percent	Standard Error		Mean / Percent	Standard Error		Mean / Percent	Standard Error	
Lifetime History of Mental Illness (%)	21.987	0.368		50.530	0.949		36.246	0.361		71.584	1.082	
Lifetime History of Drug Dependence (%)	1.107	0.093		14.965	0.677		1.007	0.075		15.468	0.867	
<b>Age Group (%)</b>												
18-19	5.172	0.197		5.028	0.415		4.272	0.152		4.299	0.487	
20-24	10.021	0.267		13.391	0.647		10.484	0.230		15.508	0.868	
25-34	21.622	0.366		25.107	0.823		21.250	0.307		28.413	1.082	
35-44	25.062	0.385		26.137	0.834		25.208	0.326		26.261	1.056	
45-54	22.726	0.373		20.659	0.769		22.883	0.315		19.614	0.952	
55-64	15.397	0.321		9.679	0.561		15.904	0.275		5.905	0.565	
<b>Race (%)</b>												
Non-Hispanic White	67.237	0.417		77.495	0.793		67.091	0.353		79.071	0.976	
Non-Hispanic Black	11.286	0.281		7.417	0.498		13.311	0.255		7.274	0.623	
Hispanic	14.342	0.312		9.467	0.556		12.517	0.248		8.150	0.656	
Other	7.135	0.229		5.621	0.437		7.081	0.193		5.505	0.547	
<b>Highest Educational Attainment (%)</b>												
Less than 12 years	14.399	0.312		13.290	0.645		12.736	0.250		9.531	0.704	
High School graduate	27.955	0.399		29.289	0.864		28.734	0.340		25.608	1.047	
Some college	29.508	0.406		35.024	0.906		32.646	0.352		39.345	1.172	
College graduate	28.138	0.400		22.397	0.792		25.885	0.329		25.516	1.046	



Variable	Men				Women			
	No History of Alcohol Dependence		History of Alcohol Dependence		No History of Alcohol Dependence		History of Alcohol Dependence	
	Mean / Percent	Standard Error	Mean / Percent	Standard Error	Mean / Percent	Standard Error	Mean / Percent	Standard Error
Married (%)	60.861	0.434	48.454	0.949	60.007	0.368	45.179	1.194
Number of Children (under 18)	81.999	1.036	74.367	2.076	92.416	0.891	85.060	2.674
In the Labor Force (%)	81.960	0.342	79.398	0.768	67.219	0.353	69.030	1.109
Average Annual Earnings (given labor force participation)	\$44,512.640	\$315.960	\$39,161.880	\$602.851	\$29,369.020	\$213.380	\$27,720.800	\$625.077
Observations	12,640		2,774		17,735		1,739	

Table IV-3: Logit Estimates of Labor Force Participation and GLM Regression Estimates of Earnings

	Logistic Model Labor Force Participation				GLM Model Earnings Given Labor Force Participation			
	Men		Women		Men		Women	
	Coefficient Estimate	Standard Error	Coefficient Estimate	Standard Error	Coefficient Estimate	Standard Error	Coefficient Estimate	Standard Error
Intercept	2.077 *	0.054	1.317 *	0.032	10.591 *	0.020	10.164 *	0.028
<b>Age Group (Ref Grp: 35-44)</b>								
18-19	-1.832 *	0.072	-0.909 *	0.056	-1.303 *	0.167	-1.255 *	0.181
20-24	-0.707 *	0.052	-0.554 *	0.030	-0.765 *	0.048	-0.741 *	0.051
25-34	-0.012	0.051	-0.165 *	0.026	-0.223 *	0.019	-0.241 *	0.023
45-54	-0.201 *	0.043	-0.267 *	0.029	0.087 *	0.015	-0.004	0.020
55-64	-1.409 *	0.049	-1.133 *	0.029	0.062 *	0.020	-0.059 *	0.027
<b>Race (Ref Grp: White)</b>								
Non-Hispanic Black	-0.563 *	0.034	0.169 *	0.027	-0.256 *	0.028	-0.027	0.025
Hispanic	0.307 *	0.053	-0.149 *	0.029	-0.243 *	0.027	-0.094 *	0.033
Other	-0.541 *	0.048	-0.424 *	0.036	-0.088 *	0.024	-0.065 *	0.032
<b>Highest Educational Attainment (Ref Grp: HS Grad)</b>								
Less than 12 years	-0.521 *	0.048	-0.643 *	0.034	-0.333 *	0.039	-0.293 *	0.060
Some college	-0.108 *	0.037	0.234 *	0.028	0.164 *	0.020	0.293 *	0.027
College graduate	0.407 *	0.042	0.461 *	0.030	0.563 *	0.018	0.699 *	0.025
Married	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Number of Children (under 18)	0.250 *	0.014	-0.201 *	0.008	0.051 *	0.005	-0.064 *	0.009
Lifetime history of Mental Illness	-0.310 *	0.038	-0.206 *	0.020	-0.085 *	0.015	-0.033 *	0.016
Lifetime history of Drug Dependence	-0.042	0.076	-0.390 *	0.070	-0.063	0.044	-0.074	0.070
Lifetime history of Alcohol Dependence	-0.155 *	0.037	0.077 *	0.039	-0.052 *	0.018	-0.014	0.029

\* Significantly different from zero at the 95% confidence level.

Averaging across all age groups the results imply a loss 2.5% reduction in labor force participation and a 5.0% reduction in earnings among those who continue working given the presence of alcohol dependence.

To estimate the earnings loss resulting from alcohol dependence, for each age group in the regression model, we estimated the predicted labor force participation rate and income given labor force participation for a male with the average characteristics of the age group with and without a lifetime history of alcohol dependence. Then, the proportion of individuals in each age group with a lifetime history of alcohol dependence in each of three groups was calculated: not in labor force as a result of factors other than alcohol dependence (i.e., share of individuals with no history of alcohol dependence who do not participate in the labor force), out of labor force due to alcohol dependence (i.e., the difference in the share working with and without alcohol dependence), and continuing to participate in labor force despite lifetime history of alcohol dependence (i.e., the share working with alcohol dependence). The first group has no predicted earnings loss. For the second group, we estimate an earnings loss equal to the predicted income of the average male in the age group without a lifetime history of alcohol dependence. For the final group, we estimate an earnings loss equal to the difference in predicted income between individuals with and without a history of alcohol dependence who participate in the labor force. Based on the share of individuals in the age group, in each of these three groups, a mean loss for each age group is calculated. The mean loss for the age group is increased by 42.9% to reflect the value of fringe benefits and 18.8% based on the CPI for all services to reflect inflation between 2001, the year of the NESARC survey, and 2006. The estimated loss for each age group is reported in column 4 of Table IV-4.

For each age group, the loss estimate was multiplied by the prevalence of alcohol disorders in that age group (estimated from the NESARC) and the Census Bureau estimate of the number of individuals in that age group. Then, losses were summed across the age groups (Table IV-4).

**Table IV-4: Labor Force Earnings Losses for Men  
with a History of Alcohol Dependence, 2006**

Demographic Group	US Population <sup>1</sup>	Prevalence of Lifetime Alcohol Dependence <sup>2</sup>	Mean Estimated Loss per Alcohol Dependent Individual <sup>3</sup>	Total Loss (in millions)
(1)	(2)	(3)	(4)	(2) X (3) X (4)
18-19	4,373,946	18.78%	\$989.86	\$813.148
20-24	10,910,090	24.12%	\$2,061.01	\$5,423.749
25-34	20,564,653	21.64%	\$3,655.87	\$16,272.212
35-44	21,850,282	19.88%	\$4,680.08	\$20,326.871
45-54	21,289,628	17.78%	\$5,395.26	\$20,422.499
55-64	15,223,880	13.01%	\$5,475.22	\$10,843.348
<b>Total</b>				<b>\$74,101.827</b>

<sup>1</sup> The estimated size of the U.S. population by age/gender for 2006 is from the U.S. Census Bureau (18-19 age group calculated as 2/5 of the 15-19 Census age group).

<sup>2</sup> Prevalence of Lifetime alcohol dependence was estimated based on NESARC for consistency with the loss estimates.

<sup>3</sup> Loss per individuals includes losses related to reduction in labor force participation rate and reductions in earnings among those continuing to participate in the labor force.

## 2. Household Productivity Losses

Researchers have not directly estimated reductions in household (HH) productivity associated with excessive alcohol consumption because data are lacking, e.g., the NCS-R, NESARC and NSDUH do not ask about hours and level of effort in HH chores. Thus, there are no data sources available for directly estimating reductions in HH productivity associated with excessive alcohol consumption. Nevertheless, inclusion of HH productivity costs in cost of illness studies is generally accepted. Thus, we assumed that impairment from excessive alcohol consumption observed in labor market income would be similarly observed in the HH. Thus, based on the losses estimated in the second part of the traditional earnings models presented in Table IV-3, we assumed a 5.0% reduction in household productivity based on the estimated reduction in labor market productivity. A 2.5% shift from being employed to not being employed is also assumed based on the traditional earnings model results. No loss was estimated for women.

The Bureau of Labor Statistics, American Time Use Survey 2006, was used to estimate the average number of hours spent on HH chores by age/gender categories and whether the individual was employed. We followed generally accepted guidelines in valuing lost time in HH activities at the wage rate it costs to hire a person to perform these duties in the labor market. Thus, the value of HH labor hours was based on the mean hourly wage of HH workers in 2006 adjusted for fringe benefits as estimated by the Bureau of Labor Statistics (Table IV-5).

**Table IV-5: Mean Annual Dollar Value of HH Productivity for Men by Age and Employment Status, 2006**

Age Group	Average Number of Hours per Day on HH Labor <sup>1</sup>		Mean Annual Dollar Value of HH Productivity <sup>2</sup>	
	Employed in the Labor Force	Not Employed in the Labor Force	Employed in the Labor Force	Not Employed in the Labor Force
18-19 years old	0.79	1.29	\$3,660.10	\$5,982.22
20-24 years old	0.89	1.17	\$4,134.16	\$5,422.64
25-34 years old	1.42	2.02	\$6,594.31	\$9,376.35
35-44 years old	1.71	3.14	\$7,951.44	\$14,544.12
45-54 years old	1.66	2.35	\$7,715.28	\$10,895.76
55-64 years old	1.48	2.64	\$6,877.61	\$12,263.03

<sup>1</sup> Based on analysis of the American Time Use Survey, 2006.

<sup>2</sup> Product of hours in HH labor and BLS estimate of mean hourly earnings for childcare and household workers in 2006 adjusted for the value of fringe benefits (\$12.71).

Table IV-6 combines the changes in household productivity related to reduced productivity and decreased labor force participation to produce an overall estimated loss.



**Table IV-6: Estimated Household Productivity Losses for Men with a History of Alcohol Dependence, 2006**

Age Group	US Population <sup>1</sup>	Prevalence of Lifetime Alcohol Dependence <sup>2</sup>	Mean Estimated Loss per Individual <sup>3</sup>	Total Loss (in millions)
(1)	(2)	(3)	(4)	(2) X (3) X (4)
18-19	4,373,946	18.78%	\$156.28	\$128.380
20-24	10,910,090	24.12%	\$189.23	\$497.985
25-34	20,564,653	21.64%	\$307.73	\$1,369.703
35-44	21,850,282	19.88%	\$345.81	\$1,501.937
45-54	21,289,628	17.78%	\$355.15	\$1,344.352
55-64	15,223,880	13.01%	\$259.17	\$513.272
<b>Total</b>				<b>\$5,355.629</b>

<sup>1</sup> From the U.S. Census Bureau for 2006 (18-19 age group calculated as 2/5 of the 15-19 Census age group).

<sup>2</sup> Prevalence estimated based on NESARC for consistency with the loss estimates

<sup>3</sup> Estimated based on regression results.

### 3. Losses Related to Absenteeism

In this section, we describe the methods and results for estimating costs associated with increased absenteeism resulting from binge drinking.

#### a. Data Source and Methods

##### NSDUH Survey

The National Survey of Drug Use and Health for 2005 through 2007 was our data source. The NSDUH is an annual household survey of the U.S., civilian, non-institutionalized population aged 12 and above with ~67,500 individuals interviewed annually. NSDUH collected data on the prevalence of illicit drug and alcohol use, problems associated with alcohol and/or other drug use, and receipt of alcohol and/or other drug treatment, as well as demographic characteristics, general health status, mental health problems, health insurance status, and utilization of health services. The participation rate for the survey was 76% in 2005, 67% in 2006, and 74% in 2007. The NSDUH also imputes missing responses; we used data items including imputations.

##### Model Overview

Absenteeism (absent) was assessed as a function of age, race, educational attainment (Educ), marital status (married), has children under 18 (children), current year drug dependence (drug), having one of a list of medical conditions during the past 12 months (medcond), and measures of current year alcohol dependence and binge drinking within the last 30 days (alc).

$$\text{Absent} = f(\text{Age}, \text{race}, \text{Educ}, \text{married}, \text{children}, \text{drug}, \text{medcond}, \text{alc})$$

A poisson regression model was used because the number of days missed from work was reported in integers and followed a Poisson distribution.

### Study Variables

Below, we describe the primary variables in this analysis:

- **Absenteeism** – We added the number of days of work missed in the last 30 days as a result of illness or injury and the number of days of work missed in the last 30 days because the respondent did not feel like going to work to identify total days missed in the last 30 days. Individuals with missing response were not included in our analysis.
- **Current Alcohol or Drug Dependence** – The questionnaire was designed around DSM-IV clinical standards to allow potential diagnoses to be assigned respondents based on answers to specific sequences of questions on alcohol and drug experiences and symptoms and symptoms of mental disorders. These derived variables indicating dependence within the past 12 months were used in this study.
- **Binge Drinking in the Last 30 Days** – Binge drinking was defined as drinking five or more drinks on the same occasion on at least 1 day in the past 30 days *for both sexes*. An "occasion" refers to having the drinks at the same time or within a couple hours of each other. An indicator of such binge drinking was included on the NSDUH public use file and adopted for this study with one adjustment. Binge drinkers who met criteria for alcohol dependence were included in the alcohol dependent population. Data on the remaining non-dependent binge drinkers were analyzed separately from data on the alcohol dependent population – that is, the indicator variables for the non-dependent binge drinkers and the alcohol dependent population included in the model were mutually exclusive.
- **Medical Condition in the Past 12 Months** – The file includes indicators of whether a physician told the respondent they had one of the following health conditions within the last 12 months: anxiety disorder, asthma, bronchitis, depression, diabetes, heart disease, hepatitis, high blood pressure, HIV/AIDS, lung cancer, pancreatitis, pneumonia, sinusitis, sleep apnea, stroke, tinnitus, tuberculosis, or an ulcer(s). If the respondent indicated any of these conditions, they were considered to have a condition within the year. The conditions were not included individually in the model. (About 95% of the sample had 0 or 1 condition. When we modeled with 0, 1 or  $\geq 2$  conditions, the coefficients were of similar magnitude.) The NSDUH also includes an indicator for liver cirrhosis but this was *not* included in this indicator because of the causal relationship between alcohol consumption and liver cirrhosis.

### Results

The unadjusted analysis of differences in mean days absent by gender and drinking status (non-dependent binge drinker vs. alcohol dependent) are presented by alcohol consumption status in Table IV-7. The means indicate that on average those who were binge drinkers or who had current alcohol dependence tended to have higher absenteeism than those who were not dependent nor binge drinkers. These means, however, did not control for other differences in the characteristics of these three groups such as the age distribution.

Table IV-7: Means for Regression Variables by Alcohol Consumption Category

Variable	Male						Female					
	Neither		Non-dependent Binge Drinker		Alcohol Dependent		Neither		Non-dependent Binge Drinker		Alcohol Dependent	
	Mean	Standard Error	Mean	Standard Error	Mean	Standard Error	Mean	Standard Error	Mean	Standard Error	Mean	Standard Error
<b>Days Absent from Work</b>												
Total Days Missed	0.535	0.016	0.668	0.026	1.331	0.129	0.703	0.022	0.802	0.028	1.205	0.132
Days Missed to Illness	0.376	0.014	0.430	0.018	0.923	0.119	0.558	0.019	0.601	0.027	0.785	0.111
Days Missed Other	0.159	0.009	0.238	0.014	0.407	0.031	0.145	0.008	0.201	0.012	0.419	0.056
<b>Age Group<sup>1</sup></b>												
18-19	1.9%	0.1%	2.3%	0.1%	3.4%	0.4%	1.6%	0.1%	2.8%	0.2%	4.0%	0.5%
20-25	7.6%	0.2%	15.6%	0.3%	21.4%	0.9%	8.6%	0.2%	21.0%	0.6%	28.9%	1.8%
26-29	7.4%	0.2%	13.1%	0.4%	13.6%	1.1%	8.0%	0.3%	13.8%	0.7%	13.5%	1.7%
30-34	10.9%	0.3%	13.7%	0.5%	14.0%	1.5%	10.6%	0.3%	12.5%	0.6%	10.3%	1.5%
35-49	41.5%	0.6%	38.9%	0.7%	36.6%	1.7%	40.8%	0.6%	37.0%	0.9%	34.0%	2.3%
50-64	30.8%	0.6%	16.4%	0.7%	11.1%	1.6%	30.4%	0.6%	13.0%	1.0%	9.2%	1.8%
<b>Race (%)</b>												
Non-Hispanic White	66.6%	0.7%	71.0%	0.8%	68.3%	1.6%	65.4%	0.6%	73.5%	0.9%	75.1%	1.9%
Non-Hispanic Black	10.0%	0.4%	8.6%	0.4%	9.5%	1.1%	14.7%	0.4%	12.0%	0.7%	11.2%	1.4%
Hispanic	15.8%	0.5%	16.4%	0.6%	18.3%	1.3%	12.6%	0.4%	11.0%	0.5%	9.0%	1.1%
Other	7.6%	0.4%	4.0%	0.3%	3.8%	0.5%	7.3%	0.4%	3.5%	0.3%	4.8%	0.8%
<b>Highest Educational Attainment (%)</b>												
Less than 12 years	10.1%	0.4%	11.7%	0.5%	14.3%	1.1%	6.2%	0.2%	7.5%	0.5%	7.6%	1.3%
High School graduate	28.5%	0.5%	33.2%	0.7%	34.9%	1.7%	28.4%	0.5%	31.7%	0.9%	29.5%	2.7%
Some college	23.4%	0.5%	26.1%	0.6%	26.5%	1.4%	28.8%	0.5%	31.3%	0.9%	31.4%	2.0%
College graduate	34.3%	0.7%	26.4%	0.6%	21.8%	1.8%	34.6%	0.6%	28.8%	0.8%	30.8%	2.8%

Variable	Male						Female						
	Neither		Non-dependent Binge Drinker		Alcohol Dependent		Neither		Non-dependent Binge Drinker		Alcohol Dependent		
	Mean	Standard Error	Mean	Standard Error	Mean	Standard Error	Mean	Standard Error	Mean	Standard Error	Mean	Standard Error	
Other													
Married (%)	68.4%	0.6%	54.0%	0.6%	33.8%	1.9%	57.6%	0.6%	39.2%	1.0%	30.9%	2.4%	
Has child less than 18	43.9%	0.8%	39.7%	0.7%	30.7%	1.8%	41.3%	0.5%	38.3%	0.9%	32.3%	2.6%	
Drug Dependence Current Year (%)	0.8%	0.1%	2.5%	0.2%	12.2%	0.9%	0.7%	0.1%	2.1%	0.2%	11.0%	1.3%	
Indicated Medical Condition within Year	31.3%	0.6%	24.7%	0.7%	34.5%	1.4%	41.5%	0.6%	34.7%	0.9%	46.1%	2.7%	
Number of Observations	16,836		12,373		2,009		18,347		6,255		1,023		

Estimates based on analysis of the NSDUH 2005-2007.

1. Age categories were based on those available in NSDUH. NSDUH public use files include only categorical age as opposed to single years.



Multivariate regression results indicated a positive and significant increase in absenteeism for both men and women related to both binge drinking and alcohol dependence (Table IV-8). The increase was larger for those with current alcohol dependence.

**Table IV-8: Absenteeism Regression Results**

Variable	Male		Female	
	Coefficient Estimate	Standard Error	Coefficient Estimate	Standard Error
Intercept	-0.4476 **	0.0007	-0.5833 **	0.0008
<b>Alcohol Consumption</b>				
Binge Drinker	0.1034 **	0.0005	0.0631 **	0.0006
Alcohol Dependence - Current Year	0.6067 **	0.0008	0.3487 **	0.0013
<b>Age Group (Ref Group: 35-49)</b>				
18-19	0.3184 **	0.0013	0.3975 **	0.0015
20-25	0.2452 **	0.0007	0.2835 **	0.0008
26-29	0.3384 **	0.0007	0.1631 **	0.0009
30-34	0.1143 **	0.0007	0.1908 **	0.0008
50-64	-0.2188 **	0.0007	-0.2447 **	0.0007
<b>Race (Ref Group: White)</b>				
Non-Hispanic Black	0.2848 **	0.0007	0.4041 **	0.0006
Hispanic	-0.1004 **	0.0007	0.1403 **	0.0008
Other	0.1905 **	0.0009	0.1936 **	0.0010
<b>Highest Educational Attainment (Ref Group: HS Grad)</b>				
Less than 12 years	0.0257 **	0.0007	0.3370 **	0.0009
Some college	-0.1646 **	0.0006	-0.0194 **	0.0006
College graduate	-0.3458 **	0.0006	-0.2360 **	0.0007
<b>Other</b>				
Married	-0.3153 **	0.0006	-0.0277 **	0.0005
Has child less than 18	-0.0061 **	0.0006	-0.0643 **	0.0006
Drug Dependence Current Year	0.3888 **	0.0011	0.3192 **	0.0016
Indicated Medical Condition within Year	0.3322 **	0.0005	0.4580 **	0.0005
Number of Observations	31,218		25,625	

Estimates based on analysis of the NSDUH 2005-2007.

\*\* Statistically significant at the 99% confidence level.

In Tables IV-9A and IV-9B, we translate these increases in absenteeism per month into annual productivity losses related to binge drinking and current alcohol dependence respectively. Losses for increased absenteeism associated with binge drinking were added into our total estimate of productivity losses related to excessive alcohol consumption. Losses for increased absenteeism associated with current alcohol dependence were not added into this total because these losses were likely to overlap, at least partially, with reductions in earnings among individuals with alcohol dependence estimated in Section IV-B.2.

**Table IV-9A: Estimated Productivity Losses from Increased Absenteeism Resulting from Nondependent Binge Drinking, 2006**

Demographic Group	US Population <sup>1</sup>	Percent Working Fulltime	Prevalence of Nondependent Binge Drinking <sup>2</sup>	Mean Excess Days Lost per Year	Median Earnings per Day Adjusted for Fringe Benefits	Total Loss (in millions)
(1)	(2)	(3)	(4)	(5)	(6)	(2) X (3) X (4) X (5) X (6)
<b>Women</b>						
18-19	4,155,729	20.6%	26.5%	0.861	\$87.16	\$17.044
20-25	12,226,192	44.2%	33.0%	0.694	\$126.12	\$156.127
26-29	8,100,168	53.0%	26.8%	0.585	\$166.61	\$112.324
30-34	9,726,116	54.0%	20.3%	0.598	\$166.61	\$106.183
35-49	33,352,381	56.5%	16.5%	0.516	\$185.66	\$297.277
50-64	26,815,636	47.3%	8.7%	0.417	\$188.14	\$86.258
<b>Total - Women</b>	<b>94,376,222</b>					<b>\$775.213</b>
<b>Men</b>						
18-19	4,373,946	29.7%	36.7%	1.232	\$99.45	\$58.263
20-25	13,026,944	60.9%	47.9%	0.995	\$135.08	\$511.173
26-29	8,467,416	78.2%	45.8%	0.983	\$188.90	\$563.055
30-34	9,980,383	82.6%	38.4%	0.731	\$188.90	\$436.529
35-49	33,112,138	82.6%	32.3%	0.647	\$244.72	\$1,398.657
50-64	25,251,652	65.4%	22.0%	0.530	\$257.30	\$494.690
<b>Total - Men</b>	<b>94,212,479</b>					<b>\$3,462.367</b>
<b>Total - All</b>						<b>\$4,237.580</b>

<sup>1</sup> Estimated size of the U.S. population by age/ gender for 2006 was from the U.S. Census Bureau (18-19 age group calculated as 2/5 of the 15-19 Census age group).

<sup>2</sup> Prevalence of binge drinking was estimated based on NSDUH 2005-2007. Individuals who have been alcohol dependent within the last 12 months are excluded.

<sup>3</sup> The mean loss for each age group was estimated based on CPS estimated earnings by age/ gender 2006 - <http://www.bls.gov/cps/cpswom2006.pdf>. Accessed on March 10, 2010.

**Table IV-9B: Estimated Productivity Losses from Increased Absenteeism Resulting from Current Year Alcohol Dependence, 2006**

Demographic Group	US Population <sup>1</sup>	Percent Working Fulltime	Prevalence of Current Year Alcohol Dependence <sup>2</sup>	Mean Days Lost per Year	Median Earnings per Day Adjusted for Fringe Benefits	Total Loss (in millions)
(1)	(2)	(3)	(4)	(5)	(6)	(2) X (3) X (4) X (5) X (6)
<b>Women</b>						
18-19	4,155,729	20.6%	5.4%	5.516	\$87.16	\$22.401
20-25	12,226,192	44.2%	6.4%	4.443	\$126.12	\$193.394
26-29	8,100,168	53.0%	3.7%	3.746	\$166.61	\$98.664
30-34	9,726,116	54.0%	2.3%	3.833	\$166.61	\$78.763
35-49	33,352,381	56.5%	2.1%	3.302	\$185.66	\$244.849
50-64	26,815,636	47.3%	0.9%	2.672	\$188.14	\$54.675
<b>Total - Women</b>	<b>94,376,222</b>					<b>\$692.745</b>
<b>Men</b>						
18-19	4,373,946	29.7%	7.5%	9.436	\$99.45	\$90.769
20-25	13,026,944	60.9%	9.3%	7.624	\$135.08	\$758.560
26-29	8,467,416	78.2%	6.7%	7.530	\$188.90	\$630.247
30-34	9,980,383	82.6%	5.5%	5.596	\$188.90	\$482.153
35-49	33,112,138	82.6%	4.3%	4.955	\$244.72	\$1,421.899
50-64	25,251,652	65.4%	2.1%	4.058	\$257.30	\$363.521
<b>Total - Men</b>	<b>94,212,479</b>					<b>\$3,747.148</b>
<b>Total - All</b>						<b>\$4,439.893</b>

<sup>1</sup> Estimated size of the U.S. population by age/ gender for 2006 was from the U.S. Census Bureau (18-19 age group calculated as 2/5 of the 15-19 Census age group).  
<sup>2</sup> Prevalence of binge drinking was estimated based on NSDUH 2005-2007. Individuals who have been alcohol dependent within the last 12 months are excluded.  
<sup>3</sup> The mean loss for each age group was estimated based on CPS estimated earnings by age/ gender 2006 - <http://www.bls.gov/cps/cpswom2006.pdf>. Accessed on March 10, 2010.

### C. Losses While Institutionalized/Hospitalized

Workplace productivity losses for individuals who were hospitalized or institutionalized were estimated based on the number of days institutionalized or hospitalized times average compensation per day. The number of days institutionalized or hospitalized reflects days for two groups:

- *Specialty Facility Days* - Inpatient and residential treatment days for primary alcohol diagnoses in specialty treatment facility were summed in the 2006 N-SSATS.
- *General Hospital Days* - Inpatient days for primary alcohol diagnosis and fully or partially alcohol-attributable diagnosis were estimated from the HCUP for 2006. By condition, inpatient days were multiplied by the condition specific attribution factor from Appendix Table A-1 to estimate the alcohol attributable inpatient days for the condition. Then, the alcohol attributable days were summed across conditions.

For each alcohol attributable institutionalized or hospitalized day, the value of lost compensation per day was based on average annual earnings for 2006 published by the U.S. Bureau of Labor Statistics inflated to reflect the value of fringe benefits (Table IV-10).

**Table IV-10: Productivity Losses Due to Institutionalization/Hospitalization, 2006**

Type of Inpatient Day	Days Attributable to Alcohol (in thousands)	Mean Compensation per Day <sup>1</sup>	Total Costs (in millions \$)
Specialty Facility Days	17,331.521	\$106.56	\$1,846.847
Alcohol Attributable General Hospital Days for Conditions Fully or Partially Attributable to Alcohol	1,937.512	\$106.56	\$206.461
<b>Total</b>	<b>19,269.033</b>	<b>\$106.56</b>	<b>\$2,053.308</b>

<sup>1</sup> Mean compensation per day estimated based on census estimates of mean annual earnings adjusted to reflect the value of fringe benefits (\$38,787) averaged across workers and non-workers. Annual earnings were divided into 52 weeks and 7 days per week to estimate loss per day.

### D. Mortality

Alcohol-attributable mortality data by cause of death, age and gender was obtained from ARDI. Age and sex data were necessary because standard human capital valuations for mortality use average market wage and salary values by age and gender. We obtained from UC-SF year 2000 (most current) estimates of the net present value of the stream of future lifetime earnings by age and gender at a 3% and 5% discount rate and adjusted them to 2006 based on the CPI. Because OMB's discount rate for 2009 was 2.7% (17), we used the values with the 3% discount rate. An estimate using the 5% discount rate is provided in Appendix Table D-2.



**Table IV-11: Productivity Loss Due to Alcohol-attributable Mortality, 2006  
By Age and Gender  
3% Discount Rate**

Age/Gender Group	Number of Alcohol-attributable Deaths <sup>1</sup>		Net Present Value of Future Earnings <sup>2</sup>	Total Loss (in millions \$)		
	Acute	Chronic		Acute	Chronic	All
(1)	(2)	(3)	(4)	(2) X (4)	(3) X (4)	[(2) + (3)] X (4)
<b>Male</b>						
<1	44	95	\$1,208,197.46	\$53.161	\$114.779	\$167.939
1-4	79	0	\$1,271,188.68	\$100.424	\$0.000	\$100.424
5-9	60	0	\$1,389,939.51	\$83.396	\$0.000	\$83.396
10-14	95	0	\$1,534,465.17	\$145.774	\$0.000	\$145.774
15-19	2,336	0	\$1,683,150.43	\$3,931.839	\$0.000	\$3,931.839
20-24	4,683	90	\$1,776,052.68	\$8,317.255	\$159.845	\$8,477.099
25-29	3,669	168	\$1,764,551.41	\$6,474.139	\$296.445	\$6,770.584
20-34	3,093	299	\$1,661,611.31	\$5,139.364	\$496.822	\$5,636.186
35-39	2,939	799	\$1,492,449.95	\$4,386.310	\$1,192.468	\$5,578.778
40-44	3,439	1,967	\$1,282,771.90	\$4,411.453	\$2,523.212	\$6,934.665
45-49	3,236	3,189	\$1,038,232.97	\$3,359.722	\$3,310.925	\$6,670.647
50-54	2,655	4,054	\$774,972.88	\$2,057.553	\$3,141.740	\$5,199.293
55-59	1,709	3,750	\$507,678.44	\$867.622	\$1,903.794	\$2,771.417
60-64	1,205	2,880	\$278,359.02	\$335.423	\$801.674	\$1,137.097
65-69	776	2,151	\$139,651.90	\$108.370	\$300.391	\$408.761
70-74	818	1,822	\$65,810.34	\$53.833	\$119.906	\$173.739
75-79	959	1,611	\$27,254.63	\$26.137	\$43.907	\$70.044
80-84	1,033	1,280	\$12,245.85	\$12.650	\$15.675	\$28.325
85+	1,312	1,164	\$3,319.02	\$4.355	\$3.863	\$8.218
<b>Female</b>						
<1	34	55	\$893,816.19	\$30.390	\$49.160	\$79.550
1-4	60	0	\$940,111.61	\$56.407	\$0.000	\$56.407
5-9	50	0	\$1,027,706.92	\$51.385	\$0.000	\$51.385
10-14	64	1	\$1,134,354.73	\$72.599	\$1.134	\$73.733
15-19	602	0	\$1,231,545.36	\$741.390	\$0.000	\$741.390
20-24	953	21	\$1,270,464.00	\$1,210.752	\$26.680	\$1,237.432
25-29	802	56	\$1,218,790.24	\$977.470	\$68.252	\$1,045.722
20-34	842	129	\$1,112,298.14	\$936.555	\$143.486	\$1,080.041
35-39	981	346	\$974,761.75	\$956.241	\$337.268	\$1,293.509
40-44	1,246	813	\$814,499.12	\$1,014.866	\$662.188	\$1,677.054
45-49	1,161	1,250	\$640,578.73	\$743.712	\$800.723	\$1,544.435
50-54	897	1,279	\$459,397.46	\$412.080	\$587.569	\$999.649
55-59	602	1,181	\$285,471.22	\$171.854	\$337.142	\$508.995
60-64	446	1,010	\$150,112.39	\$66.950	\$151.614	\$218.564

Age/Gender Group	Number of Alcohol-attributable Deaths <sup>1</sup>		Net Present Value of Future Earnings <sup>2</sup>	Total Loss (in millions \$)		
	Acute	Chronic		Acute	Chronic	All
(1)	(2)	(3)	(4)	(2) X (4)	(3) X (4)	[(2) + (3)] X (4)
65-69	348	912	\$69,664.39	\$24.243	\$63.534	\$87.777
70-74	412	921	\$30,821.85	\$12.699	\$28.387	\$41.086
75-79	587	906	\$12,982.24	\$7.621	\$11.762	\$19.382
80-84	815	902	\$5,304.59	\$4.323	\$4.785	\$9.108
85+	1,783	1,254	\$910.83	\$1.624	\$1.142	\$2.766
<b>Total</b>	<b>46,825</b>	<b>36,355</b>		<b>\$47,361.939</b>	<b>\$17,700.271</b>	<b>\$65,062.211</b>

<sup>1</sup> ARDI-based mortality estimates, November 3, 2009.

<sup>2</sup> Wendy Max, Dorothy Rice, Hai-Yen Sung, Martha Michel (2004) "Valuing Human Life: Estimating the PVLE, 2000." posted at the eScholarship Repository, University of California <http://repositories.cdlib.org/ctcre/esarm/PVLE2000>. Accessed on March 10, 2010. The inflation calculator at <http://data.bls.gov/cgi-bin/cpicalc.pl> was used to inflate the 2000 values 17.07% to obtain estimates for 2006.

## E. Crime-Related Losses

### 1. Crime Victim Productivity Losses

Estimates of the number of crime victims in this analysis were drawn from The National Crime Victimization Survey Statistical Tables, 2006. Estimates of loss per victim were based on analysis of the NCVS 2006 which asked crime victims to report work days lost for themselves or family members associated with injuries, time spent cooperating with police and testifying in court, and time spent replacing stolen or damaged property. These responses were used to develop estimates of the loss per victim in the following steps:

**Step 1: Assign Victims to Crime Categories** – Respondents were assigned to one of nine crime categories (the eight categories listed in Table IV-12 plus an 'other' category) based on the type of crime code in the NCVS 2006.

**Step 2: Determine Share with Loss Time from Work** – The weighted share of respondents in each category who reported any lost days from work was calculated.

**Step 3: Estimate Number of Days Lost per Victim with Lost Days** – Work days lost as a result of injuries, time spent cooperating with police and testifying in court, and time spent replacing stolen or damaged property for the victim or family members were summed to calculate total days lost. The highest number of days lost to injury was 105 and it was not truncated. For non-violent crimes, days lost for other activities such as police reports, court appearances and replacing stolen goods were truncated at the 95th percentile (90 days) as we felt reported values of 150 and 200 days were outliers. Similarly days lost to family members for violent offense were truncated at the 95th percentile (90 days). Weighted mean total work days lost were then estimated across all reporting respondents in each crime category.

**Step 4: Estimate Work Days Lost per Victim** – The share of victims who reported work days lost from step 2 was multiplied times the estimated mean number of days lost among victims with days lost from step 3 to estimate the mean work days lost per victim reported in Table IV-12 below.

Each work day lost was valued based on mean annual earnings for men and women adjusted to reflect the value of fringe benefits (\$38,787) and averaged across workers and non-workers. Annual earnings were divided into 52 weeks and 5 work days per week to estimate loss per workday. We combined the data to estimate victim losses from lost work days for alcohol-attributable crime (Table IV-12).

**Table IV-12: Productivity Losses for Victims of Crime, 2006**

Type of Crime	Number of Victims <sup>1</sup>	AAF	Mean Number of Work Days Lost <sup>2</sup>	Estimated Loss per Day <sup>3</sup>	Total Loss (in millions \$)
(1)	(2)	(3)	(4)	(5)	(2) X (3) X (4) X (5)
<b>Violent Crime</b>					
Forcible Rape	116,600	31.1%	3.05	\$149	\$16.478
Other Sex Offenses	144,340	18.8%	0.60	\$149	\$2.437
Aggravated Assault	1,344,280	22.6%	6.25	\$149	\$282.857
Other Assault	3,776,550	13.8%	6.32	\$149	\$490.917
<b>Property Crime</b>					
Robbery	712,610	18.7%	4.33	\$149	\$85.951
Burglary	3,560,920	21.9%	1.79	\$149	\$207.698
Larceny - theft	14,535,790	16.1%	2.69	\$149	\$938.289
Motor vehicle theft	992,250	23.1%	2.00	\$149	\$68.259
	<b>25,183,340</b>				<b>\$2,092.886</b>

<sup>1</sup> National Crime Victimization Survey Statistical Tables, 2006 Table 1.

<sup>2</sup> Total work days lost for all reasons (e.g., injury, replace stolen item, cooperate with police, appear in court) as a result of victimization as reported in the National Crime Victimization Survey, 2006.

<sup>3</sup> Mean compensation per day estimated based on census estimates of mean annual earnings adjusted to reflect the value of fringe benefits (\$38,787) averaged across workers and non-workers. Annual earnings were divided into 52 weeks and 5 work days per week to estimate loss per day.

## 2. Losses Related to Incarceration

The overall number of persons incarcerated in state and federal prisons and in local jails at the end of 2006 was obtained from the Sourcebook of Criminal Justice Statistics 2008 (18). The share of inmates by offense and gender was obtained from the Jail Inmate Survey, 2002 and the Survey of State and Federal Prison Inmates, 2004 (Our analyses used allocated variables from the jail survey public use file for age (v5) and gender (v14)). The counts of inmates by offense were multiplied by the AAF for each offense and incarceration setting (e.g., prison or jail) to determine the number of inmates attributable to excessive alcohol consumption. Then, this number of inmates was multiplied by estimated annual compensation for a minimum wage worker in 2006 (19) adjusted to reflect the value of fringe benefits. The federal minimum wage in 2006 was \$5.15 per hour.

Table IV-13: Productivity Losses for Incarcerations Attributable to Excessive Alcohol Consumption, 2006

Type of Offense	Number of Persons Incarcerated, 2006						AAF (See Table II-4)		Compensation Costs Based on Minimum Wage <sup>3</sup>		Total Costs (in millions)		Total Cost (in millions)
	Federal & State Prisons <sup>1</sup>		Local Jails <sup>2</sup>		AAF		Compensation		Total Costs				
	Male	Female	Male	Female	Prison	Jail	Males	Females	Males	Females			
<b>Violent Crime</b>													
Murder	152,373	10,091	18,109	1,584	0.470	0.470	\$15,306	\$15,306	\$1,226.447	\$83.997	\$1,310.443		
Forcible Rape	46,710	299	4,665	46	0.283	0.311	\$15,306	\$15,306	\$224.652	\$1.517	\$226.169		
Other Sex Offenses	93,048	1,057	20,679	793	0.215	0.188	\$15,306	\$15,306	\$365.842	\$5.759	\$371.602		
Aggravated Assault	128,781	6,996	82,648	7,134	0.294	0.226	\$15,306	\$15,306	\$866.231	\$56.208	\$922.439		
Other Assault	7,538	1,415	8,174	1,732	0.188	0.138	\$15,306	\$15,306	\$38.886	\$7.718	\$46.604		
<b>Robbery</b>	174,054	6,316	39,352	3,176	0.265	0.187	\$15,306	\$15,306	\$819.126	\$34.731	\$853.857		
Burglary	103,831	3,450	48,984	2,546	0.272	0.219	\$15,306	\$15,306	\$596.793	\$22.908	\$619.702		
Larceny - theft	57,241	8,347	55,758	10,575	0.199	0.161	\$15,306	\$15,306	\$311.864	\$51.499	\$363.364		
Motor vehicle theft	21,634	1,056	13,831	1,251	0.222	0.231	\$15,306	\$15,306	\$122.259	\$8.006	\$130.265		
Vandalism	3,128	373	4,598	344	0.268	0.192	\$15,306	\$15,306	\$26.386	\$2.544	\$28.930		
<b>Driving Under The Influence</b>	32,791	1,797	44,511	4,175	1.000	1.000	\$15,306	\$15,306	\$1,183.205	\$91.419	\$1,274.624		
Public Drunkenness	1,626	51	7,207	751	1.000	1.000	\$15,306	\$15,306	\$135.206	\$12.277	\$147.482		
Liquor laws	0	26	368	0	1.000	1.000	\$15,306	\$15,306	\$5.627	\$0.399	\$6.025		
<b>Offenses Against Family &amp; Children</b>	3,778	520	11,776	1,462	0.125	0.095	\$15,306	\$15,306	\$24.295	\$3.113	\$27.409		
All Other	557,905	59,277	316,347	53,242	N/A	N/A			\$0.000	\$0.000	\$0.000		
<b>Total</b>	1,384,438	101,072	677,007	88,812					\$5,946.819	\$382.096	\$6,328.915		

<sup>1</sup> Total number of federal and state incarcerated persons obtained from Sourcebook of Criminal Justice Statistics Online, Table 6.13.08  
<http://www.albany.edu/sourcebook/csv/t6132008.csv>. Accessed on March 10, 2010. The share of prisoners by offense was based on analysis of the Survey of

Inmates in State and Federal Correctional Facilities, 2004.

<sup>2</sup> Total number of persons incarcerated in jail obtained from Sourcebook of Criminal Justice Statistics Online, Table 6.13.08  
<http://www.albany.edu/sourcebook/csv/t6132008.csv>. Accessed on March 10, 2010. The share of prisoners by offense based on analysis of the Survey of Jail

Inmates, 2002

<sup>3</sup> Compensation estimated based on minimum wage of \$5.15 per hour in 2006 adjusted to reflect the value of fringe benefits.



## F. Lost Earnings Among Persons With Fetal Alcohol Syndrome

The productivity loss estimates for 2004 from the Lewin FAS study (10) were trended to 2006 based on a 1.9% increase in the U.S. population and a 6.4% increase in the employment cost index (ECI) for U.S. civilian employees (20) between 2004 and 2006. The base estimate for FAS prevalence was 1/1000. Appendix Table C-2 shows loss estimates for other prevalence estimates.

**Table IV-14: Lost Earnings Among Persons with Fetal Alcohol Syndrome by Age Group, 2006**

Age	FAS Population (1/1000 prevalence)	Productivity Loss (millions \$)
16-19	21,118	\$96.358
20-24	21,363	\$140.580
25-34	40,781	\$409.276
35-44	44,934	\$543.244
45-54	42,397	\$526.444
55-64	29,623	\$337.956
<b>Total, Ages 16-64</b>	<b>200,215</b>	<b>\$2,053.748</b>

## V. Other Costs

In the first section below, we provide a summary of other cost estimate components. Then, in the sections which follow, we provide detail on the calculation of these estimates.

### A. Summary

Other costs related to excessive alcohol consumption included crime victim property losses, criminal justice system costs, costs related to motor vehicle crashes, costs from fire-damage, and special education costs for FAS. Overall, these costs amounted to \$37.6 billion (Table V-1). The two largest categories of other costs were criminal justice system costs (55.7%) and motor vehicle crashes (36.4%).

**Table V-1  
Other Costs of Excessive Alcohol Consumption, 2006  
(in millions of \$)**

Cost Category	Total Cost
Crime Related Costs	\$35,675.662
Crime Victim Property Damage Costs	\$439.766
Criminal Justice System	\$20,972.690
Motor Vehicle Crashes	\$13,718.406
Fire Losses	\$2,137.300
FAS Special Education Costs	\$368.768
<b>Total, Other Effects</b>	<b>\$37,636.930</b>

## B. Victim Costs (Excluding Medical and Productivity Costs)

The estimates of the number of crime victims were drawn from The National Crime Victimization Survey Statistical Tables, 2006. Estimates of loss per victim were based on analysis of the NCVS 2006 which asks crime victims to report whether they had property stolen or damaged. Those who had property stolen are asked to report the value of the stolen property and whether any of the property was recovered. Those who had property damaged were asked to estimate the cost to repair the damage. We developed estimates of the loss per victim in the following steps:

*Step 1: Assign Victims to Crime Categories* – Respondents were assigned to one of nine crime categories (the eight categories listed in Table V-2 plus an ‘other’ category) based on the type of crime code in the NCVS 2006.

*Step 2: Determine Share with Loss or Damage* – The weighted share of respondents in each crime category who had any property damaged or stolen was calculated.

*Step 3: Estimate Loss per Victim* – Variables for value of cash stolen, value of property stolen, cost to repair damaged property, amount of cash recovered, and value of property recovered were used to calculate each victim’s total property loss and loss related to property damaged. Because reported losses and recovery amounts appeared consistent with the type of crime, no truncation or adjustment of reported losses was made. Respondents who reported they had property stolen, recovered, or damaged, but did not report value amounts were not included. Weighted mean total property loss and property damage repair cost were estimated across reporting respondents in each crime category.

*Step 4: Estimate loss per Victim* – The share of victims with a loss or damage from step 2 was multiplied times the estimated mean loss from step 3 to estimate the total property loss per victim and cost to repair property damage per victim (Tables V-2 and V-3 below).

These data were combined with estimates of the number of victimizations and the share attributable to alcohol to estimate victim property losses for alcohol-attributable crime (Table V-2).

Table V-2: Crime Victim Property Loss, 2006

Type of Crime	Number of Victims <sup>1</sup>	Property Loss per Victim <sup>2</sup>	AAF	Total Alcohol-attributable Expenditures (in millions \$)
(1)	(2)	(3)	(4)	(2) X (3) X (4)
<b>Violent Crime</b>				
Forcible Rape	116,600	\$112.76	31.1%	\$4.089
Other Sex Offenses	144,340	\$0.00	18.8%	\$0.000
Aggravated Assault	1,344,280	\$23.41	22.6%	\$7.113
Other Assault	3,776,550	\$34.54	13.8%	\$18.000
<b>Property Crime</b>				
Robbery	712,610	\$608.24	18.7%	\$81.053
Burglary	3,560,920	\$1,679.82	21.9%	\$1,309.995
Larceny - theft	14,535,790	\$406.54	16.1%	\$951.404
Motor vehicle theft	992,250	\$5,502.71	23.1%	\$1,261.275
<b>Total</b>	<b>25,183,340</b>			<b>\$3,632.929</b>

<sup>1</sup> National Crime Victimization Survey Statistical Tables, 2006 Table 1.

<sup>2</sup> Estimated based on the National Crime Victim Survey, 2006.

Overall victim property losses reflect the societal redistribution associated with crime. However, the only societal loss associated with these crimes is property damage because it is assumed that the value of stolen goods is transferred to others. Thus, we estimated property damage separately (Table V-3).

Table V-3: Crime Victim Property Damage, 2006

Type of Crime	Number of Victims <sup>1</sup>	Property Damage per Victim <sup>2</sup>	AAF	Total Alcohol-attributable Expenditures (in Millions \$)
(1)	(2)	(3)	(4)	(2) X (3) X (4)
<b>Violent Crime</b>				
Forcible Rape	116,600	\$24.64	31.1%	\$0.893
Other Sex Offenses	144,340	\$0.00	18.8%	\$0.000
Aggravated Assault	1,344,280	\$23.41	22.6%	\$7.113
Other Assault	3,776,550	\$34.54	13.8%	\$18.000
<b>Property Crime</b>				
Robbery	712,610	\$51.85	18.7%	\$6.910
Burglary	3,560,920	\$130.89	21.9%	\$102.070
Larceny - theft	14,535,790	\$81.58	16.1%	\$190.916
Motor vehicle theft	992,250	\$496.77	23.1%	\$113.865
<b>Total</b>	<b>25,183,340</b>			<b>\$439.766</b>

<sup>1</sup> National Crime Victimization Survey Statistical Tables, 2006 Table 1.

<sup>2</sup> Estimated based on the National Crime Victim Survey, 2006.



## C. Criminal Justice System Costs

Criminal justice system costs included costs for police protection, the court system, and correctional institutions. National estimates of criminal justice system expenditures are published annually by the Bureau of Justice Statistics. The most recent year of data available was for 2006 (21). Incarceration costs were estimated based on the share of inmates attributable to alcohol.

### 1. Correctional Costs and Private Legal Costs

The share of correctional costs attributable to alcohol was estimated based on the number of inmates in each setting for each offense and the AAF for each offense and setting (Table II-4).

Since private legal costs were not included in the BJS estimates of legal and adjudication costs, we obtained estimates of private legal costs from the U.S. Census Bureau. These costs were attributed to alcohol-related crime based on the percentage of lawyers who practice criminal law in the private sector (1.8%) and the share of arrests attributable to alcohol (5.3%). The percentage of lawyers practicing criminal law was obtained from the American Bar Association based Martindale-Hubbell survey data (personal communication, K. Gennings, 8/20/2009).

**Table V-4: Criminal Justice System Expenditures Attributable to Alcohol, 2006  
(in millions of \$)**

Type of Cost	Total Cost (in millions \$)	Share Attributable to Alcohol	Total Alcohol- attributable Cost (in millions \$)
<b>Public Expenditures</b>			
Federal Corrections <sup>2</sup>	\$6,158	0.049	\$301.101
State Corrections <sup>1</sup>	\$40,413	0.212	\$8,549.280
Local Corrections <sup>1</sup>	\$22,176	0.169	\$3,737.065
<b>Private Expenditures</b>			
Private Legal Defense <sup>3</sup>	\$236,166	0.001	\$229.381

<sup>1</sup> Direct expenditures for state and local justice system activities from the Sourcebook of Criminal Justice Statistics, 2006, Table 1.6 <http://www.albany.edu/sourcebook/pdf/t162006.pdf>. Accessed on March 10, 2010.

<sup>2</sup> Direct expenditures for federal corrections calculated based on total expenditures for all levels of government from the Sourcebook of Criminal Justice Statistics, 2006, Table 1.2, <http://www.albany.edu/sourcebook/pdf/t122006.pdf> less the direct expenditures of the state and local governments. Duplicative expenditures are excluded from total expenditures.

<sup>3</sup> Census Bureau Service Annual Survey <http://www2.census.gov/services/sas/data/Historical/sas-06.pdf>. (page 96), Accessed on March 10, 2010.

### 2. Government Expenditures for Police Protection and Legal and Adjudication Costs

In this section, we estimate costs for violent and property related crimes first. Then, we develop estimates for alcohol related costs. These calculations are presented separately because of differences in methods.



**a. Violent and Property Crime-Related Costs (Table V-5A)**

The share of state and local police protection and legal and adjudication costs attributable to excessive alcohol consumption as a result of violent or property crimes was estimated based on the share of arrests attributable to alcohol (5.3%), which was calculated based on the number of arrests by offense and the share of each type of arrest attributable to alcohol (Appendix E, Table E-1). Equal weight was given to each arrest regardless of offense as was done in previous research.

**Table V-5A: Criminal Justice System Expenditures Attributable to Alcohol, 2006  
Violent and Property Crimes  
(in millions of \$)**

Type of Cost	Total Cost (in millions of \$)	Share Attributable to Alcohol	Total Alcohol- attributable Cost (in millions of \$)
<b>Public Expenditures</b>			
Police Protection <sup>1</sup>	\$78,834	0.053	\$4,178.195
Legal and Adjudication <sup>1</sup>	\$36,823	0.053	\$1,951.620
<b>Total</b>			<b>\$6,129.816</b>

<sup>1</sup> Direct expenditures for state and local justice system activities from the Sourcebook of Criminal Justice Statistics, 2006, Table 1.6 <http://www.albany.edu/sourcebook/pdf/t162006.pdf>. Accessed on March 10, 2010.

**b. Alcohol Crime Costs (Table V-5B)**

Cost estimates for alcohol crimes were based on the number of arrests times the estimated average police and legal adjudication costs per arrest. Number of arrests by age and type of crime were available from the Sourcebook of Criminal Justice Statistics for 2006. A literature search was conducted to identify recent studies of average police and legal adjudication costs per arrest. The most recent estimates identified for police protection costs per arrest were developed by Kenkel (22) who used data on enforcement cost per arrest from the National Research Council (23) and then trended that data to estimate an enforcement cost per speeding ticket in 1985 of \$64. We further trended that estimate to 2006 based on the CPI to yield an estimate of \$119.91 per arrest for police protection. For legal and adjudication costs the most recent estimates available was found in Kenkel who cited data developed by Weller (24) that put the court costs for a drunk driving case resolved with a guilty plea at \$250 in 1975 dollars. Noting that the vast majority of drunken driving cases were resolved by a guilty plea, Kenkel adjusted that estimate for inflation to \$500 in 1985 dollars and we further inflated this estimate to 2006 dollars based on the CPI to produce an estimate of \$936.80 per arrest for legal and adjudication costs.

**Table V-5B: Criminal Justice System Expenditures Attributable to Alcohol, 2006  
Alcohol-Specific Crimes  
(in millions of dollars)**

Criminal Justice System Component	Number of Arrests <sup>1</sup>	Cost per Arrest	Total Alcohol-attributable Cost (in millions \$)
<b>Police Protection</b>			
Driving Under The Influence	1,038,633	\$119.91	\$124.543
Public Drunkenness	409,490	\$119.91	\$49.102
Liquor laws	469,186	\$119.91	\$56.260
<b>Total</b>			<b>\$229.906</b>
<b>Legal and Adjudication</b>			
Driving Under The Influence	1,038,633	\$936.80	\$972.994
Public Drunkenness	409,490	\$936.80	\$383.611
Liquor laws	469,186	\$936.80	\$439.535
<b>Total</b>			<b>\$1,796.141</b>

<sup>1</sup> Number of arrests by age and type of crime are based on Lewin analysis of Table 4.7 from the Sourcebook of Criminal Justice Statistics Online, 2006 <http://www.albany.edu/sourcebook/csv/t472006.csv>. Accessed on March 10, 2010.

### 3. Summary

Table V-6 summarizes the total criminal justice system expenditures derived in Tables V-4, V-5A and V-5B. Overall, \$21.0 billion in criminal justice system expenditures were attributable to alcohol. The vast majority of this cost (76.8%) was related to offenses which would not normally be thought of as alcohol-attributable (e.g., motor vehicle theft) as opposed to obviously alcohol-attributable crimes like driving under the influence.

**Table V-6: Criminal Justice System Expenditures Attributable to Alcohol, 2006**  
(in millions of dollars)

Criminal Justice System Component	Total Alcohol-Attributable Cost (in millions \$)
<b>Public Expenditures</b>	
Police Protection	\$4,408.101
Legal and Adjudication	\$3,747.761
Corrections	\$12,587.446
<b>Private Expenditures</b>	
Private Legal Defense	\$229.381
<b>Total</b>	<b>\$20,972.690</b>

#### D. Motor Vehicle Crashes (Excluding Medical and Productivity Losses)

The economic cost of alcohol-related motor vehicle crashes in 2000 was drawn from U.S. National Highway Traffic Safety Administration (NHTSA) Report, "The Economic Impact of Motor Vehicle Crashes, 2000" (25). This report provided the number of alcohol involved crashes and unit costs by type of cost (e.g., health care costs, productivity losses) for these crashes by the level of injury in the crash (e.g., property damage only, critical injuries). Using Table 10 on page 38 of this report, we noted that 323,003 (6.1%) of a total of 5,267,467 non-fatal injuries were associated with a BAC > .10. This figure formed the basis of the AAF for non-fatal motor vehicle traffic injuries (Table II-1). Appendix Table F-1 displays the calculation of alcohol-attributable costs for motor-vehicle crashes in 2000.

Results for 2000 were trended forward to 2006. The price trend was based on the CPI for all goods and services. The alcohol-involved crash trend was based on trends in fatal motor vehicle crashes with at least one driver having a BAC greater than or equal to 0.08 (Table V-7).

**Table V-7: Trends in Price and Alcohol-Involvement in Crashes, 2000-2006**

Trend	2000	2001	2002	2003	2004	2005	2006	Average Annual Trend
CPI All Goods <sup>1</sup>	172.2	177.1	179.9	184.0	188.9	195.3	201.6	1.027
Number of Fatal Crashes with BAC ≥ .08 <sup>2</sup>	11,787	11,780	11,985	11,650	11,668	12,200	12,150	1.005

<sup>1</sup> <ftp://ftp.bls.gov/pub/special.requests/cpi/cpi.ai.txt>. Accessed on April 5, 2010.

<sup>2</sup> <http://www-fars.nhtsa.dot.gov/Crashes/CrashesAlcohol.aspx>. Accessed on March 10, 2010.

Costs exceeded \$13.7 billion (Table V-8). Legal costs represented legal fees and court costs associated with civil litigation from motor vehicle crashes (25) and do not overlap with the legal defense costs associated with criminal charges for driving under the influence of alcohol (Table V-5). Health care and productivity costs related to motor-vehicle crashes are not presented here because these costs overlap with health and productivity losses associated with injuries, which are presented



elsewhere. Health insurance related administration costs were excluded from the estimate of insurance administration costs (see page 78 reference 25) in Table V-8. Property damage included the value of vehicles, cargo, roadways and other items damaged in traffic crashes.

**Table V-8: Alcohol-Attributable Motor-Vehicle Crash Costs, 2006**

Component Costs	2000 Costs <sup>1</sup>	Trends, 2000-2006		Total Economic Cost Attributable to Alcohol (in millions \$)
		Price	Number of Fatal Crashes with BAC=>.08	
(1)	(2)	(3)	(4)	(5)
Insurance Administration	\$1,925.060	1.171	1.031	\$2,323.136
Legal Costs	\$2,702.038	1.171	1.031	\$3,260.782
Travel Delay	\$2,125.318	1.171	1.031	\$2,564.804
Property Damage	\$4,615.303	1.171	1.031	\$5,569.684
<b>Total</b>	<b>\$11,367.718</b>	<b>1.171</b>	<b>1.031</b>	<b>\$13,718.406</b>

<sup>1</sup> From Appendix Table F-1.

## E. Fire Damage

We used U.S. Census Bureau estimates of national fire-related losses in 2006 (26) and estimates of state and local government expenditures for fire protection services (the most recent estimate available was for 2005)(27). While there is ample evidence that alcohol intoxication is a cause of over 40 percent of fire-related deaths, the link between alcohol and all fire-related property damage is less clear. A recent study by the National Fire Protection Association (28) estimated that five percent of overall property damage caused by fires was a result of fires where alcohol use contributed to the ignition. Thus, we attributed five percent of fire property loss and fire protection services to alcohol (Table V-9).

**Table V-9: Alcohol-attributable Fire Losses, 2006  
(in millions of dollars)**

Type of Cost	Total Economic Cost (in millions \$) <sup>1</sup>	Share Attributable to Alcohol Misuse	Total Cost (in millions \$)
Fire Property Loss	\$11,307	5.0%	\$565.350
Fire Protection Services	\$31,439	5.0%	\$1,571.950
<b>Total</b>	<b>\$42,746</b>	<b>5.0%</b>	<b>\$2,137.300</b>

<sup>1</sup> [http://www.census.gov/compendia/statab/cats/law\\_enforcement\\_courts\\_prisons/fire\\_losses.html](http://www.census.gov/compendia/statab/cats/law_enforcement_courts_prisons/fire_losses.html). Accessed on March 10, 2010.

## F. Fetal Alcohol Syndrome

We used the Lewin Group's recently conducted study to ascertain special education costs related to FAS and trended the 2004 estimate to 2006 based on increases in the U.S. population and the consumer price index for all goods and services. Appendix Table C-3 shows the effect of varying prevalence on these costs.



**Table V-10: National Annual Direct Special Education Costs of FAS  
by Age Group, 2006  
(in millions)**

Age Group	Annual Expected Cost of Services	FAS Population	National Annual Cost (millions \$)
<18	\$5,520.45	62,556	\$345.337
18-77	\$113.28	206,835	\$23.430
<b>Total, Ages 18-77</b>	<b>\$1,368.89</b>	<b>269,391</b>	<b>\$368.768</b>

## VI. Summary of Results

In this section, we summarize the component costs from the above analyses into classifications that are of interest to policymakers.

### A. Summary of Costs

The total estimated cost of excessive alcohol consumption in 2006 was \$223.5 billion (Table VI-1). Of the total cost, 72.2% came from lost productivity, 11.0% from health care costs, 9.4% from criminal justice system, and 7.5% from other effects.

**Table VI-1: Total Economic Costs of Excessive Alcohol Consumption in the United States, 2006 (in millions)**

Cost Category	Total Cost
<b>Health Care Costs</b>	
Alcohol Abuse and Dependence	\$10,668.457
Primary Diagnoses Attributable to Alcohol	\$8,526.822
Inpatient Hospital	\$5,115.568
Physician Office and Hospital Ambulatory Care	\$1,195.946
Nursing Home Care	\$1,002.888
Retail Pharmacy and Other Health Professional	\$1,212.420
Fetal Alcohol Syndrome	\$2,538.004
Other Health System Costs	\$2,822.308
Prevention and Research	\$1,207.120
Training	\$29.527
Health Insurance Administration	\$1,585.660
<b>Total, Health Care Costs</b>	<b>\$24,555.591</b>
<b>Productivity Losses</b>	
Impaired Productivity	\$83,695.036
Traditional Earnings	\$74,101.827
Household Productivity	\$5,355.629
Absenteeism	\$4,237.580
Institutionalization/Hospitalization	\$2,053.308
Mortality	\$65,062.211
Incarcerations	\$6,328.915
Victims of Crime	\$2,092.886
Fetal Alcohol Syndrome	\$2,053.748
<b>Total, Productivity Losses</b>	<b>\$161,286.103</b>
<b>Other Effects on Society</b>	
Crime Victim Property Damage	\$439.766
Criminal Justice System	\$20,972.690
Motor Vehicle Crashes	\$13,718.406
Fire Losses	\$2,137.300
FAS Special Education	\$368.768
<b>Total, Other Effects</b>	<b>\$37,636.930</b>
<b>Total</b>	<b>\$223,478.624</b>

## B. Crime-Related Costs

In this section, we aggregate all crime-related costs. Crime-related costs are included in other sections of this report (e.g., health care costs, productivity losses, and other effects on society). Therefore, the total crime-related costs cannot be added to the costs reported in these other sections. However, we have aggregated these costs together here to show the total cost of alcohol-attributable crime across all the cost categories that are examined in this analysis.

**Table VI-2: Total Crime-Related Costs of Excessive Alcohol Consumption in the United States, 2006 (in millions)**

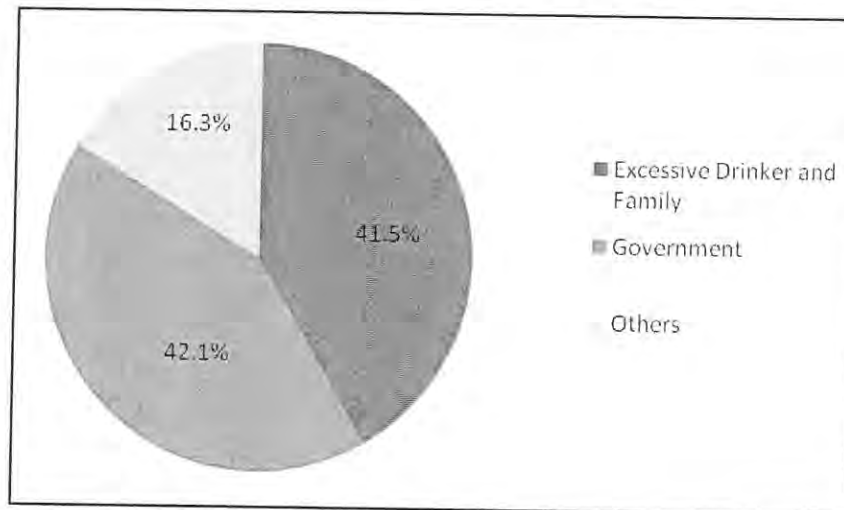
Type of Cost	Total Cost (in millions)
<b>Victim Costs</b>	
Medical Costs	\$295.633
Lost Productivity	\$2,092.886
Property Damage	\$439.766
Homicide (Premature Death)	\$11,050.851
<b>Criminal Justice System Costs</b>	
Police Protection	\$4,408.101
Legal and Adjudication Costs	\$3,747.761
Federal Corrections	\$301.101
State Corrections	\$8,549.280
Local Corrections	\$3,737.065
Private Legal Defense	\$229.381
Productivity Loss for Incarcerated Offenders	\$6,328.915
<b>Motor Vehicle Crash Costs</b>	
Motor Vehicle Crash Costs <sup>1</sup>	\$32,146.230
<b>Total Crime-Related Costs</b>	<b>\$73,326.971</b>

<sup>1</sup> Motor vehicle crash costs (in millions) include: inpatient hospital (\$479.39), ambulatory medical care (\$139.46), retail pharmacy and other health professional (\$115.02), health insurance administration (\$60.23), productivity losses related to hospitalization (\$11.90) and premature mortality (\$17,621.83), and other costs such as insurance administration, legal costs, travel delays, and property damage (\$13,718.41).

## C. Who Bears the Burden of Costs?

Costs related to excessive alcohol consumption may be borne by those who excessively drink and their families. However, many of these costs are borne by government, private health insurers, employers, and crime victims (Table VI-3). A full assessment of the cost borne by employers was beyond the scope of this study. Many of the costs may be fully or partially borne by employers, e.g., lost productivity from absenteeism or from days an employee was institutionalized. Since employers often provide health and other insurance to employees, these costs may be borne by employers through increased premiums. Costs related to motor vehicle crashes may be borne by employers when business vehicles are involved. The death of an employee necessitates the recruitment, hiring, and training of new workers.

Because a full assessment of employer costs was beyond the scope of this study, we focused on the sources who directly bore the costs and grouped payers into 1) government, 2) excessive drinkers and their families, and 3) others (including private insurance, crime victims and others). The main payer for excessive alcohol consumption was government (42.1% of costs), followed by excessive drinkers and their families (41.5%) and then others in society (16.3%).



### 1. Health System Direct Costs

Health system direct costs were divided by source of payment. For alcohol abuse and dependence treatment this distribution appears in Table III-2. For other health treatment services - including inpatient care, ambulatory care, nursing home care, retail pharmacy, non-durable medical equipment, other professional services, and fetal alcohol syndrome - the allocation of expenditures by source of payment is displayed as part of the calculation of health insurance administration costs in Table III-14 in Section III-G. These distributions were used to assign medical costs to a burden category. This allocation was straightforward with the exception of Medicaid funding which was allocated between federal (56.6%) and state (43.4%) government based on the allocation of Medicaid spending in the NHEA for 2006.

The method for allocating the burden of other health system costs is described below:

- *Research and Prevention* – Costs related to research and prevention were borne by the government. The distribution between federal and state and local government is presented in Table III-12.
- *Training* – Expenditures to train alcohol treatment professionals would be redirected to other sectors of the economy if the need for these professionals diminished. Thus, we allocated these resources to government based on the governments' share of net national product and the remainder to "other" members of society who may have benefited from re-directing these resources.
- *Health Insurance Administration* – The cost of health insurance administration was distributed as shown in Table III-2 for direct alcohol abuse and dependence treatment and Table III-14 for the medical consequences of alcohol. The exception was health



insurance administration associated with FAS. Because the payment source distribution was unknown for FAS, we allocated expenditures to a payment source based on the national distribution of health expenditures in the NHEA for 2006.

Overall, these estimates indicated that the excessive drinker and their household bear a very small share (10.3%) of the health-related expenses for excessive alcohol consumption. Government paid the largest share (60.9%) of the health expenses related to excessive alcohol consumption. The government burden for excessive alcohol consumption is somewhat larger than its role in paying for health care expenses nationally. Based on the 2006 NHEA, federal, state and local governments paid 46.1% of national health expenditures. Private health insurance also paid a substantial share (22.4%) of health care costs for excessive alcohol consumption. The remaining costs (6.4%) were paid by other sources.

## 2. Productivity Losses

We divided productivity losses into four groups of losses and discuss each separately below. These groups are morbidity related, mortality related, crime related and other. In this section, lost earnings were allocated across the members of society affecting both the excessive drinker and their household as well as other members of society. We assumed other members of society are affected mainly because of lost federal and state and local government revenues accruing through taxes. We estimated the share of lost earning borne by government based on the share of Net National Product received by government. In 2006, Net National Product was \$11,632.7 billion (29). In 2006, federal and state/local government receipts were \$2,407.3 billion (30) and \$1,811.4 billion (31), respectively. Thus, federal and state/local receipts represented 20.7% and 15.6% of national income, respectively. We allocated productivity losses associated with morbidity-related losses to state/local and federal government based on these shares. The remainder of lost earnings was assumed to be borne by the excessive drinker and his/her household, as were household productivity losses.

### a. Morbidity

Morbidity related losses include earnings losses from the traditional model and associated household productivity losses. Morbidity related losses also include losses related to days lost to institutionalization and hospitalization and FAS. These losses were assumed to be borne by the excessive drinker and their household as well as the government because of reduced tax revenue. Because a child with fetal alcohol syndrome is assumed to be part of the excessive drinker's household, FAS productivity losses were assigned to the household of the excessive drinker, while the government lost tax revenue associated with lost earnings.

The resulting estimates indicated that 66.1% of morbidity related losses were borne by the excessive drinker and their household. The remaining 33.9% of the losses were borne by government.

### b. Mortality

Losses associated with death were first allocated to government based on the share of these lost earnings that would have accrued to federal and state and local government. Then, private life insurance was assumed to have paid \$22,957 per death (based on total life insurance disbursements of \$55.7 billion in 2006 (32) divided by the 2,426,264 resident deaths in 2006). Remaining losses associated with victims were allocated to victims. Victims, in this case refers to homicide or child maltreatment deaths and the 36% of the mortality for motor-vehicle crashes representing passengers

and non-intoxicated pedestrians killed in these crashes (33). The remaining losses for mortality were assigned to the excessive drinker and their household. Overall, 44.2% of mortality losses were borne by the excessive drinker and their household, 36.3% by the government, 16.6% by victims of excessive drinkers, and 2.9% by private insurance.

### c. Crime Losses

Productivity losses associated with incarceration were assigned to the excessive drinker and their household with the exception of the government's loss of tax revenue. Lost productivity for victims of crime was attributed to the victims with the exception of the government's tax losses.

### d. Other

Losses related to increased absenteeism were assumed shared by government (reduced tax revenues) and others in society who bear the decrease in productivity. None of these losses were borne by the excessive drinker and their household, 36.3% were assumed to be borne by government, and the remaining 63.7% was assumed to be borne by employers and other workers.

### e. Summary

Overall, 54.6% of productivity losses were borne by the excessive drinker and their household, 35.1% by government, 7.5% by victims and the remainder by private health insurance and others in society. These estimates were similar to those of Harwood (1998) who found about 59% of productivity losses were borne by the excessive drinker and 34% by government.

## 3. Other Costs

Other costs were allocated by payer according to the following methods:

- *Crime Victim Property Damage* – Fully allocated to crime victims although some of these losses may have been covered by private insurance.
- *Criminal Justice System Costs* – Police protection and legal and adjudication costs were assigned to state and local government. Corrections costs were assigned to the appropriate level of government based on the allocation in Table V-4. Private legal defense costs were assigned to the excessive drinker and their household.
- *Motor Vehicle Crash Losses* – Health and productivity-related motor vehicle crash losses were included above. Based on NHTSA estimates (reference 25, page 59 Table 22), 65% of property damage losses were allocated to private insurance and 35% to the excessive drinker. Legal costs were fully allocated to private insurance; the cost of travel delays was allocated to other.
- *Fire Losses* – Since local government typically provides fire protection services, we allocated the \$1,572 million in fire protection service costs to state and local government. Overall fire damage losses in 2006 were \$11.3 billion. Fire insurance premiums were \$9.4 billion or 83% of total losses. Thus, the majority of property losses were covered by insurance. Therefore, for the remaining \$565 million in property losses, we assumed that the majority of damage (75%) was paid for by private insurance and the remainder by the alcohol excessive drinker and their household.

- *Fetal Alcohol Syndrome Special Education* – Fully allocated to state and local government as they bear primary responsibility for public education.

Based on these methods, overall, government bore the largest share of the losses in the other cost group (60.3%), followed by private insurance and others in society (33.6%). The remainder was borne by excessive drinkers and their families. Criminal justice system and motor vehicle crash related costs make-up the largest share of other costs. Criminal justice system costs were paid almost exclusively by government (98.9%). Motor vehicle crash costs were paid mainly by others in society (85.8%) including private insurance and the general public.

Table VI-3: Distribution of Burden of Excessive Alcohol Consumption in the United States, 2006  
(in millions)

Cost Category	Total Cost	Excessive Drinker and Their Household	Government			Private Insurance	Victims	Others in Society
			Total	Federal	State/Local			
<b>Health Care Costs</b>								
Alcohol Abuse and Dependence	\$10,668.457	\$824.777	\$7,999.485	\$2,627.296	\$5,372.189	\$1,188.213	\$0.000	\$655.983
Primary Diagnoses Attributable to Alcohol	\$8,526.822	\$1,400.595	\$3,747.446	\$3,120.436	\$627.010	\$2,761.073	\$0.000	\$617.707
Inpatient Hospital	\$5,115.568	\$567.521	\$2,432.093	\$2,123.446	\$308.647	\$1,776.349	\$0.000	\$339.604
Physician Office and Hospital Ambulatory Care	\$1,195.946	\$201.692	\$411.080	\$320.031	\$91.049	\$451.620	\$0.000	\$131.554
Nursing Home Care	\$1,002.888	\$261.814	\$601.331	\$413.583	\$187.749	\$74.111	\$0.000	\$65.631
Retail Pharmacy and Other Health Professional	\$1,212.420	\$369.569	\$302.941	\$263.377	\$39.565	\$458.992	\$0.000	\$80.918
Fetal Alcohol Syndrome	\$2,538.004	\$306.345	\$1,168.864	\$850.054	\$318.810	\$878.488	\$0.000	\$184.306
Other Health System Costs	\$2,822.308	\$0.000	\$2,046.402	\$1,525.002	\$521.400	\$668.371	\$0.000	\$107.535
Prevention and Research	\$1,207.120	\$0.000	\$1,207.120	\$1,143.025	\$64.096	\$0.000	\$0.000	\$0.000
Training	\$29.527	\$0.000	\$10.708	\$6.110	\$4.598	\$0.000	\$0.000	\$18.819
Health Insurance Administration	\$1,585.660	\$0.000	\$828.573	\$375.866	\$452.707	\$668.371	\$0.000	\$88.716
<b>Total, Health Care Costs</b>	<b>\$24,555.591</b>	<b>\$2,531.717</b>	<b>\$14,962.197</b>	<b>\$8,122.788</b>	<b>\$6,839.409</b>	<b>\$5,496.145</b>	<b>\$0.000</b>	<b>\$1,565.532</b>
<b>Productivity Losses</b>								
Impaired Productivity	\$79,158.009	\$49,294.662	\$27,162.562	\$15,499.664	\$11,662.897	\$0.000	\$0.000	\$2,700.785
Traditional Earnings	\$74,101.827	\$47,228.154	\$26,873.673	\$15,334.817	\$11,538.856	\$0.000	\$0.000	\$0.000
Household Productivity	\$5,355.629	\$5,355.629	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000
Absenteeism	\$4,237.580	\$0.000	\$1,536.795	\$876.935	\$659.860	\$0.000	\$0.000	\$0.000
Institutionalization/Hospitalization	\$2,053.308	\$1,308.658	\$744.650	\$424.917	\$319.733	\$0.000	\$0.000	\$2,700.785
Mortality	\$65,062.211	\$28,767.404	\$23,595.378	\$13,464.136	\$10,131.241	\$1,909.566	\$0.000	\$0.000
Incarcerations	\$6,328.915	\$4,033.679	\$2,295.236	\$1,309.721	\$985.515	\$0.000	\$0.000	\$0.000
Victims of Crime	\$2,092.886	\$0.000	\$759.003	\$433.107	\$325.896	\$0.000	\$0.000	\$0.000
Fetal Alcohol Syndrome	\$2,053.748	\$1,308.939	\$744.810	\$425.008	\$319.802	\$0.000	\$0.000	\$0.000
<b>Total, Productivity Losses</b>	<b>\$161,286.103</b>	<b>\$88,002.462</b>	<b>\$56,549.545</b>	<b>\$32,268.642</b>	<b>\$24,280.903</b>	<b>\$1,909.566</b>	<b>\$12,123.745</b>	<b>\$2,700.785</b>



Cost Category	Total Cost	Excessive Drinker and Their Household	Government			Private Insurance	Victims	Others in Society
			Total	Federal	State/Local			
<b>Other Effects on Society</b>								
Crime Victim Property Damage	\$439,766	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$439,766	\$0.000
Criminal Justice System	\$20,972,690	\$229,381	\$301,101	\$20,442,208	\$0.000	\$0.000	\$0.000	\$0.000
Motor Vehicle Crashes	\$13,718,406	\$1,949,389	\$0.000	\$0.000	\$0.000	\$9,204,213	\$0.000	\$2,564,804
Fire Losses	\$2,137,300	\$141,338	\$0.000	\$1,571,950	\$0.000	\$424,013	\$0.000	\$0.000
FAS Special Education	\$368,768	\$0.000	\$0.000	\$368,768	\$0.000	\$0.000	\$0.000	\$0.000
<b>Total, Other Effects</b>	<b>\$37,636,930</b>	<b>\$2,320,108</b>	<b>\$301,101</b>	<b>\$22,382,925</b>	<b>\$0.000</b>	<b>\$9,628,225</b>	<b>\$439,766</b>	<b>\$2,564,804</b>
<b>Total</b>	<b>\$223,478,624</b>	<b>\$92,854,288</b>	<b>\$40,692,531</b>	<b>\$53,503,238</b>	<b>\$17,033,936</b>	<b>\$12,563,511</b>	<b>\$6,831,121</b>	

## D. Economic Costs Associated with Binge Drinking

In this section, we estimate the portion of the loss associated with excessive alcohol consumption that is attributable to binge drinking. Where data specific to defining binge drinking were not available, we made an approximation given the data source. For example, our estimates of binge drinking include some of the costs associated with specialty treatment costs for diagnosed alcohol abuse and dependence based on the proportion of persons who met diagnostic criteria for these conditions in the past 12 months who also reported binge drinking at least once a month (68.5%) based on analysis of the NESARC. This assured that we only attributed to binge drinking the proportion of costs associated with alcohol abuse and dependence that involved persons who were also current binge drinkers. Conversely, this approach recognized that a portion of the economic costs associated with alcohol abuse and dependence may be attributable to factors other than current excessive drinking, including chronic health problems that resulted from prior excessive drinking and the residual impact of prior excessive drinking on other outcomes, including employment and wages. Table VI-4 shows our methods for allocating cost categories to binge drinking.

**Table VI-4: Approach to Assigning Costs Associated with Binge Drinking**

Cost Category	Method for Allocation
<b>Health Care Costs</b>	
Alcohol Abuse and Dependence	Based on the share of individuals in NESARC wave I with symptoms for abuse or dependence in the last 12 months who reported binge drinking in the last month (68.5%)
Primary Diagnoses Attributable to Alcohol	Costs related to acute conditions fully attributed to binge drinking. Costs related to chronic conditions not attributed. Since the share of NHEA pharmacy costs attributed to alcohol was estimated based on the share of ambulatory care costs attributed to alcohol, the share of pharmacy costs attributed to binge drinking was calculated using the same percentage as for ambulatory care.
Inpatient Hospital	
Physician Office and Hospital Ambulatory Care	
Nursing Home Care	
Retail Pharmacy and Other Health Professional	
Fetal Alcohol Syndrome	Attributed to binge drinking based on the share of women of childbearing age (18-49) who drank any alcohol in the past 30 days who also binge drank in the last 30 days (42.2%) as calculated in the NSDUH 2006.
<b>Other Health System Costs</b>	
Prevention and Research	Attributed based on the overall share of costs of primary diagnoses attributable to alcohol and FAS costs attributed to binge drinking $[(\$4,154 + \$1,071) / (\$8,518 + \$2,538) = 47.3\%]$ .
Training	Attributed based on the overall share of costs of primary diagnoses attributable to alcohol and FAS costs attributed to binge drinking $[(\$4,154 + \$1,071) / (\$8,518 + \$2,538) = 47.3\%]$ .
Health Insurance Administration	Attributed based on the share of the associated health expenditures attributed to binge drinking (68.5% of insurance administration costs related to alcohol abuse and dependence and 48.8% of insurance administration costs related to primary diagnoses attributable to alcohol and FAS)

Cost Category	Method for Allocation
<b>Productivity Losses</b>	
Impaired Workplace Productivity - Traditional Earnings	68.5% based on the share of individuals in NESARC wave I with symptoms for abuse or dependence in the last 12 months who reported binge drinking in the last month.
Impaired Workplace Productivity - Household Productivity	
Impaired Workplace Productivity - Absenteeism	Fully attributed to binge drinking.
Institutionalization/Hospitalization	68.5% of losses related to specialty treatment allocated to binge drinking based on the share of the dependent and abusing population who binge drink. Hospitalized days for acute conditions allocated to binge drinking.
Mortality	Deaths related to homicide, motor vehicle crashes and acute conditions fully attributed to binge drinking. 68.5% of deaths related to alcohol abuse or dependence attributed based on the share of the dependent and abusing population who binge drink.
Incarcerations	Attribution required intoxication at the time of the crime, thus fully attributed to binge drinking.
Victims of Crime	Attribution of crime required intoxication at the time of the crime, thus fully attributed to binge drinking.
Fetal Alcohol Syndrome	Attributed to binge drinking based on the share of women of childbearing age (18-49) who drank any alcohol in the past 30 days who also binge drank in the last 30 days (42.2%) as calculated in the NSDUH 2006.
<b>Other Effects on Society</b>	
Crime Victim Property Damage	Attribution of crime required intoxication at the time of the crime, thus fully attributed to binge drinking.
Criminal Justice System	Attribution of crime required intoxication at the time of the crime or alcohol crime. Fully attributed with the exception of liquor law violation costs.
Motor Vehicle Crashes	Attribution of crash required intoxication at the time of the crash, therefore fully attributed.
Fire Losses	Fully attributed to binge drinking.
FAS Special Education	Attributed to binge drinking based on the share of women of childbearing age (18-49) who drank any alcohol in the past 30 days who also binge drank in the last 30 days (42.2%) as calculated in the NSDUH 2006.

Overall, 76.4% of costs associated with excessive alcohol consumption were attributed to binge drinking. The share of excessive alcohol consumption costs allocated to binge drinking was lower for health system direct costs (57.1%) than for productivity losses (74.2%) and other costs (98.1%) (Table VI-5).

**Table VI-5: Total Economic Costs of Binge Drinking in the United States, 2006  
(in millions)**

Cost Category	Total Cost	Binge Drinking
<b>Health Care Costs</b>		
Alcohol Abuse and Dependence	\$10,668.457	\$7,303.172
Primary Diagnoses Attributable to Alcohol	\$8,526.822	\$4,160.080
Inpatient Hospital	\$5,115.568	\$1,726.368
Physician Office and Hospital Ambulatory Care	\$1,195.946	\$840.002
Nursing Home Care	\$1,002.888	\$742.137
Retail Pharmacy and Other Health Professional	\$1,212.420	\$851.573
Fetal Alcohol Syndrome	\$2,538.004	\$1,071.038
Other Health System Costs	\$2,822.308	\$1,494.338
Prevention and Research	\$1,207.120	\$570.690
Training	\$29.527	\$13.960
Health Insurance Administration	\$1,585.660	\$909.688
<b>Total, Health Care Costs</b>	<b>\$24,555.591</b>	<b>\$14,028.628</b>
<b>Productivity Losses</b>		
Impaired Workplace Productivity	\$83,695.036	\$58,630.777
Traditional Earnings	\$74,101.827	\$50,726.961
Household Productivity	\$5,355.629	\$3,666.236
Absenteeism	\$4,237.580	\$4,237.580
Institutionalization/Hospitalization	\$2,053.308	\$1,323.034
Mortality	\$65,062.211	\$50,501.018
Incarcerations	\$6,328.915	\$6,328.915
Victims of Crime	\$2,092.886	\$2,092.886
Fetal Alcohol Syndrome	\$2,053.748	\$866.682
<b>Total, Productivity Losses</b>	<b>\$161,286.103</b>	<b>\$119,743.311</b>
<b>Other Effects on Society</b>		
Crime Victim Property Damage	\$439.766	\$439.766
Criminal Justice System	\$20,972.690	\$20,476.894
Motor Vehicle Crashes	\$13,718.406	\$13,718.406
Fire Losses	\$2,137.300	\$2,137.300
FAS Special Education	\$368.768	\$155.620
<b>Total, Other Effects</b>	<b>\$37,636.930</b>	<b>\$36,927.987</b>
<b>Total</b>	<b>\$223,478.624</b>	<b>\$170,699.926</b>



## E. Economic Costs Associated with Underage Drinking

We disaggregated the economic cost of excessive alcohol consumption into that portion related to underage drinking, i.e., the share related to drinkers under age 21 years.

### 1. *Methods of allocation to underage drinking*

Methods for health system direct costs, productivity losses, and other costs are described in the following sections.

#### a. *Health System Direct Costs*

Below, we describe our methods for each category of costs:

- *Specialty Substance Abuse Treatment* – Although the SAMHSA’s SEP project does not typically develop estimates of spending by age, a special study conducted under this project produced SA costs estimates for those under 18 and between age 19-64 (34). Costs for those 19-20 were estimated as a share of costs for those 19-64. Overall, these estimates indicated 19.3% of specialty services were for individuals less than 21.
- *Primary Diagnoses Attributable to Alcohol* – Costs for primary diagnoses attributable to alcohol were estimated based on patient age in the HCUP, NAMCS, NHAMCS, and NNHS files for inpatient, ambulatory, and nursing home care. These estimates indicated 4.1% of alcohol-attributable hospital facility and associated inpatient physician costs were for underage drinkers. The share of ambulatory care costs for underage drinkers was 12.9%. Costs for underage drinking represented 0.23% of nursing home costs. The age of the individual using alcohol-attributable retail pharmacy, non-durable medical equipment and other health professional services could not be directly estimated. Thus, we assumed that the share of these costs attributable to underage drinking was the same as the 12.9% share of ambulatory costs allocated to underage drinking.
- *Fetal Alcohol Syndrome* – Based on analysis of the NSDUH for 2006, the share of women of child-bearing age who were excessive drinkers who were less than 21 was 18.2 percent. Thus, we assumed 18.2% of FAS costs were related to underage drinking.
- *Prevention, Research and Training* – Prevention programs targeted at youth including Safe and Drug Free Schools and Communities, ONDCP National Youth Anti-Drug Media Campaign, and Enforcing Underage Drinking Laws were fully allocated to underage drinking. 18.1% of remaining prevention and research costs and of all training costs were allocated to underage drinking based on the share of excessive drinkers who were underage in the NSDUH 2006.
- *Health Insurance Administration* – In parallel to the share of specialty substance abuse treatment costs allocated to underage drinking, we allocated 19.3% of health insurance administration costs related to specialty substance abuse treatment. 6.9% of health insurance administration costs related to primary diagnoses attributable to alcohol were allocated to underage drinking based on the share of medical expenditures for primary diagnoses attributable to alcohol among underage persons.

Overall, 15.1% of health system direct costs for excessive alcohol consumption were allocated to underage drinking.

## **b. Productivity Losses**

### *(1) Morbidity*

Reductions in labor force earnings and household productivity were broken out by age group in Tables IV-4 and IV-6, respectively. Losses for the 18-19 year old group and one-sixth of the losses for the 20-25 year old age group were allocated to underage drinking.

Alcohol-attributable inpatient days were estimated as part of the analysis of the HCUP file in Section III-B.1. Among the alcohol-attributable inpatient days, we estimated 3.5% were for persons under the age of 21 at the time of admission. This share was used to allocate productivity losses related to inpatient days to underage drinking. Analysis of specialty facility treatment expenditures estimated that 19.3% of expenditures were for individuals under age 21. We used this percentage to allocate productivity losses related to inpatient and residential days in specialty treatment to underage drinking.

Productivity costs associated with fetal alcohol syndrome were allocated to underage drinking based on the share of women of child-bearing age who were excessive drinkers who were less than 21 (18.2 percent based on the NSDUH 2006).

### *(2) Mortality*

We divided mortality losses into three groups: motor vehicle crash-related deaths, homicide related deaths, and other deaths.

- *Motor Vehicle Crash Fatalities* – Estimates from the Department of Transportation, National Center for Statistics and Analysis (35) indicated that in 2005, 10.0% of drivers with a BAC greater than .08 in a fatal crash were under the age of 21. We used this proportion to estimate the share of alcohol-attributable motor vehicle fatalities related to underage drinking.
- *Homicide-Related Fatalities* – The share of homicide arrests where the individual was under 21 was estimated based on analysis of Table 4.7 from the Sourcebook of Criminal Justice Statistics Online, 2006 (36). These data indicated that 29.0% of individuals arrested for homicide were under the age of 21. We applied this share to the overall number of alcohol-attributable homicide fatalities to estimate the homicide fatalities attributable to underage drinking.
- *Other Fatalities* – All other alcohol-attributable deaths among individuals 15 to 20 were attributed to underage drinking. This represented 1,110 deaths.

### *(3) Crime-Related Losses*

Using the Survey of Inmates of Local Jails, 2002 and the Survey of State and Federal Inmates, 2004, we estimated that among the jail and prison populations of alcohol-attributable incarcerations 15.7% and 18.6%, respectively, were under the age of 21 at the time of initial incarceration. These shares were used to allocate alcohol-attributable lost productivity related to incarceration to underage drinking.

Victim productivity losses were allocated to underage drinking based on the percentage of alcohol-attributable arrests for individuals 15-20. We excluded alcohol related crimes, DUI,

liquor laws, and public drunkenness from this calculation. We estimated 30.7% of alcohol-attributable arrests were for individuals 15-20.

### c. Other Costs

- *Absenteeism* - Losses related to absenteeism were estimated by age group (Table IV-9A). The losses for the 18-19 and one-fifth of the losses for the 20-24 year old group were allocated to underage drinking.
- *Crime Victim Property Damage* – Victim property damage was allocated to underage drinking based on the percentage of alcohol-attributable arrests for property crimes by individuals ages 15-20. We estimated that 38.6% of alcohol-attributable property crime arrests were for individuals 15-20 years of age.
- *Criminal Justice System* – Costs for alcohol crimes were allocated to underage drinking based on the share of arrestees who were less than 21 years old, i.e., 25.7%. (The largest share of these arrests was for liquor law violations in which 70.6% of arrestees were less than 21.) Other police protection, legal and adjudication, and private legal costs were allocated based on the percentage of arrestees for non-alcohol crimes who were less than 21, i.e., 30.7%. Corrections costs were estimated based on the share of incarcerated persons who were under age 21 at the time of their initial incarceration. Among the jail and prison populations of alcohol-attributable arrestees, the under 21 estimates were 15.7% and 18.6%, respectively; these shares of correctional costs for local and state/federal governments were allocated to underage drinking.
- *Motor Vehicle Crash* – Estimates from the Department of Transportation, National Center for Statistics and Analysis (35) indicated that in 2005, 10.0% of drivers with a BAC greater than .08 in a fatal crash were under the age of 21. We used this proportion to estimate the share of alcohol-attributable crash costs from underage drinking.
- *Fire Losses* – 18.1% of the costs were allocated to underage drinking based on the share of excessive drinkers who were under age 21 in the NSDUH 2006.
- *Fetal Alcohol Syndrome Special Education Costs* – These costs were allocated to underage drinking based on the share of women of child-bearing age who were excessive drinkers who were less than 21 (18.2%) based on the NSDUH 2006.

## 2. Results

Overall, 11.0% of the economic costs of excessive alcohol consumption were related to underage drinking (Table VI-6).

**Table VI-6: Total Economic Costs of Underage Drinking in the United States, 2006  
(in millions)**

Cost Category	Total Cost	Underage Drinking
<b>Health Care Costs</b>		
Alcohol Abuse and Dependence	\$10,668.457	\$2,056.863
Primary Diagnoses Attributable to Alcohol	\$8,526.822	\$524.650
Inpatient Hospital	\$5,115.568	\$212.163
Physician Office and Hospital Ambulatory Care	\$1,195.946	\$154.052
Nursing Home Care	\$1,002.888	\$2.261
Retail Pharmacy and Other Health Professional	\$1,212.420	\$156.174
Fetal Alcohol Syndrome	\$2,538.004	\$461.917
Other Health System Costs	\$2,822.308	\$663.115
Prevention and Research	\$1,207.120	\$470.657
Training	\$29.527	\$5.344
Health Insurance Administration	\$1,585.660	\$187.113
<b>Total, Health Care Costs</b>	<b>\$24,555.591</b>	<b>\$3,706.544</b>
<b>Productivity Losses</b>		
Impaired Productivity	\$83,695.036	\$2,418.299
Traditional Earnings	\$74,101.827	\$2,020.775
Household Productivity	\$5,355.629	\$211.000
Absenteeism	\$4,237.580	\$186.524
Institutionalization/Hospitalization	\$2,053.308	\$363.195
Mortality	\$65,062.211	\$6,777.212
Incarcerations	\$6,328.915	\$3,586.961
Victims of Crime	\$2,092.886	\$641.848
Fetal Alcohol Syndrome	\$2,053.748	\$373.782
<b>Total, Productivity Losses</b>	<b>\$161,286.103</b>	<b>\$14,161.297</b>
<b>Other Effects on Society</b>		
Crime Victim Property Damage	\$439.766	\$169.920
Criminal Justice System	\$20,972.690	\$4,700.490
Motor Vehicle Crashes	\$13,718.406	\$1,378.630
Fire Losses	\$2,137.300	\$386.851
FAS Special Education	\$368.768	\$67.116
<b>Total, Other Effects</b>	<b>\$37,636.930</b>	<b>\$6,703.007</b>
<b>Total</b>	<b>\$223,478.624</b>	<b>\$24,570.848</b>

#### F. Economic Costs Associated with Drinking During Pregnancy

The approach used to allocate costs to drinking during pregnancy was diagnosis based. In particular, costs associated with fetal alcohol syndrome spectrum disorders, spontaneous abortion, and adverse birth outcomes (prematurity, low birth weight, intrauterine growth retardation) were attributed to drinking during pregnancy. These costs include productivity related losses for



premature mortality and institutionalization associated with these diagnoses. Costs for research and prevention efforts by the CDC's FAS group were also included. The medical treatment costs associated with these conditions represented 0.68% of medical costs for primary diagnoses attributable to alcohol. Thus, 0.68% of insurance administration costs for primary diagnoses attributable to alcohol were allocated to drinking while pregnant. These costs came to \$5,203 million in 2006 (Table VI-7) and FAS accounted for 98% of the costs.

**Table VI-7: Total Economic Costs of Drinking During Pregnancy  
in the United States, 2006  
(in millions)**

Cost Category	Total Cost
<b>Health Care Costs</b>	
Primary Diagnoses Attributable to Alcohol	\$58.309
Inpatient Hospital	\$44.835
Physician Office and Hospital Ambulatory Care	\$6.484
Nursing Home Care	\$0.465
Retail Pharmacy and Other Health Professional	\$6.524
Fetal Alcohol Syndrome	\$2,538.004
Other Health System Costs	\$16.068
Prevention and Research	\$9.856
Health Insurance Administration	\$6.183
<b>Total, Health Care Costs</b>	<b>\$2,612.401</b>
<b>Productivity Losses</b>	
Institutionalization/Hospitalization	\$2.505
Mortality	\$165.581
Fetal Alcohol Syndrome	\$2,053.748
<b>Total, Productivity Losses</b>	<b>\$2,221.834</b>
<b>Other Effects on Society</b>	
Fetal Alcohol Syndrome Special Education	\$368.768
<b>Total, Other Costs</b>	<b>\$368.768</b>
<b>Total</b>	<b>\$5,203.002</b>

## G. Comparison to Previous Estimates

In this section, we compare the 2006 cost estimates to the Harwood-estimated costs for 1992 and 1998. We note key differences in the methods between the current study and the Harwood ones which likely affected the estimates.

### 1. Aggregate Cost Categories

The overall annualized increase in total cost was 3.0% (Table VI-8). The annual increase in health expenditures of 2.1 percent was substantially below the 5.4 percent annual increase that would have been expected from population growth (1.2 percent) + the CPI for medical services (4.2 percent) in this period. Similarly, the 3.0 percent annual increase in productivity losses was below the 4.4 percent annual growth anticipated from combined annual population (1.2 percent

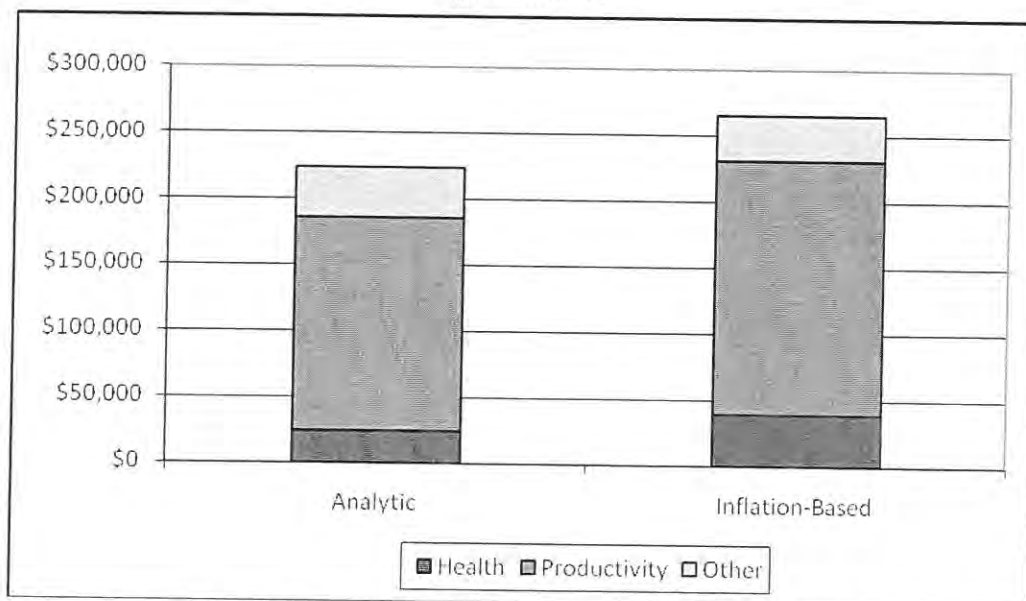
and wage growth (3.2 percent). Annual increases in other costs were closer to those that would be anticipated (3.7%) from changes in population (1.2%) and general price inflation (2.7 percent) based on the CPI for all services.

**Table VI-8: Comparison of Alcohol Cost Estimates in 1992, 1998 and 2006 Studies (in millions)**

Cost Category	1992	1998	2006	Annualized Increase 1992-2006
Health System	\$18,360	\$25,682	\$24,556	2.1%
Productivity	\$106,997	\$134,204	\$161,286	3.0%
Other Costs	\$22,663	\$24,749	\$37,637	3.7%
Total Cost	\$148,021	\$184,635	\$223,479	3.0%

Figure VI-1 compares the study estimates to estimates developed based on simply inflating the 1998 estimates to 2006 based on population and price increases over this period. Based on inflation and population growth, the estimated cost would be expected to be \$265 billion in contrast to \$223 billion estimate from this study. Based on inflation and population growth productivity losses would be expected to be \$192 billion vs. the \$161 billion estimated; health losses would be \$40 billion vs. the \$25 billion estimated; and other costs would have been \$34 billion versus the \$38 billion estimated.

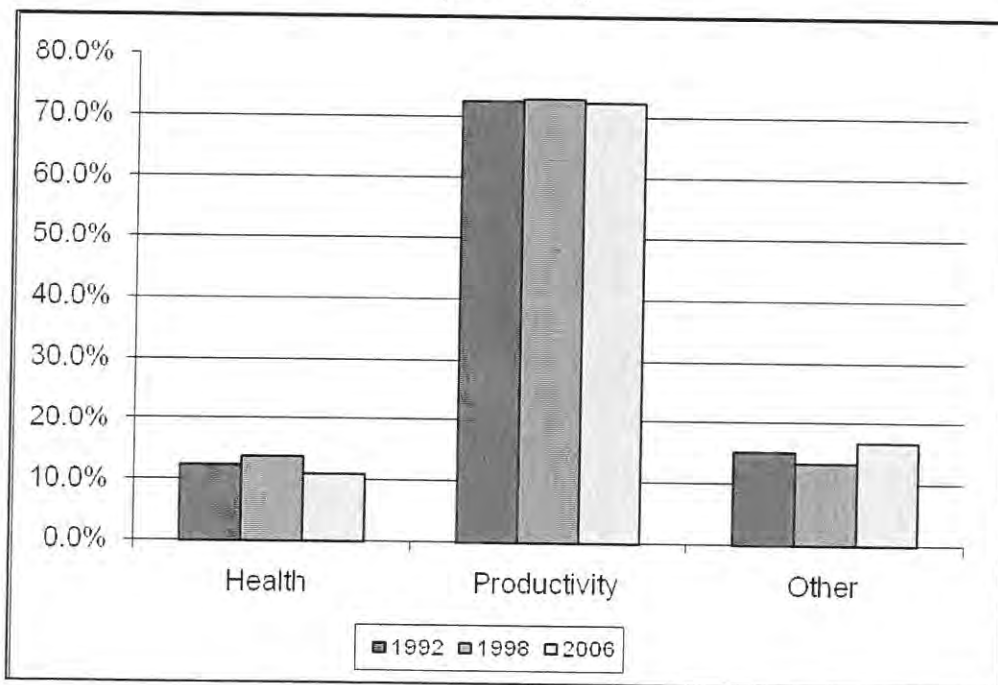
**Figure VI-1  
Total Expenditures, 2006  
Analytic Study versus Inflation-Based Estimate\*  
(in millions)**



\* Analytic estimate for 2006 is the estimate developed in the current study. Inflation-Based estimate is Harwood's estimate of 1992 expenditures inflated to 2006 based on population growth and price inflation.

Figure VI-2 compares the distribution of costs categories in Harwood's 1992 and 1998 estimates and the current 2006 estimate. Shares are relatively constant with productivity costs representing the vast majority of costs (about 72%) and health and other costs having almost equal shares of the remainder. The share of costs represented by other costs in the current estimates was slightly higher than in 1992, while the share of costs represented by health care was slightly lower. The increase in the share of costs represented by other costs was related mainly to substantial increases in criminal justice system costs. The decline in the share related to health care costs was primarily due to changes in the conditions and attribution factors used to estimate expenditures.

**Figure VI-2**  
**Total Expenditure Share of Cost of Excessive Alcohol Consumption, by Category**  
**1992, 1998 and 2006**  
 (in millions)



## 2. Health System Direct Costs

We estimated \$24.6 billion in health care expenditures attributed to alcohol in 2006 (Table VI-9). Compared to Harwood's estimate of 1992 expenditures (\$18.4 billion), the annual increase in health expenditures of about 2.1 percent was substantially below inflation related increases in health care of 4.2 percent as measured by the CPI for medical services in this period. The meager estimated annual increase in health expenditures was related to changes in method that have made the current estimate more conservative than Harwood's.

SAMHSA's MH and SA treatment spending estimates were not available in 1998 when the most recent estimates of the economic costs of alcohol abuse were developed by Harwood. However, the methods used to develop SAMHSA's spending estimates were very similar to those used by Harwood.

Attribution factors and conditions attributable to alcohol were updated. Several common conditions including diabetes and pneumonia were no longer counted as attributable to alcohol because good AAF data were lacking. A comparison of the conditions and attribution factors used in this study and those used in Harwood (1998) is provided in Appendix G.

The 2006 health system cost estimate excludes medical expenses related to comorbid alcohol diagnoses, because we were unable to adjust for confounding factors. These costs represented \$881 million or 4.8% of health system costs in the 1992 estimate. The 2006 nursing home estimates addressed all alcohol-attributable diagnoses, whereas the earlier Harwood studies only included admissions for alcohol abuse and dependence. The estimate of FAS prevalence (1 per 1,000 births) was much more conservative than the 1992 estimate (2 per 1,000 births). Using the Harwood prevalence rate would double the estimated costs for 2006. Finally, the estimated training costs in the current study were more conservative than the 1992 study. Training costs did not include costs for training physicians, nurses, clergy, and law enforcement officers because data on the level of training received and cost of providing the training was unavailable.

**Table VI-9: Comparison of Estimates to Major Recent Studies  
Total Health Care Expenditures, 1992, 1998 and 2006  
(in millions)**

Cost Category	1992	1998	2006	Annualized Increase 1992-2006
Specialty Alcohol Treatment Services	\$4,228	\$5,754	\$6,536	3.2%
Specialty Alcohol Treatment	\$4,046	\$5,506	\$6,144	3.0%
Insurance Administration	\$182	\$248	\$393	5.6%
Medical Consequences	\$12,787	\$18,215	\$16,783	2.0%
Other Diagnoses Attributable to Alcohol (excl. FAS)	\$10,667	\$15,196	\$13,052	1.5%
Medical Consequences of Fetal Alcohol Syndrome	\$1,484	\$2,113	\$2,538	3.9%
Insurance Administration	\$636	\$906	\$1,193	4.6%
Other Health System Costs	\$1,346	\$1,713	\$1,237	-0.6%
Prevention and Research	\$1,272	\$1,623	\$1,207	-0.4%
Training	\$73	\$90	\$30	-6.3%
<b>Total</b>	<b>\$18,360</b>	<b>\$25,682</b>	<b>\$24,556</b>	<b>2.1%</b>

### 3. Productivity Losses

\$161.3 billion in productivity losses were attributed to alcohol in 2006 compared to Harwood's estimate of \$107.0 billion in 1992, an annual increase of about 3.0 percent (Table VI-10).

The 1992 study used a simulation approach and the National Longitudinal Alcohol Epidemiologic Survey to estimate productivity losses related to alcohol dependence. This study used a two-part regression model and the NESARC. Despite these differences, the findings were of a similar magnitude and both studies were unable to identify losses for women. The current estimate included losses related to increased absenteeism among binge drinkers; this item was not included in the Harwood estimates. On the other hand, Harwood included lost productivity from increased length of hospital stay associated with comorbid conditions, but this study did not. As



noted previously, the FAS prevalence was half the 1992 estimate; using the Harwood prevalence rate would double the estimated costs for FAS in 2006.

**Table VI-10: Comparison of Estimates to Major Recent Studies  
Total Productivity Losses, 1992, 1998, and 2006  
(in millions)**

Category of Loss	1992*	1998	2006	Annual Increase 1992-2006
Morbidity Losses	\$69,209	\$87,621	\$87,802	1.7%
Lost Productivity from Alcohol Related Morbidity (excluding FAS)	\$68,219	\$86,368	\$81,511	1.3%
Absenteeism Due to Binge Drinking	NA	NA	\$4,238	NA
Fetal Alcohol Syndrome	\$990	\$1,253	\$2,054	5.4%
Mortality Losses	\$31,327	\$36,498	\$65,062	5.4%
Motor Vehicle Crashes	\$8,023	\$8,592	\$17,622	5.8%
Other Alcohol-Related	\$23,304	\$27,906	\$47,440	5.2%
Crime-Related Losses	\$6,461	\$10,085	\$8,422	1.9%
Incarcerations	\$5,449	\$9,097	\$6,329	1.1%
Victims of Crime	\$1,012	\$988	\$2,093	5.3%
<b>Total</b>	<b>\$106,997</b>	<b>\$134,204</b>	<b>\$161,286</b>	<b>3.0%</b>

\* Estimates in the 1992 report were rounded to the nearest million dollars.

The 1992 study attributed 107,360 deaths to alcohol; the current study 83,180. The number of deaths caused by alcohol dependence and abuse was similar in 1992 and 2006 (6,005 versus 6,643). Likewise the number of deaths related to acute injuries was comparable (45,349 versus 46,825). However, the number of deaths from chronic conditions that were fully or partially attributable to alcohol was substantially higher in the 1992 estimate than the 2006 estimate (about 56,006 versus 29,712) (see Table 5.3 on pages 5-5 and 5-6 in reference 3). A small portion of deaths (5-8 percent) related to several common conditions (diabetes mellitus, essential hypertension, cerebrovascular disease, pneumonia and influenza) were attributed to alcohol in the 1992 study. The current study did not include these conditions. In addition, for several types of malignant neoplasms (i.e., oropharyngeal, esophageal, and larynx), the attribution factors in the current study were substantially lower than those used in the 1992 study (see Appendix G). Despite the changes in attribution, this study found a substantial increase in losses related to mortality. The 1992 study used a 6% discount rate while the current study used a 3% discount rate. The estimate of mortality losses from the 1992 study using a 3% discount rate would be \$45,718 million.

Harwood valued productivity losses related to incarcerated individuals at the mean wage for individuals of the same gender. Harwood asserted that the productivity of these individuals should be valued at the average wage because the observed decrement between the earning potential of these individuals in absence of incarceration and the general population is likely to be attributable to alcohol problems. However, the current study used a far more conservative approach valuing these losses at minimum wage since these individuals have lower human capital than average individuals. Had we used the previous Harwood approach, the loss would have been \$20.3 billion versus the \$6.3 billion estimated (Appendix E, Table E-1).

#### 4. Other Costs

Overall, \$37.6 billion in losses were related to other costs compared to Harwood's estimate of \$22.7 billion for 1992, representing an annual increase of 3.7 percent (Table VI-11).

The methods for estimating crime victim and criminal justice system costs in this study were similar to those used by Harwood. The substantial increase in costs was mainly related to the increase in criminal justice system related loss from \$6.3 billion in 1992 to \$21.0 billion for 2006, a 9.0% annual increase (The rate of increase for criminal justice system expenditures generally in this period was 5.9 percent annually). The remainder of the difference was related to differences in crime categories and attribution factors. The current study used higher attribution factors for homicide, forcible rape, other assaults, and property crimes and two crime categories were added – vandalism and offenses against family and children (see Table II-4).

**Table VI-11: Comparison of Estimates to Major Recent Studies  
Total Other Losses, 1992, 1998, and 2006  
(in millions)**

Categories	1992*	1998	2006	Annual Increase 1992-2006
Crime Related Costs	\$19,930	\$22,072	\$35,676	4.2%
Crime Victim Property Damage Costs	\$28	\$28	\$440	21.7%
Criminal Justice System	\$6,283	\$6,300	\$20,973	9.0%
Motor Vehicle Crashes*	\$13,619	\$15,744	\$13,718	0.1%
Other Costs	\$2,733	\$2,677	\$2,506	-0.6%
Fire Losses	\$1,590	\$1,537	\$2,137	2.1%
FAS Special Education Costs	\$460	\$656	\$369	-1.6%
Social Welfare	\$683	\$484	NA	NA
<b>Total</b>	<b>\$22,663</b>	<b>\$24,749</b>	<b>\$37,637</b>	<b>3.7%</b>

\* Driving under the influence of alcohol is a crime in all states. Even though not all the perpetrators were caught, we attributed DUI to crime just as for other crimes where the perpetrator might not have been apprehended..

While Harwood attributed 6.1 and 11.2 percent of structural damage and fire protection service costs, respectively to alcohol based on a 1973 literature review (37), we used a five percent attribution. As noted previously, the current study used an estimate of FAS prevalence half that used in Harwood (1998). Harwood et al. (1998) included costs related to social welfare program spending related to alcohol use. Beginning in March 1995, alcohol-related diagnoses were no longer qualifying diagnoses for eligibility for Social Security Disability. Therefore, this study did not include social welfare expenditures as an alcohol-attributable societal cost.

#### H. Limitations

This study likely underestimated the cost of excessive alcohol consumption for many reasons, but mostly because we excluded categories of cost where strong scientific evidence was lacking to precisely estimate the loss.

## 1. Healthcare

The 54 alcohol-attributable conditions and the AAFs for chronic conditions that were used to assess health care costs in this study were adopted from the ARDI system. These AAFs are conservative, particularly the indirect estimates that are calculated using self-reported alcohol consumption from surveys which tend to underestimate the true prevalence of alcohol use because of underreporting and the inability of surveys to reach high-risk populations. In addition, these estimates were based on alcohol use in the past 30 days, and thus, exclude former excessive drinkers.

In contrast, the AAFs that we used for acute conditions (i.e., injuries) largely came from studies conducted in emergency department settings. These AAFs will tend to underestimate alcohol involvement because alcohol use by persons treated in ED settings tends to be under-reported, particularly if patients with alcohol-attributable injuries delay in seeking treatment. Furthermore, AAFs obtained in ED setting probably underestimate alcohol involvement for persons hospitalized for alcohol-attributable injuries because alcohol involvement tends to increase with injury severity.

Although alcohol is widely believed to be a risk factor for tuberculosis, pneumonia, and hepatitis C, no costs related to these conditions were attributed to alcohol because no consensus AAFs were available, and they were thus not included in ARDI.

Morbidity and mortality estimates were based on the primary cause, and thus, alcohol-associated contributing causes were not considered.

The costs related to comorbid conditions attributable to alcohol were not included although alcohol-related comorbidities are associated with significant increases in length of hospital stay. These costs were included in the Harwood study, but excluded from the current study because we were unable to adjust for potential confounding factors in the available data.

The estimate of federal hospital costs (Table III-4) assumed the same relative cost proportion attributable to alcohol as for community hospitals. To the extent that excessive alcohol consumption differs in the two clienteles we may have incorrectly estimated the federal share.

Ambulatory care costs associated with alcohol-attributable diagnoses were estimated using conservative parameters. Prior to calculating the mean cost per ambulatory visit from the MEPS data, we truncated the reported distribution of expenditures at the 95<sup>th</sup> percentile to reduce the influence of outliers on the means. This approach substantially reduced our estimate of the cost per visit, i.e., from \$152 to \$143 for emergency department visits – admitted, \$738 to \$607 for emergency department visit – not admitted, \$690 to \$539 for hospital outpatient department visits and \$161 to \$112 for an office visit.

Long term care calculations only included nursing homes. The long term care costs of many alcohol-related injuries like spinal cord injury and traumatic brain injury were not captured and could be considerable.

In contrast to Harwood 1998, the accounting for training costs in this study did not include costs for training physicians, nurses, clergy, and law enforcement officers. Although, these

individuals receive training related to alcohol problems, data on the level of training received and the cost of providing the training was not available.

## 2. Productivity

The productivity loss estimates were conservative for several reasons. First, no productivity losses related to alcohol dependence were estimated for women. From the biologic point of view, women face similar outcomes from excessive alcohol consumption as men. Our inability to estimate a loss for women was more likely related to variability in women's labor force participation and the lack of inclusion of measures explaining this variability in available data sources rather than biology.

We were unable to assess productivity losses due to non-dependent excessive alcohol consumption, e.g., presenteeism.

The estimates for absenteeism related to binge drinking were based on the NSDUH which does not distinguish between number of drink cut points for men and women, i.e., it uses 5 or more drinks on a single occasion to define binge drinking for both sexes. Research has shown this underestimates binge drinking among women by about 35% (38). Moreover, we did not include the \$4.4 billion cost of absenteeism for alcohol-dependent drinkers (Table IV-9B) because of the possibility that some portion of these costs might overlap with diminished earnings.

Mortality estimates were based on the underlying cause of death, and thus, contributing causes of death which related to alcohol were not considered. Similarly, while days lost to institutionalization were included for primary diagnoses attributable to alcohol, losses related to institutional days for secondary (comorbid) diagnoses attributable to alcohol were not included.

Productivity losses associated with DUI conviction were not included in this study, e.g., loss of driving privileges and difficulty finding employment and keeping a job.

Productivity losses for family members who care for a sick or injured drinker were not included.

## 3. Other Costs

For the analysis of alcohol-attributable motor vehicle traffic crash costs, we used a 0.10 g/dL cutpoint to define such crashes. This assumption was very conservative, as scientific evidence suggests that there are attributable costs for even minimally impaired drivers. Moreover, in all states the legal limit for operating a motor vehicle is a BAC less than 0.08 g/dL. To assess the effect of using a lower limit to define these costs, we used data from the NHTSA report by Blinco which showed the incidence of "alcohol-caused" crashes by maximum injury severity (MAIS) level and reported that the AAF for such nonfatal crashes was 0.069 (page 42). We re-estimated motor vehicle crash losses with these data. Appendix Table F-2 shows the calculation of alcohol-caused crash losses related to insurance administration (excluding medical insurance), legal costs, travel delays, and property damage in 2000. These costs were trended to 2006 in Table F-3. Table F-4 shows a comparison of costs for our base case vs "alcohol-caused." Estimated losses increased by \$785 million or 4.9 percent using "alcohol-caused" as a criterion.



#### 4. Overall

This study drew on medical claims based files and survey self-reports for alcohol diagnoses and consumption. Both sources tend to under-report excessive alcohol consumption. We followed the PHS method for estimating societal cost of illness and, thus, no intangible or averting costs were estimated, e.g., pain, suffering, bereavement. A recent study (39) estimated the cost of underage drinking at \$61.9 billion for 2001. Decreased quality of life (an intangible cost) accounted for 67 percent of total costs (\$41.6 billion). **Should a similar relationship apply here, we substantially underestimated the costs of excessive alcohol consumption by more than half.**

Even though the prevalence of fetal alcohol syndrome in this study was far more conservative than that used by Harwood (1998), it is important to appreciate that many subclinical cases are not recognized in either prevalence estimate.

**Estimates of crime-related costs were also conservative. The attribution factors were developed based on self-reports of consumption which were likely to be underreported.** For example, even those convicted of alcohol crimes like DUI did not all report drinking (Table II-3). In addition, although alcohol was likely a factor in crimes where the offender was drinking at the time of the offense, but not intoxicated, those crimes were not attributed to alcohol. Moreover, this study only focused on certain index crimes and costs associated with other categories of crime that may have been alcohol-attributable were not included. On the other hand, because estimates were based on incarcerated, to the extent that alcohol use influences the likelihood of getting apprehended, there may be overestimation of the AAF. This potential overestimation would only apply, however, to victim-based estimates of crime costs (~6% of crime costs).

The costs attributed to underage drinking were very conservative. The AAFs for injury are likely higher for underage drinkers than for older drinkers, however, age-specific AAFs were only available for fatal motor-vehicle traffic injuries. In addition, although early age of drinking onset and heavy alcohol consumption at an early age have been associated with increased negative long-term consequences and costs (40-45), these long-term costs were excluded from the economic costs estimates for underage drinking in the interest of focusing on current expenditures as is typical in cost studies of this nature.

**Scientific evidence suggested that alcohol plays a causal role in producing mental disorders and psychosocial damage in the drinker and their family.** Because the relationship between alcohol consumption and mental disorders is complex and the evidence related to alcohol's causal role is limited, these costs were not been included in this study.

In future analysis, addition of the following components to the cost estimates would provide a more comprehensive estimates of the losses related to alcohol:

- Morbidity losses related to reduced earnings for women; and
- Costs to employers including costs associated with reduced performance at work that have not been captured by the reduced earnings estimates.

**In the meantime, it is clear that excessive drinking resulted in at least \$223.5 billion in economic costs in the U.S. in 2006.** According to the National Institute on Alcohol Abuse and Alcoholism, 7,538,026,000 total gallons of beer, wine, and spirits were consumed in the U.S. in 2006 (46). Considering the \$94.2 billion paid by government for excessive alcohol consumption (Table VI-3),

this cost amounted to \$12.50 per gallon of alcoholic beverages consumed. On a per capita basis, the societal cost of excessive alcohol consumption was approximately \$746 for each man, woman, and child in the U.S. in 2006. (reference 47: 2006 population = 299,398,484).

Our estimates reflect not only the substantial health impact of excessive drinking, but the significant social impact of this behavior as reflected in the cost of alcohol-attributable crime and productivity losses. Unfortunately, however, the response to this problem has not been commensurate with the health and social impact that has been conservatively attributed to it. Evidenced-based strategies to prevent excessive drinking – including increasing alcohol excise taxes, limiting alcohol outlet density, and enforcing the age 21 minimum legal drinking age – are available but are underutilized and some of these interventions (e.g., increasing alcohol excise taxes) could even be used to help provide the funds needed to support other prevention and treatment activities.

## **Appendix A: Alcohol-attributable Diagnoses**



**Table A-1: Alcohol-attributable Chronic Fatal and Non-Fatal Conditions with Diagnosis Codes and AAFs, 2006**

Fatal Condition	Nonfatal Condition	ICD-9	ICD-10	Fatal AAF	Nonfatal AAF
<b>100% Alcohol-attributable</b>					
Alcoholic psychosis	Alcohol induced mental disorders	291	F10.3-F10.9	1.00	1.00
Alcohol abuse	Acute alcoholic intoxication, nondependent alcohol abuse	305.0, 303.0	F10.0, F10.1	1.00	1.00
Alcohol dependence syndrome	Other and unspecified alcohol dependence	303.9	F10.2	1.00	1.00
Alcoholic polyneuropathy	Alcoholic polyneuropathy	357.5	G62.1	1.00	1.00
Degeneration of nervous system due to alcohol		*	G31.2	1.00	1.00
Alcoholic myopathy		*	G72.1	1.00	1.00
Alcoholic cardiomyopathy	Alcoholic cardiomyopathy	425.5	I42.6	1.00	1.00
Alcoholic gastritis	Alcoholic gastritis	535.3	K29.2	1.00	1.00
Alcoholic liver diseases	Alcoholic fatty liver, hepatitis, cirrhosis, and liver damage unspecified	571.0-571.3	K70-K70.4, K70.9	1.00	1.00
Fetal alcohol syndrome	Fetal alcohol syndrome	655.4, 760.71	Q86.0	1.00	1.00
Fetus and newborn affected by maternal use of alcohol		*	P04.3, O35.4	1.00	1.00
Alcohol-induced chronic pancreatitis		*	K86.0	1.00	1.00
<b>High Causation</b>					
Liver cirrhosis, unspecified	Liver cirrhosis, unspecified	571.5-571.9	K74.3-K74.6, K76.0, K76.9	0.40	0.40
Acute pancreatitis	Acute pancreatitis	577	K85	0.24	0.24
Chronic pancreatitis	Chronic pancreatitis	577.1	K86.1	0.84	0.84
Portal hypertension	Portal hypertension	572.3	K76.6	0.40	0.40
Gastroesophageal hemorrhage	Gastroesophageal hemorrhage	530.7	K22.6	0.47	0.47



**Table A-1 (con't): Alcohol-attributable Chronic Fatal and Non-Fatal Conditions with Diagnosis Codes and AAFs, 2006**

Fatal Condition	Nonfatal Condition	ICD-9	ICD-10	Fatal AAF	Nonfatal AAF
<b>Medium Causation</b>					
Oropharyngeal cancer	Oropharyngeal cancer	141, 143-146, 148, 149	C01-C06, C09-C10, C12-C14	Male: 0.06163 Female: 0.02728	Male: 0.06163 Female: 0.02728
Esophageal cancer	Esophageal cancer	150	C15	Male: 0.03547 Female: 0.01803	Male: 0.03547 Female: 0.01803
Liver cancer	Liver cancer	155	C22	Male: 0.05347 Female: 0.03671	Male: 0.05347 Female: 0.03671
Laryngeal cancer	Laryngeal cancer	161	C32	Male: 0.05860 Female: 0.03926	Male: 0.05860 Female: 0.03926
Supraventricular cardiac dysrhythmia	Supraventricular cardiac dysrhythmia	427.0, 427.2, 427.3	147.1, 147.9, 148	Male: 0.02011 Female: 0.01493	Male: 0.02011 Female: 0.01493
Esophageal varices	Esophageal varices	456.0-456.2	185, 198.20, 198.21	0.4	0.4
<b>Medium/Low Causation</b>					
Stroke, ischemic	Stroke, ischemic	433-435, 437, 362.34	G45, I63, I65-I67, I69.3	Male: 0.05107 Female: 0.01365	Male: 0.05107 Female: 0.01365
Stroke, hemorrhagic	Stroke, hemorrhagic	430-432	I60-I62, I69.0-I69.2	Male: 0.08375 Female: 0.01713	Male: 0.08375 Female: 0.01713
Ischemic heart disease	Ischemic heart disease	410-414	I20-I25	Male: 0.00210 Female: 0.00115	Male: 0.00210 Female: 0.00115
Epilepsy	Epilepsy	345	G40, G41	0.15	0.15
Breast cancer, females	Breast cancer, females	174	C50	0.00867	0.00867
Hypertension	Hypertension	401-405	I10-I15	Male: 0.02901 Female: 0.02018	Male: 0.02901 Female: 0.02018
Psoriasis	Psoriasis	696.1	L40.0-L40.4, L40.8, L40.9	Male: 0.00875 Female: 0.00335	Male: 0.00875 Female: 0.00335
Spontaneous abortion		634	O03	0.04	0.04
Cholelithiasis	Cholelithiasis	574	K80	Male: -0.01214 Female: -0.00713	Male: -0.01214 Female: -0.00713
Low birth weight, prematurity, intrauterine growth retardation or death	Low birth weight, prematurity, intrauterine growth retardation	656.5, 764, 765	O36.5, O36.4, P05, P07	Male: 0.03434 Female: 0.02550	Male: 0.03434 Female: 0.02550
Chronic hepatitis	Chronic hepatitis	571.4	K73	Male: 0.01778 Female: 0.00912	Male: 0.01778 Female: 0.00912
Prostate cancer	Prostate cancer	185	C61	0.00657	0.00657

**Table A-2: Alcohol-attributable Acute Fatal and Non-Fatal Conditions with Diagnosis Codes and AAFs, 2006**

Fatal Condition	Nonfatal Condition	ICD-9	ICD-10	Fatal AAF	Nonfatal AAF
<b>100% Alcohol-attributable</b>					
Alcohol poisoning	Accidental poisoning by alcohol - alcoholic beverages, ethyl alcohol and its products, methyl alcohol, and unspecified alcohol	980.0, 980.1, E860.0, E860.1, E860.2, E860.9	X45, Y15, T51.0, T51.1, T51.9	1.000	1.000
Suicide by and exposure to alcohol		*	X65	1.000	1.000
Excessive blood level of alcohol	Excessive blood level of alcohol	790.3	R78.0	1.000	1.000
<b>Direct AAF Estimate</b>					
Air-space transport	Air-space transport accidents	E840-E845	V95-V97	0.180	0.058
Aspiration	Inhalation and ingestion of food causing obstruction of respiratory tract or suffocation	E911	W78-W79	0.180	0.058
Child maltreatment	Injury purposely inflicted by other persons on a child 14 or younger	E960-E968 (patient age 14 or younger)	X85-Y09, Y87.1 (individual age 14 or younger)	0.160	0.058
Drowning injuries	Unintentional drowning/submersion	E910	W65-W74	0.340	0.058
Fall injuries	Accidental Falls	E880-E888, E848	W00-W19	0.320	0.058
Fire injuries	Accidents caused by fire and flames	E890-E899	X00-X09	0.420	0.058
Firearms	Accidents caused by firearm and air gun missile	E922	W32-W34	0.180	0.058
Homicide/Assault	Injury purposely inflicted by other persons on a person 15 or older	E960-E969 (patient age 15 or older)	X85-Y09, Y87.1 (individual age 15 or older)	0.470	0.267
Hypothermia	Accidents due to excessive cold	E901	X31	0.420	0.058

\* No ICD-9 code is available and the condition is new to ICD-10. Accidental and unintentional can be used interchangeably.

**Table A-2 (con't): Alcohol-attributable Acute Fatal and Non-Fatal Conditions with Diagnosis Codes and AAFs, 2006**

Fatal Condition	Nonfatal Condition	ICD-9	ICD-10	Fatal AAF	Nonfatal AAF
Motor-vehicle nontraffic crashes	Motor-vehicle nontraffic crashes	E820-E825	V02.0, V03.0, V04.0, V09.0, V12-V14(.0-.2), V19.0-V19.3, V20-V28(.0-.2), V29.0-V29.3, V30-V39(.0-.3), V40-V49(.0-.3), V50-V59(.0-.3), V60-V69(.0-.3), V70-V79(.0-.3), V81.0, V82.0, V83-V86(.4-.9), V88.0-V88.8, V89.0	0.180	0.058
Motor-vehicle traffic crashes	Motor-vehicle traffic crashes	E810-E819	V02(.1-.9), V03(.1-.9), V04(.1-.9), V09.2, V12-V14(.3-.9), V19.4-V19.6, V20-V28(.3-.9), V29.4-V29.9, V30-V39(.4-.9), V40-V49(.4-.9), V50-V59(.4-.9), V60-V69(.4-.9), V70-V79(.4-.9), V80.3-V80.5, V81.1, V82.1, V83-V86(.0-.3), V87.0-V87.8, V89.2	Males: 0-14: 0.16 15-19: 0.26 20-24: 0.46 25-34: 0.48 35-44: 0.47 45-54: 0.39 55-64: 0.27 65+: 0.13 Females: 0-14: 0.16 15-19: 0.20 20-24: 0.36 25-34: 0.37 35-44: 0.36 45-54: 0.26 55-64: 0.17 65+: 0.09	0.061

\* No ICD-9 code is available and the condition is new to ICD-10. Accidental and unintentional can be used interchangeably.

**Table A-2 (con't): Alcohol-attributable Acute Fatal and Non-Fatal Conditions with Diagnosis Codes and AAFs, 2006**

Fatal Condition	Nonfatal Condition	ICD-9	ICD-10	Fatal AAF	Nonfatal AAF
Occupational and machine injuries	Accidents caused by striking against or struck by objects or persons; caught in or between objects; or machinery	E917-E920	W24-W31, W45	0.18	0.058
Other road vehicle crashes	Railway accidents and other road vehicle accidents	E800-E807, E826-E829	V01, V05-V06, V09.1, V09.3, V09.9, V10-V11, V15-V18, V19.3, V19.8-V19.9, V80.0-V80.2, V80.6-V80.9, V81.2-V81.9, V82.2-V82.9, V87.9, V88.9, V89.1, V89.3, V89.9	0.18	0.058
Poisoning (not alcohol)	Accidental poisoning by drugs, medicinal substances, and biologicals and accidental poisoning by other solid and liquid substances, gases, and vapors	E850-E869	X40-X49 (except X45)	0.29	0.058
Suicide	Self-inflicted injury	E950-E959	X60-X84, (except X65) Y87.0	0.23	0.058
Water transport	Water transport accidents	E830-E838	V90-V94	0.18	0.058

\* No ICD-9 code is available and the condition is new to ICD-10. Accidental and unintentional can be used interchangeably.



**Appendix B:  
Detailed Health Care Treatment  
Expenditure Tables**

**Table B-1A: Inpatient Hospital Treatment Costs for Chronic Conditions Fully or Partially Attributable to Alcohol, 2006**

Primary Diagnosis	Gender	Number of Discharges <sup>1</sup>	Mean Charges per Discharge <sup>1</sup>	Mean Expenditure per Discharge <sup>3</sup>	Attribution Factor <sup>2</sup>	Total Alcohol-attributable Treatment Expenditures (in millions \$)
(1)	(2)	(3)	(4)	(5)	(6)	(3) X (5) X (6)
<b>100% Alcohol-attributable</b>						
Alcoholic polyneuropathy	Both	841	\$24,858	\$9,440	1.000	\$7.938
Alcoholic cardiomyopathy	Both	1,258	\$33,300	\$13,111	1.000	\$16.488
Alcoholic gastritis	Both	8,001	\$14,364	\$5,523	1.000	\$44.193
Alcoholic liver diseases	Both	69,916	\$34,957	\$13,432	1.000	\$939.146
<b>High Causation</b>						
Liver cirrhosis, unspecified	Both	39,151	\$34,684	\$13,128	0.400	\$205.599
Acute pancreatitis	Both	262,164	\$26,749	\$10,354	0.240	\$651.460
Chronic pancreatitis	Both	22,722	\$22,420	\$8,515	0.840	\$162.515
Portal hypertension	Both	2,555	\$30,653	\$12,363	0.400	\$12.636
Gastroesophageal hemorrhage	Both	15,357	\$21,987	\$8,120	0.470	\$58.609
<b>Medium Causation</b>						
Oropharyngeal cancer	Male	11,110	\$49,413	\$18,916	0.062	\$12.952
	Female	5,227	\$46,307	\$17,482	0.027	\$2.493
Esophageal cancer	Male	9,555	\$52,655	\$20,246	0.035	\$6.862
	Female	2,963	\$60,235	\$21,463	0.018	\$1.147
Liver cancer	Male	11,512	\$38,701	\$14,677	0.053	\$9.034
	Female	5,427	\$39,581	\$14,670	0.037	\$2.922
Laryngeal cancer	Male	6,026	\$50,676	\$18,564	0.059	\$6.556
	Female	1,651	\$48,513	\$17,314	0.039	\$1.122
Supraventricular cardiac dysrhythmia	Male	224,434	\$23,577	\$8,987	0.020	\$40.562
	Female	231,322	\$21,240	\$7,519	0.015	\$25.969
Esophageal varices	Both	4,341	\$31,744	\$11,993	0.400	\$20.824
<b>Medium/Low Causation</b>						
Stroke, ischemic	Male	361,599	\$25,224	\$9,221	0.051	\$170.274
	Female	420,496	\$24,244	\$8,624	0.014	\$49.502
Stroke, hemorrhagic	Male	59,573	\$61,927	\$23,642	0.084	\$117.957
	Female	62,195	\$61,877	\$23,763	0.017	\$25.317
Ischemic heart disease	Male	1,188,409	\$49,086	\$19,126	0.002	\$47.733
	Female	733,010	\$42,559	\$15,396	0.001	\$12.978
Epilepsy	Both	49,119	\$25,294	\$9,521	0.150	\$70.148
Breast cancer, females	Female	73,878	\$21,850	\$8,893	0.009	\$5.696
Hypertension	Male	133,979	\$27,069	\$9,830	0.029	\$38.208
	Female	166,414	\$24,099	\$8,446	0.020	\$28.365
Psoriasis	Male	812	\$18,474	\$6,920	0.009	\$0.049
	Female	676	\$17,132	\$6,428	0.003	\$0.015

Primary Diagnosis	Gender	Number of Discharges <sup>1</sup>	Mean Charges per Discharge <sup>1</sup>	Mean Expenditure per Discharge <sup>3</sup>	Attribution Factor <sup>2</sup>	Total Alcohol-attributable Treatment Expenditures (in millions \$)
(1)	(2)	(3)	(4)	(5)	(6)	(3) X (5) X (6)
Spontaneous abortion	Female	19,483	\$9,908	\$3,924	0.040	\$3.058
Low birth weight, prematurity, intrauterine growth retardation or death	Male	13,888	\$97,511	\$37,940	0.034	\$18.095
	Female	42,570	\$34,739	\$13,810	0.026	\$14.991
Chronic hepatitis	Male	303	\$26,879	\$11,138	0.018	\$0.060
	Female	1,151	\$31,365	\$12,510	0.009	\$0.131
Prostate cancer	Male	88,883	\$25,267	\$10,489	0.007	\$6.125
<b>Total<sup>4</sup></b>		<b>4,351,972</b>				<b>\$2,837.730</b>

<sup>1</sup> Based on HCUP NIS, 2006

<sup>2</sup> Drawn from ARDI. The same AAFs were used for fatal and non-fatal chronic conditions. Gender-specific AAFs were used if included in ARDI.

<sup>3</sup> Calculated based on column (4) and expenditure-to-charge ratios from MEPS by primary source of payment.

<sup>4</sup> Column may not sum to total due to rounding

**Table B-1B: Inpatient Hospital Treatment Costs for Acute Conditions Fully or Partially Attributable to Alcohol, 2006**

Primary Diagnosis	Status	Number of Discharges <sup>1</sup>	Mean Charges per Discharge <sup>1</sup>	Mean Expenditure per Discharge <sup>2</sup>	Attribution Factor <sup>3</sup>	Total Alcohol-attributable Treatment Expenditures (in millions \$)
(1)	(2)	(3)	(4)	(5)	(6)	(3) X (5) X (6)
<b>100% Alcohol-attributable</b>						
Accidental poisoning by alcohol - alcoholic beverages, ethyl alcohol and its products, methyl alcohol, and unspecified alcohol	All	4,797	\$19,192	\$7,355	1.000	\$35.282
Excessive blood level of alcohol	All	5	\$16,752	\$5,344	1.000	\$0.029
<b>Direct AAF Estimate</b>						
Air-space transport accidents	Lived	621	\$59,707	\$26,689	0.058	\$0.962
	Died	39	\$137,717	\$62,426	0.180	\$0.435
Inhalation and ingestion of food causing obstruction of respiratory tract or suffocation	Lived	1,636	\$26,100	\$9,477	0.058	\$0.899
	Died	241	\$34,362	\$11,780	0.180	\$0.510
Child Maltreatment	Lived	3,366	\$33,164	\$12,078	0.058	\$2.358
	Died	215	\$54,353	\$20,088	0.160	\$0.692
Unintentional drowning/ submersion	Lived	677	\$34,810	\$14,447	0.058	\$0.567
	Died	133	\$62,462	\$21,825	0.340	\$0.987
Accidental Falls	Lived	688,485	\$29,865	\$10,613	0.058	\$423.786
	Died	18,367	\$58,153	\$19,945	0.320	\$117.229
Accidents caused by fire and flames	Lived	7,314	\$45,766	\$17,770	0.058	\$7.538
	Died	437	\$135,828	\$48,584	0.420	\$8.909

Primary Diagnosis	Status	Number of Discharges <sup>1</sup>	Mean Charges per Discharge <sup>1</sup>	Mean Expenditure per Discharge <sup>2</sup>	Attribution Factor <sup>3</sup>	Total Alcohol-attributable Treatment Expenditures (in millions \$)
(1)	(2)	(3)	(4)	(5)	(6)	(3) X (5) X (6)
Accidents caused by firearm and air gun missile	Lived	5,821	\$37,140	\$14,699	0.058	\$4.962
	Died	236	\$60,131	\$24,304	0.180	\$1.033
Injury purposely inflicted by other persons	Lived	82,659	\$34,068	\$13,238	0.267	\$292.174
	Died	1,747	\$65,337	\$25,536	0.470	\$20.967
Accidents due to excessive cold	Lived	1,818	\$30,054	\$11,124	0.058	\$1.173
	Died	116	\$68,363	\$22,756	0.420	\$1.104
Motor-vehicle nontraffic crashes	Lived	27,769	\$33,846	\$14,439	0.058	\$23.256
	Died	427	\$104,193	\$41,829	0.180	\$3.212
Motor-vehicle traffic crashes <sup>4</sup>	Lived	238,256	\$48,586	\$21,204	0.061	\$308.165
	Died	7,486	\$94,093	\$40,919	0.292 <sup>4</sup>	\$89.543
Accidents caused by striking against or struck by objects or persons; caught in or between objects; or machinery	Lived	55,502	\$22,942	\$9,486	0.058	\$30.536
	Died	233	\$75,354	\$29,278	0.180	\$1.230
Railway accidents and other road vehicle accidents	Lived	21,224	\$28,294	\$12,065	0.058	\$14.852
	Died	174	\$117,604	\$50,688	0.180	\$1.589
Accidental poisoning by drugs, medicinal substances, and biologicals and accidental poisoning by other solid and liquid substances, gases, and vapors	Lived	79,722	\$17,123	\$6,308	0.058	\$29.166
	Died	995	\$59,027	\$20,078	0.290	\$5.795
Self-inflicted injury	Lived	124,601	\$16,705	\$6,516	0.058	\$47.088
	Died	2,197	\$44,770	\$17,674	0.230	\$8.931
Water transport accidents	Lived	2,390	\$32,079	\$14,247	0.058	\$1.975
	Died	44	\$78,792	\$34,756	0.180	\$0.273
<b>Total<sup>5</sup></b>		<b>1,379,752</b>				<b>\$1,487.205</b>

<sup>1</sup> Based on HCUP NIS, 2006

<sup>2</sup> Calculated based on column (4) and expenditure-to-charge ratios from MEPS by primary source of payment.

<sup>3</sup> Based on CDC literature review of AAFs for nonfatal injuries. ARDI AAFs were used for fatal injuries.

<sup>4</sup> Attribution factor for fatal motor vehicle crashes varies by age and gender. The average across discharges is reported in column (6).

<sup>5</sup> Column may not sum to total due to rounding.



**Table B-2A: Treatment Costs for Physician Services Provided During an Inpatient Stay for Chronic Conditions Fully or Partially Attributable to Alcohol, 2006**

Primary Diagnosis	Gender	Number of Discharges <sup>1</sup>	Total LOS <sup>1</sup>	Mean LOS per Discharge <sup>1</sup>	Mean Physician Expenditure per Inpatient Day <sup>2</sup>	Attribution Factor <sup>3</sup>	Total Alcohol-attributable Treatment Expenditures (in millions \$)
(1)		(2)	(3)	(4)	(5)	(6)	(3) X (5) X (6)
<b>100% Alcohol-attributable</b>							
Alcoholic polyneuropathy	Both	841	5,586	6.64	\$270	1.000	\$1.508
Alcoholic cardiomyopathy	Both	1,258	5,701	4.53	\$270	1.000	\$1.539
Alcoholic gastritis	Both	8,001	25,518	3.19	\$270	1.000	\$6.890
Alcoholic liver diseases	Both	69,916	447,899	6.41	\$270	1.000	\$120.933
<b>High Causation</b>							
Liver cirrhosis, unspecified	Both	39,151	236,954	6.05	\$270	0.400	\$25.591
Acute pancreatitis	Both	262,164	1,468,210	5.60	\$270	0.240	\$95.140
Chronic pancreatitis	Both	22,722	118,031	5.19	\$270	0.840	\$26.769
Portal hypertension	Both	2,555	13,025	5.10	\$270	0.400	\$1.407
Gastroesophageal hemorrhage	Both	15,357	60,538	3.94	\$270	0.470	\$7.682
<b>Medium Causation</b>							
Oropharyngeal cancer	Male	11,110	83,306	7.50	\$270	0.062	\$1.386
	Female	5,227	36,627	7.01	\$270	0.027	\$0.270
Esophageal cancer	Male	9,555	90,169	9.44	\$270	0.035	\$0.864
	Female	2,963	31,198	10.53	\$270	0.018	\$0.152
Liver cancer	Male	11,512	75,272	6.54	\$270	0.053	\$1.087
	Female	5,427	39,700	7.32	\$270	0.037	\$0.393
Laryngeal cancer	Male	6,026	58,422	9.69	\$270	0.059	\$0.924
	Female	1,651	14,619	8.85	\$270	0.039	\$0.155
Supraventricular cardiac dysrhythmia	Male	224,434	751,437	3.35	\$270	0.020	\$4.080
	Female	231,322	869,363	3.76	\$270	0.015	\$3.504
Esophageal varices	Both	4,341	21,349	4.92	\$270	0.400	\$2.306
<b>Medium/Low Causation</b>							
Stroke, ischemic	Male	361,599	1,520,286	4.20	\$270	0.051	\$20.963
	Female	420,496	1,846,479	4.39	\$270	0.014	\$6.805
Stroke, hemorrhagic	Male	59,573	537,109	9.02	\$270	0.084	\$12.145
	Female	62,195	541,689	8.71	\$270	0.017	\$2.505
Ischemic heart disease	Male	1,188,409	4,527,809	3.81	\$270	0.002	\$2.567
	Female	733,010	2,994,358	4.09	\$270	0.001	\$0.930
Epilepsy	Both	49,119	233,885	4.76	\$270	0.150	\$9.472
Breast cancer, females	Female	73,878	195,227	2.64	\$270	0.009	\$0.457
Hypertension	Male	133,979	616,302	4.60	\$270	0.029	\$4.827
	Female	166,414	761,055	4.57	\$270	0.020	\$4.147
Psoriasis	Male	812	5,020	6.18	\$270	0.009	\$0.012
	Female	676	3,707	5.49	\$270	0.003	\$0.003

Primary Diagnosis	Gender	Number of Discharges <sup>1</sup>	Total LOS <sup>1</sup>	Mean LOS per Discharge <sup>1</sup>	Mean Physician Expenditure per Inpatient Day <sup>2</sup>	Attribution Factor <sup>3</sup>	Total Alcohol-attributable Treatment Expenditures (in millions \$)
(1)		(2)	(3)	(4)	(5)	(6)	(3) X (5) X (6)
Spontaneous abortion	Female	19,483	26,628	1.37	\$270	0.040	\$0.288
Low birth weight, prematurity, intrauterine growth retardation or death	Male	13,888	357,226	25.72	\$270	0.034	\$3.312
	Female	42,570	399,067	9.37	\$270	0.026	\$2.748
Chronic hepatitis	Male	303	2,360	7.79	\$270	0.018	\$0.011
	Female	1,151	7,264	6.31	\$270	0.009	\$0.018
Prostate cancer	Male	88,883	252,954	2.85	\$270	0.007	\$0.449
<b>Total<sup>4</sup></b>		<b>4,351,972</b>	<b>19,281,351</b>				<b>\$374.241</b>

<sup>1</sup> Based on HCUP NIS, 2006

<sup>2</sup> Calculated based on MEPS.

<sup>3</sup> Drawn from ARDI. The same AAFs were used for fatal and non-fatal chronic conditions. Gender-specific AAFs were used if included in ARDI.

<sup>4</sup> Column may not sum to total due to rounding

**Table B-2B: Treatment Costs for Physician Services Provided During an Inpatient Stay for Acute Conditions Fully or Partially Attributable to Alcohol, 2006**

Primary Diagnosis	Status	Number of Discharges <sup>1</sup>	Total LOS <sup>1</sup>	Mean LOS per Discharge <sup>1</sup>	Mean Physician Expenditure per Inpatient Day <sup>2</sup>	Attribution Factor <sup>3</sup>	Total Alcohol-attributable Treatment Expenditures (in millions \$)
(1)		(2)	(3)	(4)	(5)	(6)	(3) X (5) X (6)
<b>100% Alcohol-attributable</b>							
Accidental poisoning by alcohol - alcoholic beverages, ethyl alcohol and its products, methyl alcohol, and unspecified alcohol	All	4,797	14,150	2.95	\$270	1.000	\$3.821
Excessive blood level of alcohol	All	5	16	3.00	\$270	1.000	\$0.004
<b>Direct AAF Estimate</b>							
Air-space transport accidents	Lived	621	3,554	5.72	\$270	0.058	\$0.056
	Died	39	339	8.76	\$270	0.180	\$0.016
Inhalation and ingestion of food causing obstruction of respiratory tract or suffocation	Lived	1,636	6,726	4.11	\$270	0.058	\$0.105
	Died	241	795	3.30	\$270	0.180	\$0.039
Child Maltreatment	Lived	3,366	22,512	6.69	\$270	0.058	\$0.353
	Died	215	780	3.63	\$270	0.160	\$0.034
Unintentional drowning/ submersion	Lived	677	3,165	4.67	\$270	0.058	\$0.050
	Died	133	642	4.82	\$270	0.340	\$0.059
Accidental Falls	Lived	688,485	3,538,104	5.14	\$270	0.058	\$55.407
	Died	18,367	136,995	7.46	\$270	0.320	\$11.836

Primary Diagnosis	Status	Number of Discharges <sup>1</sup>	Total LOS <sup>1</sup>	Mean LOS per Discharge <sup>1</sup>	Mean Physician Expenditure per Inpatient Day <sup>2</sup>	Attribution Factor <sup>3</sup>	Total Alcohol-attributable Treatment Expenditures (in millions \$)
(1)		(2)	(3)	(4)	(5)	(6)	(3) X (5) X (6)
Accidents caused by fire and flames	Lived	7,314	62,387	8.53	\$270	0.058	\$0.977
	Died	437	7,044	16.13	\$270	0.420	\$0.799
Accidents caused by firearm and air gun missile	Lived	5,821	32,102	5.52	\$270	0.058	\$0.503
	Died	236	780	3.30	\$270	0.180	\$0.038
Injury purposely inflicted by other persons	Lived	82,659	386,458	4.68	\$270	0.267	\$27.860
	Died	1,747	8,018	4.59	\$270	0.470	\$1.018
Accidents due to excessive cold	Lived	1,818	12,260	6.74	\$270	0.058	\$0.192
	Died	116	809	7.01	\$270	0.420	\$0.092
Motor-vehicle nontraffic crashes	Lived	27,769	131,481	4.73	\$270	0.058	\$2.059
	Died	427	3,456	8.10	\$270	0.180	\$0.168
Motor-vehicle traffic crashes <sup>4</sup>	Lived	238,256	1,489,623	6.25	\$270	0.061	\$24.534
	Died	7,486	46,516	6.21	\$270	0.269	\$3.380
Accidents caused by striking against or struck by objects or persons; caught in or between objects; or machinery	Lived	55,502	190,245	3.43	\$270	0.058	\$2.979
	Died	233	1,477	6.33	\$270	0.180	\$0.072
Railway accidents and other road vehicle accidents	Lived	21,224	83,117	3.92	\$270	0.058	\$1.302
	Died	174	1,151	6.61	\$270	0.180	\$0.056
Accidental poisoning by drugs, medicinal substances, and biologicals and accidental poisoning by other solid and liquid substances, gases, and vapors	Lived	79,722	250,136	3.14	\$270	0.058	\$3.917
	Died	995	6,483	6.51	\$270	0.290	\$0.508
Self-inflicted injury	Lived	124,601	386,892	3.11	\$270	0.058	\$6.059
	Died	2,197	6,834	3.11	\$270	0.230	\$0.424
Water transport accidents	Lived	2,390	10,232	4.28	\$270	0.058	\$0.160
	Died	44	280	6.41	\$270	0.180	\$0.014
<b>Total<sup>5</sup></b>		<b>1,379,752</b>	<b>6,845,557</b>				<b>\$148.887</b>

<sup>1</sup> Based on HCUP NIS, 2006

<sup>2</sup> Calculated based on column (3) and expenditure-to-charge ratios from MEPS by primary source of payment.

<sup>3</sup> Based on CDC literature review of AAFs for nonfatal injuries. ARDI AAFs were used for fatal injuries.

<sup>4</sup> Attribution factor for fatal motor vehicle crashes varies by age and gender. The average across discharges is reported in column (6).

<sup>5</sup> Column may not sum to total due to rounding

**Table B-3A: Physician Office and Hospital Ambulatory Treatment Costs for Chronic Conditions Fully or Partially Attributable to Alcohol, 2006**

Primary Diagnosis	Number of Visits <sup>1</sup>					Total Alcohol-attributable Expenditures (in millions \$) <sup>3</sup>					Total Alcohol-attributable Expenditures (in millions)	
	(2) Physician In-Office (\$112 per Visit)	(3) Hospital Outpatient (\$539 per Visit)	(4) Hospital Emergency - Not Admitted (\$607 per Visit)	(5) Hospital Emergency - Admitted (\$143 per Visit)	(6) Attribution Factor <sup>2</sup>	(7) Physician In-Office	(8) Hospital Outpatient	(9) Hospital Emergency - Not Admitted	(10) Hospital Emergency - Admitted	(11)		
<b>100% Alcohol-attributable</b>												
Alcoholic polyneuropathy	0	0	0	0	1.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000
Alcoholic cardiomyopathy	9,786	184	0	0	1.000	\$1.096	\$0.099	\$0.000	\$0.000	\$0.000	\$0.000	\$1.195
Alcoholic gastritis	553	0	16,811	0	1.000	\$0.062	\$0.000	\$10.204	\$0.000	\$0.000	\$0.000	\$10.266
Alcoholic liver diseases	105,722	3,314	0	11,888	1.000	\$11.841	\$1.786	\$0.000	\$1.700	\$0.000	\$1.700	\$15.327
<b>High Causation</b>												
Liver cirrhosis, unspecified	748,966	63,297	11,580	5,841	0.400	\$33.554	\$13.647	\$2.812	\$0.334	\$0.000	\$0.334	\$50.346
Acute pancreatitis	296,199	17,405	43,083	117,502	0.240	\$7.962	\$2.252	\$6.276	\$4.033	\$0.000	\$4.033	\$20.522
Chronic pancreatitis	1,041	7,364	4,408	0	0.840	\$0.098	\$3.334	\$2.248	\$0.000	\$0.000	\$0.000	\$5.680
Portal hypertension	0	0	0	0	0.400	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000
Gastroesophageal hemorrhage	15,307	0	2,932	0	0.470	\$0.806	\$0.000	\$0.836	\$0.000	\$0.000	\$0.000	\$1.642
<b>Medium Causation</b>												
Oropharyngeal cancer	43,053	71,912	0	2,099	0.062	\$2.389	\$0.000	\$0.018	\$2.704	\$0.000	\$2.704	\$0.297
	23,291	0	0	0	0.027	\$0.000	\$0.000	\$0.000	\$0.071	\$0.000	\$0.071	\$0.071
Esophageal cancer	209,820	31,009	0	3,858	0.035	\$0.593	\$0.000	\$0.020	\$1.446	\$0.000	\$1.446	\$0.834
	25,916	3,918	0	0	0.018	\$0.038	\$0.000	\$0.000	\$0.090	\$0.000	\$0.090	\$0.052
Liver cancer	0	26,626	0	3,106	0.053	\$0.767	\$0.000	\$0.024	\$0.791	\$0.000	\$0.791	\$0.000
	4,820	5,807	0	0	0.037	\$0.115	\$0.000	\$0.000	\$0.135	\$0.000	\$0.135	\$0.020
Laryngeal cancer	60,108	42,547	0	0	0.059	\$1.344	\$0.000	\$0.000	\$1.738	\$0.000	\$1.738	\$0.395
	62,025	2,455	0	0	0.039	\$0.052	\$0.000	\$0.000	\$0.325	\$0.000	\$0.325	\$0.273
Supraventricular cardiac dysrhythmia	1,774,717	347,112	63,684	93,419	0.020	\$3.762	\$0.777	\$0.269	\$8.806	\$0.000	\$8.806	\$3.997
	2,324,745	271,404	77,369	65,776	0.015	\$2.184	\$0.701	\$0.140	\$6.913	\$0.000	\$6.913	\$3.887
Esophageal varices	0	1,636	0	0	0.400	\$0.353	\$0.000	\$0.000	\$0.353	\$0.000	\$0.353	\$0.000



Primary Diagnosis	Number of Visits <sup>1</sup>						Attribution Factor <sup>2</sup>	Total Alcohol-attributable Expenditures (in millions \$) <sup>3</sup>				Total Alcohol-attributable Expenditures (in millions)
	Physician In-Office (\$112 per Visit)	Hospital Outpatient (\$539 per Visit)	Hospital Emergency - Not Admitted (\$607 per Visit)	Hospital Emergency - Admitted (\$143 per Visit)	Physician In-Office	Hospital Outpatient		Hospital Emergency - Not Admitted	Hospital Emergency - Admitted	Total Alcohol-attributable Expenditures (in millions \$) <sup>3</sup>		
										Hospital Emergency - Not Admitted	Hospital Emergency - Admitted	
<b>Medium/Low Causation</b>												
Stroke, ischemic	779,023	135,904	46,832	218,490	\$4,456	\$3,741	\$1,452	\$1,596	\$11,244			
	1,005,534	80,889	58,670	176,884	\$1,537	\$0,595	\$0,486	\$0,345	\$2,964			
Stroke, hemorrhagic	202,326	663	25,799	22,141	\$1,898	\$0,030	\$1,312	\$0,265	\$3,504			
	0	2,225	15,607	34,803	\$0,000	\$0,021	\$0,162	\$0,085	\$0,268			
Ischemic heart disease	6,499,807	302,342	173,927	262,859	\$1,529	\$0,342	\$0,222	\$0,079	\$2,172			
	4,358,963	249,292	90,870	212,611	\$0,561	\$0,155	\$0,063	\$0,035	\$0,814			
Epilepsy	766,212	73,899	59,206	14,614	\$12,872	\$5,975	\$5,391	\$0,313	\$24,551			
Breast cancer, females	3,759,809	770,288	12,932	10,908	\$3,651	\$3,600	\$0,068	\$0,014	\$7,332			
Hypertension	17,160,223	1,447,935	256,517	51,297	\$55,756	\$22,640	\$4,517	\$0,213	\$83,126			
	21,143,367	2,458,564	517,392	64,346	\$47,787	\$26,742	\$6,338	\$0,186	\$81,053			
Psoriasis	376,204	62,155	0	0	\$0,369	\$0,293	\$0,000	\$0,000	\$0,662			
	307,808	60,962	0	3,558	\$0,115	\$0,110	\$0,000	\$0,002	\$0,227			
Spontaneous abortion	176,244	29,369	147,169	16,994	\$0,790	\$0,633	\$3,573	\$0,097	\$5,093			
Low birth weight, prematurity, intrauterine growth retardation or death	21,050	18,732	0	0	\$0,081	\$0,347	\$0,000	\$0,000	\$0,428			
	169,457	34,841	0	0	\$0,484	\$0,479	\$0,000	\$0,000	\$0,963			
Chronic hepatitis	0	0	0	0	\$0,000	\$0,000	\$0,000	\$0,000	\$0,000			
	34,917	24,447	0	0	\$0,036	\$0,120	\$0,000	\$0,000	\$0,156			
Prostate cancer	2,916,430	251,020	184	0	\$2,146	\$0,889	\$0,001	\$0,000	\$3,036			
<b>Total</b>	<b>65,383,443</b>	<b>6,899,517</b>	<b>1,624,972</b>	<b>1,392,994</b>	<b>\$199,312</b>	<b>\$99,426</b>	<b>\$47,439</b>	<b>\$9,767</b>	<b>\$355,944</b>			

<sup>1</sup> Based on NAMCS and NHAMCS, 2006

<sup>2</sup> Drawn from ARDI.

<sup>3</sup> Calculated by multiplying mean expenditures per visit from MEPS 2006 times the number of visits and alcohol attribution factor for the diagnosis.

**Table B-3B: Physician Office and Hospital Ambulatory Treatment Costs for Acute Conditions Fully or Partially Attributable to Alcohol, 2006**

Primary Diagnosis	Number of Visits <sup>1</sup>				Attribution Factor <sup>2</sup>	Total Alcohol-attributable Expenditures (in millions \$) <sup>3</sup>				Total Alcohol-attributable Expenditures (in millions)
	Physician In-Office (\$112 per Visit)	Hospital Outpatient (\$539 per Visit)	Hospital Emergency - Not Admitted (\$607 per Visit)	Hospital Emergency - Admitted (\$143 per Visit)		Physician In-Office	Hospital Outpatient	Hospital Emergency - Not Admitted	Hospital Emergency - Admitted	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
<b>100% Alcohol-attributable</b>										
Accidental poisoning by alcohol - alcoholic beverages, ethyl alcohol and its products, methyl alcohol, and unspecified alcohol	0	0	2,724	2,756	1.000	\$0.000	\$0.000	\$1.653	\$0.394	\$2.048
Excessive blood level of alcohol	0	0	0	0	1.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000
<b>Direct AAF Estimate</b>										
Air-space transport accidents	0	0	5,786	0	0.058	\$0.000	\$0.000	\$0.204	\$0.000	\$0.204
Inhalation and ingestion of food causing obstruction of respiratory tract or suffocation	0	0	24,807	0	0.058	\$0.000	\$0.000	\$0.873	\$0.000	\$0.873
Child Maltreatment	145,219	17,312	144,053	5,001	0.058	\$0.943	\$0.541	\$5.072	\$0.041	\$6.598
Unintentional drowning/submersion	0	0	1,156	0	0.058	\$0.000	\$0.000	\$0.041	\$0.000	\$0.041
Accidental Falls	8,333,707	679,771	4,525,574	442,946	0.058	\$54.136	\$21.251	\$159.327	\$3.674	\$238.388
Accidents caused by fire and flames	162,233	23,863	93,826	8,358	0.058	\$1.054	\$0.746	\$3.303	\$0.069	\$5.172
Accidents caused by firearm and air gun missile	0	25,511	52,190	3,065	0.058	\$0.000	\$0.798	\$1.837	\$0.025	\$2.660
Injury purposely inflicted by other persons	96,179	145,207	1,292,209	40,280	0.267	\$2.876	\$20.897	\$209.427	\$1.538	\$234.738
Accidents due to excessive cold	143,551	1,415	3,729	0	0.058	\$0.933	\$0.044	\$0.131	\$0.000	\$1.108
Motor-vehicle nontraffic crashes	45,259	18,898	196,352	28,314	0.058	\$0.294	\$0.591	\$6.913	\$0.235	\$8.032
Motor-vehicle traffic crashes	3,311,224	245,541	2,660,315	255,759	0.061	\$22.622	\$8.073	\$98.503	\$2.231	\$131.430

Primary Diagnosis	Number of Visits <sup>1</sup>				Attribution Factor <sup>2</sup>	Total Alcohol-attributable Expenditures (in millions \$) <sup>3</sup>					Total Alcohol-attributable Expenditures (in millions)
	Physician In-Office (\$112 per Visit)	Hospital Outpatient (\$539 per Visit)	Hospital Emergency - Not Admitted (\$607 per Visit)	Hospital Emergency - Admitted (\$143 per Visit)		Physician In-Office	Hospital Outpatient	Hospital Emergency - Not Admitted	Hospital Emergency - Admitted	Total	
Accidents caused by striking against or struck by objects or persons; caught in or between objects; or machinery	3,912,475	742,299	3,686,827	52,068	0.058	\$25.415	\$23.206	\$129.798	\$0.432		\$178.851
Railway accidents and other road vehicle accidents	340,042	31,225	208,039	29,616	0.058	\$2.209	\$0.976	\$7.324	\$0.246		\$10.755
Accidental poisoning by drugs, medicinal substances, and biologicals and accidental poisoning by other solid and liquid substances, gases, and vapors	211,122	16,758	188,922	51,632	0.058	\$1.371	\$0.524	\$6.651	\$0.428		\$8.975
Self-inflicted injury	66,905	0	207,016	111,408	0.058	\$0.435	\$0.000	\$7.288	\$0.924		\$8.647
Water transport accidents	49,955	2,669	27,699	11,888	0.058	\$0.325	\$0.083	\$0.975	\$0.099		\$1.482
<b>Total</b>	<b>16,817,870</b>	<b>1,950,469</b>	<b>13,321,224</b>	<b>1,043,091</b>		<b>\$112.613</b>	<b>\$77.730</b>	<b>\$639.323</b>	<b>\$10.336</b>		<b>\$840.002</b>

<sup>1</sup> Overall number of acute visits was based on NAMCS and NHAMCS, 2006. For physician office and hospital outpatient department, the distribution of visits by cause is based on the 2004 NAMCS and NHAMCS, because cause of injury is only reported in the 2006 files for emergency room visits.

<sup>2</sup> Based on CDC literature review.

<sup>3</sup> Calculated by multiplying mean expenditures per visit from MEPS 2006 times the number of visits and alcohol attribution factor for the diagnosis.

**Appendix C:  
Effect of Varying  
Fetal Alcohol Syndrome Prevalence Rate**



**Appendix Table C-1: Health Care Costs Attributable to Fetal Alcohol Syndrome, 2006**  
(in millions \$)

Age Group	Annual Expected Cost of Treatment	Conservative 0.5/1000 Prevalence		Base case 1/1000 Prevalence		Harwood (1998) 2/1000	
		FAS Population	National Annual Cost (millions \$)	FAS Population	National Annual Cost (millions \$)	FAS Population	National Annual Cost (millions \$)
<18	\$3,372.13	31,278	\$105.473	62,556	\$210.947	125,112	\$421.894
18-77	\$11,250.79	103,418	\$1,163.535	206,835	\$2,327.058	413,670	\$4,654.116
<b>Total, Ages 18-77</b>	<b>\$9,421.27</b>	<b>134,696</b>	<b>\$1,269.007</b>	<b>269,391</b>	<b>\$2,538.005</b>	<b>538,782</b>	<b>\$5,076.010</b>

Appendix Table C-2: Lost Earnings Attributable to Fetal Alcohol Syndrome, 2006  
(in millions \$)

Age Group	Conservative 0.5/1000 Prevalence		Base Case 1/1000 Prevalence		Harwood (1998) 2/1000	
	FAS Population	National Annual Cost (millions \$)	FAS Population	National Annual Cost (millions \$)	FAS Population	National Annual Cost (millions \$)
16 - 19	10,559	\$48.179	21,118	\$96.358	42,235	\$192.715
20 - 24	10,682	\$70.290	21,363	\$140.580	42,726	\$281.160
25 - 34	20,390	\$204.638	40,781	\$409.276	81,561	\$818.551
35 - 44	22,467	\$271.622	44,934	\$543.244	89,868	\$1,086.488
45 - 54	21,199	\$263.222	42,397	\$526.444	84,795	\$1,052.887
55 - 64	14,811	\$168.978	26,623	\$337.956	59,246	\$675.912
<b>Total, Ages 16-64</b>	<b>100,108</b>	<b>\$1,026.874</b>	<b>200,215</b>	<b>\$2,053.748</b>	<b>400,431</b>	<b>\$4,107.497</b>

Source: "Estimates of Economic Costs of Fetal Alcohol Spectrum Disorders." The Lewin Group, August 15, 2005 inflated from 2004 to 2006 Based on BLS ECI and Census Bureau population growth.

Appendix Table C-3: Special Education Costs Attributable to Fetal Alcohol Syndrome, 2006  
(in millions \$)

Age Group	Annual Expected Cost of Services	Conservative 0.5/1000 Prevalence		Base Case 1/1000 Prevalence		Harwood (1998) 2/1000	
		FAS Population	National Annual Cost (millions \$)	FAS Population	National Annual Cost (millions \$)	FAS Population	National Annual Cost (millions \$)
<18	\$5,520.45	31,278	\$172.669	62,556	\$345.337	125,112	\$690.675
18-77	\$113.28	103,418	\$11.715	206,835	\$23.430	413,670	\$46.860
<b>Total Ages 18-77</b>	<b>\$1,368.89</b>	<b>134,696</b>	<b>\$184.384</b>	<b>269,391</b>	<b>\$368.768</b>	<b>538,782</b>	<b>\$737.535</b>

**Appendix D:  
Supplemental Tables for  
Productivity Results**

Appendix Table D-1: Regression Results With Control for Marital Status

	Logistic Model Labor Force Participation				GLM Model Earnings Given Labor Force Participation			
	Men		Women		Men		Women	
	Coefficient Estimate	Standard Error	Coefficient Estimate	Standard Error	Coefficient Estimate	Standard Error	Coefficient Estimate	Standard Error
Intercept	1.753 *	0.053	1.565 *	0.034	10.476 *	0.023	10.186 *	0.030
<b>Age Group (Ref Grp: 35-44)</b>								
18-19	-1.505 *	0.073	-1.114 *	0.059	-1.177 *	0.163	-1.277 *	0.182
20-24	-0.472 *	0.054	-0.681 *	0.031	-0.682 *	0.048	-0.755 *	0.051
25-34	0.065	0.050	-0.186 *	0.027	-0.205 *	0.018	-0.243 *	0.023
45-54	-0.277 *	0.043	-0.249 *	0.029	0.070 *	0.015	0.002	0.020
55-64	-1.588 *	0.052	-1.119 *	0.029	0.030	0.021	-0.054 *	0.027
<b>Race (Ref Grp: White)</b>								
Non-Hispanic Black	-0.475 *	0.033	0.066 *	0.027	-0.236 *	0.027	-0.037	0.026
Hispanic	0.316 *	0.051	-0.169 *	0.029	-0.237 *	0.026	-0.097 *	0.033
Other	-0.542 *	0.048	-0.418 *	0.036	-0.092 *	0.024	-0.064 *	0.032
<b>Highest Educational Attainment (Ref Grp: HS Grad)</b>								
Less than 12 years	-0.497 *	0.047	-0.673 *	0.034	-0.325 *	0.039	-0.297 *	0.061
Some college	-0.113 *	0.036	0.226 *	0.028	0.162 *	0.020	0.293 *	0.027
College graduate	0.378 *	0.043	0.467 *	0.030	0.555 *	0.018	0.699 *	0.025
<b>Married</b>								
Number of Children (under 18)	0.655 *	0.032	-0.359 *	0.018	0.188 *	0.017	-0.040 *	0.017
Lifetime history of Mental Illness	0.161 *	0.013	-0.180 *	0.008	0.028 *	0.006	-0.059 *	0.009
Lifetime history of Drug Dependence	-0.274 *	0.036	-0.222 *	0.020	-0.075 *	0.015	-0.035 *	0.017
Lifetime history of Alcohol Dependence	-0.032	0.075	-0.428 *	0.071	-0.049	0.043	-0.081	0.071
	-0.114 *	0.037	0.039	0.039	-0.036 *	0.018	-0.017	0.029



**Appendix Table D-2: Productivity Loss Due to Mortality, 2006  
by Age and Gender  
5% Discount Rate**

Age/Gender Group	Number of Alcohol-attributable Deaths <sup>1</sup>		Net Present Value of Future Earnings <sup>2</sup>	Total Loss (in millions \$)		
	Acute	Chronic		Acute	Chronic	All
(1)	(2)	(3)	(4)	(2) X (4)	(3) X (4)	[(2) + (3)] X (4)
<b>Male</b>						
<1	44	95	\$567,193.75	\$24.957	\$53.883	\$78.840
1-4	79	0	\$626,156.49	\$49.466	\$0.000	\$49.466
5-9	60	0	\$746,540.49	\$44.792	\$0.000	\$44.792
10-14	95	0	\$907,349.85	\$86.198	\$0.000	\$86.198
15-19	2,336	0	\$1,090,407.80	\$2,547.193	\$0.000	\$2,547.193
20-24	4,683	90	\$1,237,511.41	\$5,795.266	\$111.376	\$5,906.642
25-29	3,669	168	\$1,296,055.02	\$4,755.226	\$217.737	\$4,972.963
20-34	3,093	299	\$1,272,602.92	\$3,936.161	\$380.508	\$4,316.669
35-39	2,939	799	\$1,185,290.92	\$3,483.570	\$947.047	\$4,430.617
40-44	3,439	1,967	\$1,054,459.31	\$3,626.286	\$2,074.121	\$5,700.407
45-49	3,236	3,189	\$881,482.53	\$2,852.477	\$2,811.048	\$5,663.525
50-54	2,655	4,054	\$677,689.75	\$1,799.266	\$2,747.354	\$4,546.621
55-59	1,709	3,750	\$455,196.88	\$777.931	\$1,706.988	\$2,484.920
60-64	1,205	2,880	\$252,984.58	\$304.846	\$728.596	\$1,033.442
65-69	776	2,151	\$128,243.12	\$99.517	\$275.851	\$375.368
70-74	818	1,822	\$61,219.90	\$50.078	\$111.543	\$161.621
75-79	959	1,611	\$25,485.66	\$24.441	\$41.057	\$65.498
80-84	1,033	1,280	\$11,591.41	\$11.974	\$14.837	\$26.811
85+	1,312	1,164	\$3,239.41	\$4.250	\$3.771	\$8.021

Age/Gender Group	Number of Alcohol-attributable Deaths <sup>1</sup>		Net Present Value of Future Earnings <sup>2</sup>	Total Loss (in millions \$)		
	Acute	Chronic		Acute	Chronic	All
(1)	(2)	(3)	(4)	(2) X (4)	(3) X (4)	[(2) + (3)] X (4)
<b>Female</b>						
<1	34	55	\$434,805.07	\$14.783	\$23.914	\$38.698
1-4	60	0	\$479,850.14	\$28.791	\$0.000	\$28.791
5-9	50	0	\$571,979.71	\$28.599	\$0.000	\$28.599
10-14	64	1	\$695,057.56	\$44.484	\$0.695	\$45.179
15-19	602	0	\$824,197.46	\$496.167	\$0.000	\$496.167
20-24	953	21	\$908,219.70	\$865.533	\$19.073	\$884.606
25-29	802	56	\$911,297.56	\$730.861	\$51.033	\$781.893
20-34	842	129	\$862,504.97	\$726.229	\$111.263	\$837.492
35-39	981	346	\$781,857.95	\$767.003	\$270.523	\$1,037.525
40-44	1,246	813	\$674,678.63	\$840.650	\$548.514	\$1,389.163
45-49	1,161	1,250	\$547,276.10	\$635.388	\$684.095	\$1,319.483
50-54	897	1,279	\$403,804.10	\$362.212	\$516.465	\$878.678
55-59	602	1,181	\$256,522.54	\$154.427	\$302.953	\$457.380
60-64	446	1,010	\$136,778.93	\$61.003	\$138.147	\$199.150
65-69	348	912	\$63,957.07	\$22.257	\$58.329	\$80.586
70-74	412	921	\$28,544.78	\$11.760	\$26.290	\$38.050
75-79	587	906	\$12,136.98	\$7.124	\$10.996	\$18.121
80-84	815	902	\$5,050.54	\$4.116	\$4.556	\$8.672
85+	1783	1254	\$888.59	\$1.584	\$1.114	\$2.699
<b>Total</b>	<b>46,825</b>	<b>36,355</b>		<b>\$36,076.867</b>	<b>\$14,993.678</b>	<b>\$51,070.545</b>

<sup>1</sup> ARDI-based mortality estimates, November 3, 2009.

<sup>2</sup> Wendy Max, Dorothy Rice, Hai-Yen Sung, Martha Michel (2004) "Valuing Human Life: Estimating the PVLE, 2000." posted at the eScholarship Repository, University of California <http://repositories.cdlib.org/ctcre/esarn/PVLE2000>.

The inflation calculator on <http://data.bls.gov/cgi-bin/cpicalc.pl> was used to inflate the 2000 values 17.07% to obtain estimates for 2006.

**Appendix E:  
Supplemental Tables  
for Criminal Justice System Costs**



Appendix Table E-1: Productivity Losses for Incarcerations Attributable to Excessive Alcohol Consumption, 2006

Type of Offense	Number of Persons Incarcerated, 2006						AAF		Mean Annual Compensation Costs <sup>3</sup>		Total Costs (in millions)		Total Cost (in millions)
	Federal & State Prisons <sup>1</sup>		Local Jails <sup>2</sup>		Prison	Jail	Males	Females	Total Costs (in millions)				
	Male	Female	Male	Female					Males	Females			
<b>Violent Crime</b>													
Homicide	152,373	10,091	18,109	1,584	0.470	0.470	\$50,455	\$27,145	\$4,042.775	\$148.966	\$4,191.741		
Forcible Rape	46,710	299	4,665	46	0.283	0.311	\$50,455	\$27,145	\$740.528	\$2.690	\$743.218		
Other Sex Offenses	93,048	1,057	20,679	793	0.215	0.188	\$50,455	\$27,145	\$1,205.937	\$10.214	\$1,216.151		
Aggravated Assault	128,781	6,996	82,648	7,134	0.294	0.226	\$50,455	\$27,145	\$2,855.384	\$99.684	\$2,955.068		
Other Assault	7,538	1,415	8,174	1,732	0.188	0.138	\$50,455	\$27,145	\$128.180	\$13.687	\$141.868		
<b>Property Crime</b>													
Robbery	174,054	6,316	39,352	3,176	0.265	0.187	\$50,455	\$27,145	\$2,700.111	\$61.595	\$2,761.706		
Burglary	103,831	3,450	48,984	2,546	0.272	0.219	\$50,455	\$27,145	\$1,967.229	\$40.627	\$2,007.856		
Larceny - theft	57,241	8,347	55,758	10,575	0.199	0.161	\$50,455	\$27,145	\$1,028.008	\$91.333	\$1,119.341		
Motor vehicle theft	21,634	1,056	13,831	1,251	0.222	0.231	\$50,455	\$27,145	\$403.007	\$14.199	\$417.206		
Vandalism	3,128	373	4,598	344	0.268	0.192	\$50,455	\$27,145	\$86.976	\$4.512	\$91.488		
<b>Alcohol Crime</b>													
Driving Under The Influence	32,791	1,797	44,511	4,175	1.000	1.000	\$50,455	\$27,145	\$3,900.237	\$162.130	\$4,062.366		
Public Drunkenness	1,626	51	7,207	751	1.000	1.000	\$50,455	\$27,145	\$445.683	\$21.772	\$467.455		
Liquor laws	0	26	368	0	1.000	1.000	\$50,455	\$27,145	\$18.547	\$0.707	\$19.254		
<b>Other</b>													
Offenses Against Family & Children	3,778	520	11,776	1,462	0.125	0.095	\$50,455	\$27,145	\$80.085	\$5.522	\$85.607		
All Other	557,905	59,277	316,347	53,242	N/A	N/A							
<b>Total</b>	<b>1,384,438</b>	<b>101,072</b>	<b>677,007</b>	<b>88,812</b>					<b>\$19,602.686</b>	<b>\$677.638</b>	<b>\$20,280.324</b>		

<sup>1</sup> Total number of federal and state incarcerated persons obtained from Sourcebook of Criminal Justice Statistics Online, Table 6.13.08 <http://www.albany.edu/sourcebook/csv/t6132008.csv>. The share of prisoners by offense based on Lewin analysis of the Survey of Inmates in State and Federal Correctional Facilities, 2004.

<sup>2</sup> Total number of persons incarcerated in jail obtained from Sourcebook of Criminal Justice Statistics Online, Table 6.13.08 <http://www.albany.edu/sourcebook/csv/t6132008.csv>. The share of prisoners by offense based on Lewin analysis of the Survey of Jail Inmates, 2002

<sup>3</sup> Mean compensation estimated based on census estimates of total earnings averaged across workers and non-workers and adjusted to reflect the value of fringe benefits.

Appendix Table E-2: Share of Arrests Attributable to Alcohol, 2006

Offense	Number of Arrests <sup>1</sup>				AAF <sup>2</sup>	Number of Alcohol-attributable Arrests			
	Under Age 15	Age 15-20	Age 21 or Older	Total		Under Age 15 <sup>3</sup>	Age 15-20	Age 21 or Older	Total
	(2)	(3)	(4)	(5)		(6)	(3) X (5)	(4) X (5)	(6) X (5)
<b>Violent Crime</b>									
Homicide	81	2,827	6,907	47.0%	0	1,329	3,246	4,575	
Forcible Rape	916	4,099	12,097	31.1%	0	1,275	3,762	5,037	
Other Sex Offenses	5,467	13,051	44,725	18.8%	0	2,454	8,408	10,862	
Aggravated Assault	14,405	66,981	246,092	22.6%	0	15,138	55,617	70,754	
Other Assault	71,704	203,743	677,294	13.8%	0	28,117	93,467	121,583	
<b>Property Crime</b>									
Robbery	6,023	40,003	47,501	18.7%	0	7,481	8,883	16,363	
Burglary	19,514	81,655	121,023	21.9%	0	17,882	26,504	44,386	
Larceny - theft	69,542	254,632	477,459	16.1%	0	40,996	76,871	117,867	
Motor vehicle theft	5,913	36,481	58,381	23.1%	0	8,427	13,486	21,913	
Vandalism	35,214	85,604	99,604	19.2%	0	16,436	19,124	35,560	
<b>Other</b>									
Offenses Against Family and Children	1,110	8,274	82,681	9.5%	0	786	7,855	8,641	
<b>Total</b>	<b>474,555</b>	<b>2,618,920</b>	<b>7,378,957</b>	<b>NA</b>	<b>0</b>	<b>140,319</b>	<b>317,222</b>	<b>457,542</b>	

<sup>1</sup> Number of arrests by age and type of crime are based on Lewin analysis of Table 4.7 from the Sourcebook of Criminal Justice Statistics Online, 2006 <http://www.albany.edu/sourcebook/csv/t472006.csv>

<sup>2</sup> AAFs are discussed in Section II.C.2.

<sup>3</sup> Arrests for individuals under 15 were not attributed to alcohol unless the offense was 100% attributable to alcohol.

Appendix Table E-3: Share of Arrests Attributable to Alcohol, 2006

	Under Age 15	Age 15-20	Age 21 or Older	Total
Number of Alcohol Crimes	11,146	480,726	1,425,437	1,917,309
Number of Violent and Property Alcohol-attributable Arrests	0	140,319	317,222	457,542
Total Number of Arrests	474,555	2,618,920	7,378,957	10,472,432
% of Arrests Attributable to Alcohol	0.0%	5.4%	4.3%	5.3%

**Appendix F:  
Alcohol-attributable Motor-Vehicle  
Crashes**

Table F-1: Alcohol-Involved and Alcohol-Attributable (BAC =&gt; .10) Motor-Vehicle Crash Costs, 2000

	PDO	MAIS 0	MAIS 1	MAIS 2	MAIS 3	MAIS 4	MAIS 5	Fatal	Total
Number of Alcohol-Involved Crashes <sup>1</sup>	2,301,199	262,991	372,247	91,714	36,244	8,578	3,771	16,792	3,093,536
Number of Crashes with BAC>0.10 <sup>2</sup>	1,984,677	161,879	221,575	69,286	23,060	6,100	2,981	13,277	2,482,835
Alcohol-attributable % of Alcohol-Involved Crashes <sup>3</sup>	86.2%	61.6%	59.5%	75.5%	63.6%	71.1%	79.1%	79.1%	80.3%
<b>Unit Costs for Alcohol-Involved Crashes<sup>4</sup></b>									
Insurance Administration	\$116	\$80	\$495	\$6,240	\$16,390	\$24,184	\$48,232	\$35,472	NA
Legal Costs	\$0	\$0	\$172	\$6,023	\$17,223	\$37,464	\$88,753	\$102,138	NA
Travel Delay	\$803	\$773	\$777	\$846	\$940	\$999	\$9,148	\$9,148	NA
Property Damage	\$1,484	\$1,019	\$3,844	\$3,954	\$6,799	\$9,833	\$9,446	\$10,273	NA
<b>Total</b>	<b>\$2,403</b>	<b>\$1,872</b>	<b>\$5,288</b>	<b>\$17,063</b>	<b>\$41,352</b>	<b>\$72,480</b>	<b>\$155,579</b>	<b>\$157,031</b>	<b>NA</b>
<b>Total Cost for Alcohol-attributable Crashes with BAC =&gt; .10 (in Millions)</b>									
Insurance Administration	\$230.101	\$12.948	\$109.637	\$432.056	\$377.800	\$147.496	\$143.870	\$471.152	\$1,925.060
Legal Costs	\$0.000	\$0.000	\$38.096	\$417.057	\$397.011	\$228.491	\$264.738	\$1,356.645	\$2,702.038
Travel Delay	\$1,592.858	\$125.228	\$172.095	\$58.580	\$21.668	\$6.093	\$27.287	\$121.508	\$2,125.318
Property Damage	\$2,943.712	\$165.081	\$851.396	\$273.791	\$156.725	\$59.971	\$28.176	\$136.451	\$4,615.303
<b>Total</b>	<b>\$4,766.671</b>	<b>\$303.257</b>	<b>\$1,171.224</b>	<b>\$1,181.484</b>	<b>\$953.204</b>	<b>\$442.051</b>	<b>\$464.071</b>	<b>\$2,085.756</b>	<b>\$11,367.718</b>

Source: "The Economic Impact of Motor Vehicle Crashes, 2000" (NHTSA Technical Report), May 2002.

<sup>1</sup> Alcohol-involved Crashes drawn from Table 10 column 6 page 38.

<sup>2</sup> Number of crashes with a BAC>0.10 drawn from Table 10 column 4 page 38.

<sup>3</sup> Alcohol-attributable share was equal to the share of all alcohol-involved crashes with a BAC >0.10.

<sup>4</sup> Unit cost estimates drawn from Table 12 page 41. Unit costs are on a per-person basis for all injury levels. PDO costs are on a per damaged vehicle basis. Medical Insurance costs were excluded from the insurance administration costs as these costs are summarized in the health care section of this report.

MAIS: Maximum Abbreviated Injury Scale - a classification system for assessing impact injury severity

PDO: Property damage only



Table F-2: Alcohol-Involved and Alcohol-Caused Motor Vehicle Crash Costs, 2000

	PDO	MAIS 0	MAIS 1	MAIS 2	MAIS 3	MAIS 4	MAIS 5	Fatal	Total
Number of Alcohol-Involved Crashes <sup>1</sup>	2,301,199	262,991	372,247	91,714	36,244	8,578	3,771	16,792	3,093,536
Number of Alcohol-Caused Crashes <sup>2</sup>	1,963,718	183,511	254,989	72,082	25,763	6,502	3,047	13,570	2,523,182
Alcohol-attributable % of Alcohol-Involved Crashes <sup>3</sup>	85.3%	69.8%	68.5%	78.6%	71.1%	75.8%	80.8%	80.8%	81.6%
<b>Unit Costs for Alcohol-Involved Crashes<sup>4</sup></b>									
Insurance Administration	\$116	\$80	\$495	\$6,240	\$16,390	\$24,184	\$48,232	\$35,472	NA
Legal Costs	\$0	\$0	\$172	\$6,023	\$17,223	\$37,464	\$88,753	\$102,138	NA
Travel Delay	\$803	\$773	\$777	\$846	\$940	\$999	\$9,148	\$9,148	NA
Property Damage	\$1,484	\$1,019	\$3,844	\$3,954	\$6,799	\$9,833	\$9,446	\$10,273	NA
<b>Total</b>	<b>\$2,403</b>	<b>\$1,872</b>	<b>\$5,288</b>	<b>\$17,063</b>	<b>\$41,352</b>	<b>\$72,480</b>	<b>\$155,579</b>	<b>\$157,031</b>	<b>NA</b>
<b>Total Cost for Alcohol-Caused Crashes (in Millions)</b>									
Insurance Administration	\$227.699	\$14.672	\$126.221	\$449.796	\$472.352	\$157.246	\$146.962	\$481.278	\$2,026.225
Legal Costs	\$0.000	\$0.000	\$43.858	\$434.181	\$443.828	\$243.596	\$270.428	\$1,385.802	\$2,821.692
Travel Delay	\$1,576.227	\$141.898	\$198.127	\$60.986	\$24.223	\$6.496	\$27.874	\$124.119	\$2,159.949
Property Damage	\$2,912.977	\$187.056	\$980.178	\$285.033	\$175.207	\$63.935	\$28.782	\$139.383	\$4,772.551
<b>Total</b>	<b>\$4,716.903</b>	<b>\$343.625</b>	<b>\$1,348.384</b>	<b>\$1,229.995</b>	<b>\$1,065.610</b>	<b>\$471.272</b>	<b>\$474.045</b>	<b>\$2,130.583</b>	<b>\$11,780.417</b>

Source: "The Economic Impact of Motor Vehicle Crashes, 2000" (NHTSA Technical Report), May 2002.

<sup>1</sup> Alcohol-involved crashes drawn from Table 10 column 6 page 38.

<sup>2</sup> Number of alcohol-caused crashes drawn from Table 13 column 5 page 42.

<sup>3</sup> Alcohol-caused share was equal to the share of all alcohol-involved crashes caused by alcohol.

<sup>4</sup> Unit cost estimates drawn from Table 12 page 41. Unit costs are on a per-person basis for all injury levels. PDO costs are on a per damaged vehicle basis. Medical insurance costs (page 78, i.e., 7.46%) were excluded from the insurance administration costs as these costs are summarized in the health care section.

Appendix Table F-3: Alcohol-caused Motor-Vehicle Crash Costs, 2006

Component Costs	2000 Costs <sup>1</sup>	Trends, 2000-2006		Total Estimated Cost (in millions \$)
		Price	Number of Fatal Crashes with BAC=>.08	
(1)	(2)	(3)	(4)	(5)
Insurance Administration	\$2,026.225	1.171	1.031	\$2,445.220
Legal Costs	\$2,821.692	1.171	1.031	\$3,405.179
Travel Delay	\$2,159.949	1.171	1.031	\$2,606.597
Property Damage	\$4,772.551	1.171	1.031	\$5,759.450
<b>Total</b>	<b>\$11,780.417</b>	<b>1.171</b>	<b>1.031</b>	<b>\$14,216.446</b>

<sup>1</sup> From Appendix Table F-2.

Table F-4: Alcohol-attributable Motor Vehicle Traffic Crash Costs in the United States, 2006  
Comparison of 0.10 BAC vs. Alcohol-caused  
(in millions)

Cost Category	≥0.10 BAC (Base case)	Alcohol-caused Attribution
<b>Health Care Costs</b>		
Primary Diagnoses Attributable to Alcohol	\$688.539	\$778.840
Inpatient Hospital	\$449.107	\$508.006
Physician Office and Hospital Ambulatory Care	\$131.430	\$148.667
Retail Pharmacy and Other Health Professional	\$108.002	\$122.167
Health Insurance Administration	\$56.511	\$63.922
<b>Total, Health Care Costs</b>	<b>\$745.050</b>	<b>\$842.761</b>
Institutionalization/Hospitalization	\$10.908	\$12.166
Motor Vehicle Crashes	\$13,718.406	\$14,216.446
<b>Total</b>	<b>\$15,907.954</b>	<b>\$16,692.974</b>

**Appendix G:  
Comparison of Alcohol-Attributable  
Conditions and Fractions  
to Previous Research**

Table G-1: Comparison of Attribution Assumptions to Prior Research

Chronic Conditions	Current Study			Harwood 1998		
	ICD-9	AAF	Age	ICD-9	AAF <sup>1</sup>	Age
Alcoholic psychosis	291	1.00	>20	291	1.00	>0
Alcohol abuse	305.0, 303.0	1.00	>20	305	1.00	>0
Alcohol dependence syndrome	303.9	1.00	>20	303	1.00	>0
Alcoholic polyneuropathy	357.5	1.00	>20	357.5	1.00	>0
Degeneration of nervous system due to alcohol	*	1.00	>20	Not included		
Alcoholic myopathy	*	1.00	>20	Not included		
Alcoholic cardiomyopathy	425.5	1.00	>20	425.5	1.00	>0
Alcoholic gastritis	535.3	1.00	>20	535.3	1.00	>0
Alcoholic liver diseases	571.0-571.3	1.00	>20	571.0-571.3	1.00	>0
Fetal alcohol syndrome	655.4, 760.71	1.00	>0	Not included		
Fetus and newborn affected by maternal use of alcohol	*	1.00	>0	Not included		
Alcohol-induced chronic pancreatitis	*	1.00	>20	Not included		
Liver cirrhosis, unspecified						
Other chronic liver disease	571.5-571.9	0.40	≥20	571.5	0.50	≥35
Unspecified chronic liver disease				571.8	0.50	≥35
Acute pancreatitis	577	0.24	≥20	571.9	0.50	≥35
Chronic pancreatitis	577.1	0.84	≥20	577	0.42	≥35
Portal hypertension	572.3	0.40	≥20	577.1	0.60	≥35
Gastroesophageal hemorrhage	530.7	0.47	≥20	572.3	0.50	≥35
Oropharyngeal cancer	141, 143-146, 148, 149	Male: 0.06163, Female: 0.02728	≥20	530-537 (excl. 535.3)	0.10	≥35
Esophageal cancer	150	Male: 0.03547, Female: 0.01803	≥20	140-149	Male: .50 Female: .40	≥35
Liver cancer	155	Male: 0.05347, Female: 0.03671	≥20	150	0.75	≥35
Laryngeal cancer	161	Male: 0.05860,	≥20	155	0.15	≥35
				161	Male: .50	≥35



Chronic Conditions	Current Study			Harwood 1998		
	ICD-9	AAF	Age	ICD-9	AAF <sup>1</sup>	Age
Supraventricular cardiac dysrhythmia	427.0, 427.2, 427.3	Female: 0.03926 Male: 0.02011, Female: 0.01493	≥20		Female: .40 Not included	
Esophageal varices	456.0-456.2	0.40	≥20		Not included	
Stroke, ischemic	433-435, 437, 362.34	Male: 0.05107, Female: 0.01365	≥20	430-438		≥35
Stroke, hemorrhagic	430-432	Male: 0.08375, Female: 0.01713	≥20		0.07	
Ischemic heart disease	410-414	Male: 0.00210, Female: 0.00115	≥20		Not included	
Epilepsy	345	0.15	≥20		Not included	
Breast cancer, females	174	Male: 0, Female: 0.00867	≥20		Not included	
Hypertension	401-405	Male: 0.02901, Female: 0.02018	≥20	401		≥35
Psoriasis	696.1	Male: 0.00875, Female: 0.00335	≥20		Not included	
Spontaneous abortion	634	0.04	≥20		Not included	
Cholelithiasis	574	Male: -0.01214, Female: -0.00713	≥20		Not included	
Low birth weight, prematurity, intrauterine growth retardation	656.5, 764, 765	Male: 0.03434, Female: 0.02550	>0		Not included	
Chronic hepatitis	571.4	Male: 0.01778, Female: 0.00912	≥20	571.4	0.50	≥35
Prostate cancer	185	Male: 0.00657, Female: 0	≥20		Not included	
Diabetes mellitus		Not included				
Pneumonia and influenza		Not included		250	0.05	≥35
Stomach Cancer		Not included		480-487	0.05	≥35
Tuberculosis		Not included		151	0.20	≥35
		Not included		011-012	0.25	≥35

<sup>1</sup> 1994 Alcohol Attribution Factors taken from tables 5.5 and A.1. Nonfatal Acute AAFs taken from table 4.9

Table G-1: Comparison of Attribution Assumptions to Prior Research

Acute Conditions	Current Study			Harwood 1998		
	ICD-9	AAF	Age	ICD-9	AAF <sup>1</sup>	Age
Alcohol poisoning	980.0, 980.1, E860.0, E860.1, E860.2, E860.9	1.00	>15	E860.0, E860.1	1.00	>0
Suicide by and exposure to alcohol	*	1.00	>15	Not included		
Excessive blood level of alcohol	790.3	1.00	>15	790.3	1.00	>0
Air-space transport accidents	E840-E845	Fatal: 0.18, Nonfatal: 0.058	≥15	E840-E845	0.16	>0
Inhalation and ingestion of food causing obstruction of respiratory tract or suffocation	E911	Fatal: 0.18, Nonfatal: 0.058	≥15	E911	0.25	≥15
Child Maltreatment	E960-E968	Fatal: 0.16, Nonfatal: 0.058	≤14	Not included		
Unintentional drowning/submersion	E910	Fatal: 0.34, Nonfatal: 0.058	≥15	E910	0.38	>0
Accidental Falls	E880-E888, E848	Fatal: 0.32, Nonfatal: 0.058	≥15	E880-E888	0.35	≥15
Accidents caused by fire and flames	E890-E899	Fatal: 0.42, Nonfatal: 0.058	≥15	E890-E899	0.45	>0
Accidents caused by firearm and air gun missile	E922	Fatal: 0.18, Nonfatal: 0.058	≥15	E922	0.25	≥15
Assault/Homicide	E960-E969	Fatal: 0.47, Nonfatal: 0.267	≥15	E960-E969	0.46	≥15
Accidents due to excessive cold	E901	Fatal: 0.42, Nonfatal: 0.058	≥15	E901	0.25	≥15
Occupational and machine injuries	E917-E920	Fatal: 0.18, Nonfatal: 0.058	≥15	E917-E920	0.25	≥15
Other road vehicle crashes	E800-E807, E876-E829	Fatal: 0.18, Nonfatal: 0.058	≥15	E826, E829	0.20	>0
Poisoning (not alcohol)	E850-E869	Fatal: 0.29, Nonfatal: 0.058	≥15	Not included		
Suicide	E950-E959	Fatal: 0.23, Nonfatal: 0.058	≥15	E950-E959	0.28	≥15
Water transport accidents	E830-E838	Fatal: 0.18, Nonfatal: 0.058	≥15	E830-E838	0.20	>0
All Nonfatal Injuries		Not included		800-995	Nonfatal: 0.10	>0
Other injuries and adverse affects		Not included		E980	0.25	≥15
Motor-vehicle nontraffic crashes	E820-E825	Fatal: 0.18, Nonfatal: 0.058	≥15	E810-E825	Fatal: 0.42 Nonfatal: 0.10	>0

Acute Conditions	Current Study		Harwood 1998		
	ICD-9	AAF	ICD-9	AAF <sup>1</sup>	
Motor-vehicle traffic crashes	E810-E819	Males:	E810-E825	Fatal: 0.42 Nonfatal: 0.10	Age >0
		0-14: 0.16			
		15-19: 0.26			
		20-24: 0.46			
		25-34: 0.48			
		35-44: 0.47			
		45-54: 0.39			
		55-64: 0.27			
		65+: 0.13			
		Females:			
		0-14: 0.16			
		15-19: 0.20			
		20-24: 0.36			
		25-34: 0.37			
		35-44: 0.36			
45-54: 0.26					
55-64: 0.17					
65+: 0.09					
		Nonfatal (all): 0.061			

<sup>1</sup> 1994 Alcohol Attribution Factors taken from tables 5.5 and A.1. Nonfatal acute AAFs taken from table 4.9

\* means not present in ICD-9

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## Confronting College Student Drinking: A Campus Case Study

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### Abstract

California State University, Chico is a mid-sized, comprehensive public university with a bright history. This campus has a long and proud legacy of academic quality and notable accomplishments by faculty and students. This positive history, however, has been clouded by a darker story. At the center of this shadow side is student alcohol abuse and the school's reputation as a "party school." To be sure, this "party school" story has been embellished by mass media and hand-me-down tales of drinking bravado. Still, student drinking has long been a challenge for campus leaders at CSU, Chico, constantly threatening the quality of academic life, as well as student health and safety. This report describes the history of the student alcohol issue at CSU, Chico and of campus efforts to prevent alcohol abuse. After placing this campus' experience in a national context, we trace the origins and course of the "party school" legacy at CSU, Chico from the 1920s onward. We then describe the beginnings of prevention efforts in focused prevention efforts after the infamous Pioneer Days riot of 1987. Recent data on student drinking are presented, based on questionnaires and breath-testing surveys. We then describe how the campus has sought to broaden and intensify its prevention efforts within a social ecology framework. These steps have focused on shaping conditions in the campus and community likely to influence students' choices about drinking. Longitudinal data are then presented to address whether these efforts have made a difference. Lessons are drawn, and recommendations are offered other college campuses for preventing student alcohol abuse. These recommendations assume that student alcohol abuse is a multi-causal problem, the result of a host of influences, including societal context, family background, attitudes and values, community context, and curricular and co-curricular factors on the campus. Therefore, prevention programs must be comprehensive, focusing both on students' own attitudes and on environmental influences within the institution's control in the community and campus. The social ecology framework with its focus on the individual and on environmental management is very useful for guiding such efforts.

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*Keywords:* alcohol, substance abuse, student health, college health

### Introduction

California State University has a long and proud history, a history, however, that has been clouded by a tradition of drinking on the part of students. Over the years and under different administrations efforts have been made to eradicate the problem of excessive student drinking.

In recent years, however, the entire campus community has been moved to do more. This collective commitment — stirred in part by the tragic, alcohol-related deaths of several students between 1996 and 2000 — has emerged from a growing consensus among administrators,

faculty, staff, and student leaders at CSU, Chico that the educational and personal development of students — and their health and safety — would be better served if we could reduce the harmful influences of alcohol. This report describes the alcohol-abuse prevention efforts at CSU, Chico that have resulted.

We have written this report to illustrate how our campus has sought to implement a comprehensive, multi-targeted prevention strategy with an emphasis on environmental management. At the beginning, we did not know about this term. But you will see that the efforts



described in this report clearly followed this approach.

William DeJong and his colleagues (DeJong & Langford, 2002, p. 141) at the Higher Education Center for Alcohol and Other Drug Prevention have noted that colleges and universities historically have focused on changing attitudes and beliefs of individual students.

“Historically, institutions of higher education have focused on education and intervention strategies oriented to individual students. This approach has been ideologically driven. Alcoholism, problem drinking, and drug addiction are commonly viewed in the United States as problems that arise out of human weakness. The danger of alcohol and other drugs is recognized, but those who develop problems are thought either to have brought it on themselves or to have been unlucky in their genetic inheritance. This view is consonant with a U.S. ideology that values individualism and self-determination.

Typical campus prevention efforts include general awareness programs during freshman orientation, awareness weeks and other special events, and peer education programs. Faculty at some schools have begun to incorporate AOD-related (alcohol and other drugs) lessons into their courses, a process known as “curriculum infusion.” All of these programs are based on the premise that AOD problems on campus result from the ignorance of individual students about local, state, and federal laws and the dangers of AOD use. Evaluations of college-based educational programs are rare, but work in other school-based settings suggests that, while these types of educational strategies are necessary, they are insufficient by themselves.”

By contrast, the environmental management approach seeks to change not just attitudes and beliefs of individual students, and not just interpersonal influences but factors in the campus and community environments affecting student decisions about alcohol use and abuse.

Increasingly, underage and heavy drinking are seen by prevention experts as a matter of public health as well as educational quality and campus safety. Given what we know about the harm created by underage and heavy drinking, a public health perspective is indeed appropriate.

In recent years, prevention efforts in public health, whether focused on HIV/AIDS, hepatitis, teenage pregnancy, alcoholism, maternal health, obesity — or college student drinking — have been guided by a social ecology framework. This approach assumes that any health-related behavior is influenced at several levels: individual (intrapersonal), group (interpersonal), institutional (organizational), community, and public policies (Stokols, 1996; DeJong & Langford, 2002). The approach leads campus and community leaders to identify key problems at each level and solutions for dealing with those problems (“strategic objectives” is the term used by DeJong & Langford, 2002). These solutions are intended to influence students directly or indirectly toward responsible and healthy alcohol decisions. The intended outcomes are reductions in underage drinking, in heavy drinking, and in chronic consumption that negatively influences the education, personal development, health, and safety of students.

The social ecology framework also assumes these levels of influence are inter-related. What is needed, then, is a comprehensive, multi-layered, multi-targeted, integrated approach that focuses on individual students’ knowledge, beliefs, and attitudes related to alcohol and on conditions in the campus and community that influence students’ drinking behavior. Prevention approaches must be both individual-focused and environmental-focused.

DeJong and Langford (2002, p. 143) have identified several targets of intervention that focus on both these levels:

- Changing knowledge, attitudes, and behavioral intentions related to drinking (individual-focused strategy)
- Eliminating or modifying environmental factors contributing to underage or heavy



drinking (environmental management strategy)

- Non-alcoholic options in campus and community
- Health-promoting norms in social, academic, and residential environments
- Restrict on- and off-campus marketing of alcoholic beverages
- Limit alcohol availability on- and off-campus
  - Develop and enforce campus policies and local, state, and federal laws
- Reducing short-term harm from alcohol consumption
- Treating students who show evidence of problem drinking, including addiction.

This is the comprehensive approach we have sought to implement at CSU, Chico, with particular emphasis on environmental management. In sections that follow, we describe environmental-management recommendations and plans that were developed in recent years. Some of our prevention plans have been fully implemented with positive results. Others have been less successful. This is the story of both. We hope that what we have learned will be useful to other campuses. So we end the report with a section on lessons learned and advice to other campuses.

The report is written by recently-retired CSU, Chico President Manuel A. Esteban, who led these prevention efforts during his tenure (1993-2003), and by Walt Schafer, a recently-retired faculty member who worked closely with President Esteban as Assistant to the President on Alcohol Issues (2000-2003) and as Project Director of an alcohol prevention project funded by the U. S. Department of Education (2001-2003). Schafer's involvement extends further back as a member of a campus-wide alcohol task force appointed by then-President Robin Wilson in response to a serious alcohol-influenced student riot in 1987.

This report is intended especially for college presidents and other administrative leaders in higher education. Others, too, will find it useful:

- college student services professionals, especially in the field of alcohol abuse prevention;
- students who want to know more about alcohol abuse prevention for their own awareness, professional preparation, or student leadership work;
- academic scholars studying the college student alcohol problem and campus responses to it;
- parents;
- local community leaders;
- public policy-makers.

CSU, Chico's alcohol issues and challenges are not unique. College student drinking is a major national problem — one with origins in teenage drinking, long before first-year students arrive on campus. We now examine this national context.

### **College Student Drinking: A Nation Wide Challenge**

Is the typical United State college student a heavy drinker? The answer is no. Several national surveys document that heavy consumption is not typical of the majority of students. According to the Harvard School of Public Health College Alcohol Study, the NIAAA Monitoring the Future Survey, the Core Alcohol and Other Drug Survey and the National College Health Assessment, most college students are not heavy drinkers — in fact the majority drink moderately or not at all.

But there is more to the story. Although the majority are not problem drinkers, a minority of students tend to drink most of the alcohol consumed by students in any given week. Most are drinking some and some are drinking way too much (Johannessen, 2003, p. 4).

Despite evidence that most students drink responsibly most of the time, recent alcohol-related deaths of students at a number of campuses have heightened awareness of the seriousness of heavy college-age drinking as a national problem. **Nationwide studies by Wechsler and colleagues (1994, 1998, 2000, 2002) indicate that nearly half (41% - 47%) of college students report drinking five or more**



drinks at a sitting at least once during the past two weeks. While Wechsler's recent study (Wechsler, Lee and Kuo, 2002) suggests a growing percentage of abstainers, a slight increase in the proportion of heavy drinking among college students was also reported.

It is clear that most college students who drink do not begin when they arrive on campus. In fact, one recent study found that the median age at which children begin drinking is 15.7 years old. One in four high school students were found to engage in episodic heavy drinking (5 or more drinks in a row at least once in last two weeks). Youth who drink before age 15 are four times more likely to develop alcohol dependence than those who begin at age 21. Underage drinkers are responsible for almost 20% of all alcohol consumed in the United States. (For references to these and other statistics, see <http://www.madd.org/stats>)

Alcohol use is not new on American college campuses. National surveys a quarter century ago (1974 and 1978) found substantial alcohol consumption by young people (Rachel, Maisto, Guess & Hubbard, 1981). Eight of ten college students in 1986 were found to have consumed alcohol within the last month (Johnston, O'Malley, & Bachman, 1988). Evidence from the Harvard School of Public Health College Alcohol Study suggests that total consumption and episodic heavy drinking have remained fairly unchanged throughout the past decade, although a slight increase in abstinence has been reported (Wechsler et al., 2002).

\* What concerns parents, professionals, and all who must deal with student drinking is not drinking itself, although it is a serious problem in and of itself and is illegal under age 21 in most states, but its consequences. The Task Force of the National Advisory Council on Alcohol Abuse and Alcoholism reported in 2002, "The consequences of excessive and underage drinking affect virtually all college campuses, college communities, and college students, whether they choose to drink or not" (Task Force, 2002, p. 4).

Here are illustrative statistics revealing some of the harm to the personal, social, and educational development of college students in this country from alcohol.

- \* **Death:** 1,400 college students between the ages of 18 and 24 die each year from alcohol related unintentional injuries, including motor vehicle crashes (Hingson, Hereen, Kakocs, Kopstein, & Wechsler, 2002).
- \* **Injury:** 500,000 students between the ages of 18 and 24 are unintentionally injured under the influence of alcohol (Hingson et al., 2002).
- \* **Assault:** More than 600,000 students between the ages of 18 and 24 are assaulted by another student who has been drinking (Hingson et al., 2002).
- \* **Sexual Abuse:** More than 70,000 students between the ages of 18 and 24 are victims of alcohol related sexual assault or date rape (Hingson et al., 2002).
- \* **Unsafe Sex:** 400,000 students between the ages of 18 and 24 had unprotected sex and more than 100,000 students between the ages of 18 and 24 report having been too intoxicated to know if they consented to having sex (Hingson et al., 2002).
- \* **Academic Problems:** About 25% of college students report academic consequences of their drinking including missing class, falling behind, doing poorly on exams or papers, and receiving lower grades overall (Engs, Diebold, & Hanson., 1996; Presley, Meilman, & Cashin, 1996; Presley, Meilman., Cashin, & Lyerla, 1996; Wechsler et al., 2002).
- \* **Health Problems/Suicide Attempts:** More than 150,000 students develop an alcohol-related health problem (Hingson et al., 2002) and between 1.2 and 1.5 % of students indicate that they tried to commit suicide within the past year due to drinking or drug use (Presley et al., 1996a).



⊗ **Drunk Driving:** 2.1 million students between the ages of 18 and 24 drove under the influence of alcohol last year (Hingson et al., 2002).

⊗ **Vandalism:** About 11% of college student drinkers report that they have damaged property while under the influence of alcohol (Wechsler et al., 2002).

⊗ **Property Damage:** More than 25% of administrators from schools with relatively low drinking levels and over 50% from schools with high drinking levels say their campuses have a "moderate" or "major" problem with alcohol related property damage (Wechsler et al., 1995).

⊗ **Police Involvement:** About 5% of four-year college students are involved with the police or campus security as a result of their drinking (Wechsler et al., 2002) and an estimated 110,000 students between the ages of 18 and 24 are arrested for an alcohol related violation such as public drunkenness or driving under the influence (Hingson et al., 2002).

⊗ **Alcohol Abuse and Dependence:** 31% of college students met criteria for a diagnosis of alcohol abuse and 6% for a diagnosis of alcohol dependence in the past 12 months, according to questionnaire based self reports about their drinking (Knight, Wechsler, Juo, Seibring, Weitzman & Schuckit, 2002).

Greatest harm results from recurrent episodes of heavy drinking. This pattern of student drinking variously has been called "binge drinking," "high-risk drinking," "heavy drinking," and "episodic heavy drinking." Sometimes this is defined by experts as five or more drinks in a row. Other experts use five in a row for men and four in a row for women. Throughout this report we will use the term *episodic heavy drinking*.

Studies consistently show that episodic heavy drinkers experience far more serious negative consequences than others. They are more likely, for example, to report doing something they later regretted, missing class, forgetting where they are or what they did, doing poorly on a test, falling behind in schoolwork, engaging in

unplanned and unprotected sex, fighting, being injured or hurt, arguing with friends, and getting in trouble with campus and community authorities (Wechsler, 1994, 1998, 2000).

Like cigarette smoking, episodic heavy drinking has secondary effects. Thus, college students report widespread problems from other students' drinking. These include, for example, interrupted sleep and study, being insulted or humiliated, having to take care of an inebriated friend or roommate, having a serious quarrel, unwanted sexual advances, being sexually abused or raped, being physically assaulted, and having property damaged (Wechsler et al., 2002). These and other harmful consequences have been found to be highest at campuses with high rates of episodic heavy drinking (Wechsler et al., 1995).

Nationwide concern about college student alcohol abuse and its harmful consequences led the U. S. Department of Education to fund a national center for addressing the problem (Higher Education Center for Alcohol and Other Drug Prevention) and a national grant program to colleges for alcohol abuse prevention. The National Institutes of Health appointed a high-level Task Force of the National Advisory Council on Alcohol Abuse and Alcoholism. The U. S. Surgeon General established a 50% reduction in episodic heavy drinking among college students by the year 2010 as a national "Healthy People" goal.

In short, most American college students began drinking in high school or before. Most drink responsibly most of the time while in college or don't drink at all. Yet the minority who do drink excessively – especially episodic heavy drinkers – create a host of problems for themselves and others that greatly concern parents, higher education leaders and faculty, and public policy makers.

In order to understand alcohol prevention efforts at California State University, Chico, it is important to know something about the campus itself.



### **The Setting: California State University, Chico**

California State University, Chico is a comprehensive, regional campus that awards baccalaureate and masters degrees. The campus opened in 1889 as Chico State Normal School with 90 students and five faculty members. Over the years it evolved to become Chico Teachers College, Chico State College, and, in 1972, California State University, Chico. It is part of the 23-campus California State University system. The campus is located 90 miles north of Sacramento (174 miles northeast of San Francisco) at the eastern edge of the Sacramento Valley and at the base of the Sierra Nevada foothills. It is surrounded by the community of Chico, an agricultural, retail, health care, and educational regional center with approximately 100,000 residents.

CSU, Chico enrolls approximately 16,000 students whose average age is 24. Eighty-eight percent of the student body is made up of undergraduates. Although students come from 64 nations, 47 states and one U.S. territory, 95% come from California. This is a residential campus with nearly all students living away from home. Approximately 2,400 live in campus residence halls, most others in apartment complexes and rental houses within one mile of campus. Living in these same student neighborhoods are several thousand students attending Chico's Butte Community College. This concentration of young people is a mixed blessing for the community. On one hand, students add considerably to the local economy. On the other hand, the dense student neighborhoods generate substantial rowdy behavior and illegal activity often fueled by alcohol.

Most students are white (65%). Hispanics (10%) are the next largest group, followed by Asians (4%), African Americans (2%) and American Indians and Pacific Islanders (1% each). Sixteen percent are other or unknown. More than half of students are female (54%). The average high school grade point average is 3.4, and the mean composite SAT score is 1060.

Baccalaureate degrees are given through 68 departments or programs (liberal arts and professional), while masters degrees are given in 30 fields. Many other credentials and certificates are also offered. The campus offers a host of on-line programs and degrees to the northern California region it serves.

The campus recognizes more than 240 student organizations, including fraternities, sororities, and academic, special interest, social, and professional groups. It competes in a number of Division II varsity sports, as well as many club sports. It has an active Recreation Sports program, although facilities are limited, partly because the campus is land-bound in the midst of Chico.

As noted earlier, CSU, Chico has a long history as a first-rate academic institution with a host of distinguished faculty, notable student achievements, many millions of dollars of grants and contracts, and widely respected academic programs. This is reflected in CSU, Chico being listed by *U.S. News and World Report* among the highest ranked western, public, master's universities during the past several years — sixth in 2000, fifth in 2001, tied for third in 2002, fourth in 2003, and third in 2004.

Unfortunately, the "party school" legacy has sometimes received more public attention than our academic reputation of excellence. One of our leadership challenges has been how best to counter this "party school" legacy, which sadly has persisted in public opinion and the media, despite progress we have made in addressing alcohol abuse and in building academic excellence. We now examine the origins of the "party school" legacy at CSU, Chico

### **The "Party School" Legacy at CSU, Chico**

As CSU, Chico has sought in recent years to reduce underage and episodic heavy drinking, it has had to grapple with a major burden — its legacy as an alleged "party school." This image has a long history, which remains problematic in several potential ways. One is discouraging some excellent students from ever applying here. Another is attracting some students to a campus believed to have a "drinking culture" — perhaps



not the type of student with strong academic interests. Once here, some students might be led to drink more because of their perception — misguided or not — that frequent or heavy drinking is what most students do here and is the best way to find friends and fit in.

CSU, Chico's reputation as a party school traces back over eight decades ago to campus-based alcohol-fueled celebration. To be sure, the reality of underage and heavy drinking has not always been pretty at CSU, Chico. However, media coverage over the years has not only perpetuated but has embellished and at times even stimulated alcohol misuse by students. This media embellishment in turn helped fuel word-of-mouth diffusion, also embellished with anecdotal stories, about CSU, Chico's alleged partying. The result of factual history, media embellishment, and word-of-mouth diffusion has been inheritance by the present generation of faculty, staff, and students of the unwanted and damaging "party school" reputation.

As noted, there has always been some basis in fact for the reputation. We now turn to the roots of the drinking tradition.

Pioneer Days had its origins eight decades ago as a campus celebration of the town's pioneer heritage. For many years, this annual, week long event was seen as a positive opportunity to strengthen town-gown relations and to heighten current students' awareness of Chico's illustrious Pioneer past. In 1919 the first Senior Day was held at Chico Normal School, as California State University, Chico was then called. In the mid-1920s, Senior Day evolved into Pioneer Day (later, Pioneer Days, still later Pioneer Week), partly influenced by the Days of '49 celebration 90 miles south in Sacramento.

As reported in the local daily newspaper at the time "The purpose of the [Senior Day] is to bring high school seniors here annually to afford them opportunity to inspect the excellent facilities of the institution" in hopes of increasing college enrollment (Chico Record, May 16, 1919, p. 5).

From early on, however, Pioneer Days had another, darker side. This duality was described as follows by Matthew Meyer, an anthropologist who studied the history of Pioneer Days.

"The Pioneer Day celebration would develop two 'faces.' One was a testament to the ingenuity, hard work, and perseverance attributed to the forefathers, the pioneers; this was the shining, public, 'day' face of Pioneer Days, and it was affirmed by nearly everyone until the 1960s, when the very project of the pioneers came under widespread criticism. The other face of Pioneer Days, half-hidden, was like a dirty little secret: it involved drunken debauchery and reckless neglect of safety, private property, and individual rights (not to mention school work). This second, 'night' face would plague Pioneer Days virtually from its beginning, and would, when it was discussed, earn at least the gentle admonishment of advocates of law and order. In the end, the two faces of Pioneer Days would turn out to be like two sides of a coin, and it would prove impossible to separate one from the other (Meyer, 2001, p. 28)."

Meyer also notes that as early as 1925, the CSU, Chico campus "...boasted a good deal of what would later be called "partying." Throughout the celebration, such benign activities as tug-o'-wars, prizes for costumes and beards, skits and plays, a parade, and evening dances attracted hundreds of local residents, as well as adults and high school students from throughout the northern Sacramento valley. Still, controversy about the role of alcohol in Pioneer Days became evident as early as the late 1920s. As Meyer notes, by 1929 "...the celebration would remain the same: an alcohol-aided recapitulation of the 'good old days' of freedom, adventure, and licentiousness. Accordingly, themes of wildness, sexuality, and the superiority of Euro American culture would become ingredient to Pioneer Day" (Meyer, 2001, p. 45). These days of annual "spring wildness" became "...a bona fide tradition at CSU, Chico, institutionalized for better or worse" by the late 1920s. Meyer points out that "From 1929 until 1987, Pioneer Day (or

-Week or -Days) would be held every year, through depression, war, and protest (Meyer, 2001, p. 45).

In writings about this early period, alcohol is increasingly mentioned as central to the CSU, Chico way of life, even through the Prohibition period. As Meyer notes, "Texts, including several poems, portray alcohol variously as a central aspect of CSU, Chico campus culture, a remedy brought at top speed to save the day, and highly regarded part of a romanticized, freer past" (Meyer, 2001, 52). It was noted by one campus historian that some fraternities used bathtubs to brew ales and beer during the 1930s (Meyer, 2001, p. 54).

The key role of mass media in perpetuating CSU, Chico's party school image traces back at least to the early 1940s, illustrated by this quote from (Meyer, 2001, p. 67).

"CSU, Chico had its dalliance with the national media in 1941, as the possibility of an unnamed magazine covering Pioneer Day came into view (Anonymous, 1941, p. 1). Whether this coverage was realized is unclear, but it seems doubtful, as no mention of its having happened could be found. In the future, however, the lure of publicity, be it good or bad, would prove irresistible. In the long run, CSU, Chico would not become known so much for its academic achievements as for the reputation conferred upon it, with the help of the national media, as a "party school" — largely because of the Pioneer Day celebration."

There is a certain irony in the growing publicity given to CSU, Chico. Pioneer Days was born and nourished in its early years partly to bring attention to the campus in the northern California counties it served in hopes of attracting students and ensuring campus growth. That same publicity came to haunt the campus as regional and national attention seemed increasingly to focus more on its party school image than its academic reputation.

The first known call for the abolition of Pioneer Days came in 1949, when a student wrote a

letter to the student newspaper calling for it to be abolished, due to a minority of students who "...can have a 'good time' only by drinking and horse-play (Meyer, 2001, p. 74).

The post-war period brought ever-widening publicity to Pioneer Days. Pioneer Days' "Little Nell," Sheriff, and outlaws appeared on national radio and television shows. Reporters from San Francisco, Sacramento and beyond covered the event, including sometimes-bawdy after-dark activities. CSU, Chico's reputation as a party school flourished and grew. The fact that the student newspaper, the Wildcat, asked students in 1963 whether they thought CSU, Chico was a party school indicates that image was around at that time. That there was some basis for this reputation is reflected in the fact that the number of students on academic probation had increased ten fold in seven years. The Dean of Students stated that "The greatest single factor of difficulty is in relation to drinking by minors" (Meyer, 2001, p. 92).

As noted, Pioneer Days had a dark side nearly from the beginning, much of it fueled by alcohol. This pattern of conduct continued even through the protest years of the 1960s and early 1970s when many students questioned some the core elements of the celebration, including violence and capriciousness toward women and underlying racism in stereotypical depictions of people of Chinese, Mexican, African, and Native American ancestry. As the student body grew to over 10,000 by the early 1970s, problems and controversies increased, exacerbated by tensions and divisions over the Vietnam War. A murder-rape in 1973 after a fraternity party added to the questioning of Pioneer Days' very essence. Still, the event continued, modified a bit over the years by various committees recommending changes that would preserve its positive elements while diminishing its negative features.

Among the top items on the agenda of incoming President Robin Wilson, newly arrived from his prior post as Associate Provost for Instruction at Ohio State University in 1980, was to deal with CSU, Chico's reputation as a party school. Even before he arrived, he stated to the *Orion*, the student newspaper, "This makes me think that

when there's a lot of partying going on, the educational curriculum might not be rigorous enough. If this proves to be the case, then my first effort will be to strengthen the curriculum. I want graduates to be proud of it when they say 'I'm a graduate of CSU, Chico'" (Meyer, 2001, p. 118). We will return to President Wilson's efforts to deal with Pioneer Days and the broader issue of alcohol abuse at CSU, Chico.

So it is clear that the party school image of CSU, Chico had its origins many decades ago. Events of the 1980s served to magnify this reputation. In spring 1985, following a Pioneers Day kickoff party at which a reported 6,000 people gathered for a street party near the campus, two students were killed in a drunk driving accident. One belonged to a CSU, Chico sorority. The student newspaper editorialized, "CSU, Chico's Pioneer Days have gained nationwide notoriety. Students need to decide what reputation best signifies their institution; one of academic excellence or rampant alcohol consumption" (Meyer, 2001, p. 125). Naturally, reports by local and state media served to advance the party school image of CSU, Chico, even as the school's academic stature continued to strengthen under President Wilson's leadership.

Pioneer Days witnessed a near-riot at an off-campus student housing complex in 1986 and growing tension between the Greek community (strong supporters of Pioneer Days) and President Wilson as he sought to find ways of reigning in the event without ending it completely. Press reports of these events and their aftermath reinforced the party school image of CSU, Chico.

Then in November 1986, the student newspaper reported that in its forthcoming January issue, *Playboy* would announce its "party school" rankings — with CSU, Chico ranked number one (Meyer, 2001, p.135). The campus previously had ranked number four in the magazine's 1976 "Action Chart." In response to the 1987 ranking, Meyer comments:

"Wayne Duvall, an actor and freelance writer who was listed as "compiler" of the survey results, spoke with Miller [editor of

the Chico State student newspaper] about the survey's methodology. "The quantitative part was where we called fraternities and papers at schools and asked, 'other than your own school, what school comes to mind as the number one party school?'" he told her. He said that he'd never heard of Chico State before, but that it was mentioned again and again as he polled schools across the country. Clearly Chico State had gotten a reputation around the nation, largely because of the Pioneer Day festivities (Meyer, 2001, p. 136)."

*Playboy's* ranking probably did more than everything else combined to reinforce and perpetuate CSU, Chico's party school image. "Number one" continued to be imbedded in popular culture for many years afterward, despite the campus' absence in many subsequent party school listings by the *Princeton Review* and others.

Other students and faculty thought the ranking was trivial and were critical of those who they believed took it too seriously. That the party school image did have damaging effects, at least for some students, is illustrated by the following:

"Dianne Kelley, a graduate of CSU, Chico, happened to visit her alma mater while this debate was raging. In a letter to the *Orion*, she told how she'd been encouraged by faculty at CSU, Chico to go beyond the nursing major she'd chosen, and had eventually earned a medical degree and been fairly successful. "On the other hand," she added, "I am obliged to admit that I was forced to defend my attending CSU, Chico by all my medical school interviewers. They seemed to think that a serious student would not choose to enroll at CSU, Chico (Meyer, 2001, p. 140)."

Not surprisingly, President Wilson and others were not happy about CSU, Chico's burgeoning party school image. He noted, "The problem is not whether we party or not. The problem is that the reputation of being the number one party school takes a slice off your diploma," as he encouraged campus Greek leaders to wage



media campaigns of their own to counter the image (Meyer, 2001, p. 136). In a letter to the student newspaper, a faculty member likened the party school image to "a low grade infection. It will not destroy us but we will never be totally healthy" (Meyer, p.140).

Spring 1987 brought another blow to CSU, Chico's image. Pioneer Days exploded in a full-scale riot. Just after midnight, Saturday, April 25th, 2,000 or more students converged on a popular intersection a few blocks from campus in a neighborhood densely populated by students, to "celebrate" together on the first night of that year's Pioneer Days. Police arrived, bottles were thrown, a bonfire was lit in the middle of the intersection, fights ensued, nearby businesses were broken into and vandalized, cars were damaged by young people jumping up and down on them. Some leapt through the bonfire to the cheers of the crowd. As news crews arrived and began filming (including MTV which had publicized this year's Pioneer Days beforehand), people surrounded them, chanting, "We're number one! We're number one!" Police reinforcements arrived in riot gear with helicopters circling overhead. Things turned ugly as at least 37 people were arrested, many after resisting. Many revelers were outraged at what they regarded as heavy-handedness by authorities. About half the arrestees were university students (Meyer, 2001, p. 142). Interviews of university staff who were involved in this event reveal that MTV was a major player, not only in pre-publicizing the event but in urging students to take collective actions for the cameras that they otherwise might well not have taken.

The day after the riot, President Wilson issued the following statement. "Because any repetition of the disgraceful events of last night would be intolerable, effectively immediately, California State University, Chico will not participate in, facilitate, or in any way further support the celebration of Pioneer Days..." In this and subsequent statements, Wilson largely blamed "outsiders," going to some length to praise Greeks and other student leaders for their efforts to prevent the "drunken rowdiness."

The next year, 1988, saw creation of the short-lived Rancho Chico Days, started as an alliance between the Chico business community, which stood to profit from some form of spring celebration, and the Greek community, which did not want to let go of a large-scale spring "party." After two years, this event too went down in flames following a smaller but equally ugly riot on the streets near campus.

Nevertheless, damage had been done to CSU, Chico's image. Its party school reputation had been magnified as local, state, and national media replayed the riot scenes of the last Pioneer Days and Rancho Chico Days.

Although those two celebrations are now history, students and other youth of the community and the region found other "holidays" to continue to "celebrate." TV and print media welcomed these sensational (inherently negative) stories about Chico and its university that confirmed and extended its "party school" reputation. One of these was St. Patrick's Day. For many years, bars near campus neighborhoods opened as early as 6:00 AM on St. Patrick's Day to welcome students and other youth to begin their day of drinking. A majority of students did not take the bait. Although we have no data to confirm directly this statement, we know that all the bars combined could not handle 12,000-16,000 in a single day. Still, many did, providing welcome footage for TV cameras and newspaper still-photographers. In recent years, the campus and community have cooperated to dramatically downsize the event, as will be reported later in this publication.

A second "holiday party" has been the Labor Day Sacramento River Float, just outside Chico. With school underway only one week, weather still on the hot side, and local off-sale alcohol retailers eager to market their beer, thousands of students have trekked with their inner tubes and flimsy rafts to the wide, slow-moving (but still highly dangerous) Sacramento River west of town to float some six miles downriver to a wide, gravel take-out spot. A mountain of debris usually has been left behind (some cleaned up by Greeks and other student groups). Dozens of tubers and rafters have been rescued by



volunteers and law enforcement agencies. Over the years, as word of this event has spread, again through media coverage and word-of-mouth through youth culture, the event has grown to where more than 20,000 have participated. Luckily, no drownings have occurred. However, CSU, Chico's "party school" has been extended, again partly through massive attendance by local, regional, and, sometimes, national media coverage. Again, our environmental management approach has succeeded during the past two years in downsizing the event and a campus-coalition has set further downsizing as a high priority in the immediate future.

The third "special event" has been Halloween. For many years, downtown Chico hosted a fun-filled evening in which hundreds of local residents and students congregated in downtown Chico (a few blocks from the CSU, Chico campus) to promenade for an hour or two or three past restaurants and bars with admiring observers who sometime held up cardboard-sign scores as revelers walked by. The evening was innocent and fun for many years. Then in the early 1990s, Halloween began to turn ugly, beginning with confrontations between youthful celebrants and Chico Police Department officers trying to keep streets open. Again, word spread that across California and beyond that Chico was the place to be on Halloween.

By the late 1990s, numbers had swelled many-fold. When the event attracted youth gangs motivated to use the large crowds as "cover" to turn on each other, the potential for violence and large-scale disturbance increased. The city decided in 1999 to try to contain the event by closing a number of streets in the downtown and student residence areas, and providing lots of flood lights and rest rooms in hopes that celebrants would be contained, observed, and controlled along these streets.

As it turned out, this arrangement essentially backfired with the result that youth in Chico and elsewhere perceived this as one big now-public party on the streets of Chico. The City Council, following extensive hearings, decided enough was enough, and that the event had to be "shut down." By then, however, Halloween had

become one more vehicle for perpetuation of CSU, Chico's "party school" reputation.

### **The Start of Prevention Efforts at CSU, Chico**

After the Pioneer Days debacle of 1987, former CSU, Chico President Robin Wilson (1980-1993) determined that student drinking needed to be addressed. He decided that damage to the university's reputation was becoming so great and the academic mission of the university so compromised that new, bolder, more focused measures were needed. Alcohol abuse prevention became one of his top priorities.

The shape of President Wilson's prevention efforts soon became evident: 1) permanently canceling Pioneer Days after the 1987 riot; 2) taking stock of factors in the campus and community environment that might be contributing to student alcohol abuse and the drinking culture at CSU, Chico; and 3) initiating administrative decisions, along with campus and community processes, to modify as many of these influences as possible.

As we noted previously, the environmental management framework for campus alcohol abuse prevention had not yet been identified as such by prevention experts or college administrators. Yet it was clear that President's Wilson's approach was comprehensive and multi-targeted, a strategy that focused both on attitudes and actions of individual students and on campus and community conditions influencing student's drinking decisions.

As we describe prevention efforts at CSU, Chico, it is important to note that there was no discernable "start" and "end." Rather, our prevention efforts have been and continue to be very much a process. One step leads to another which in turn leads to yet another.

A useful marker to begin describing this ongoing prevention process is a letter in July 1989 from President Wilson to the Vice President for Student Affairs setting forth a number of potential action steps. After presenting this letter, we will describe comments from a campus-wide task force appointed by Wilson to

study the feasibility of his ideas. We then examine what was and was not implemented.

"Dear \_\_\_\_\_:

The Proceedings of the Surgeon General's Workshop on Drunk Driving are now at hand, and I believe they may afford us an apt occasion to further meliorate the effects of CSU, Chico's sad reputation as a bibulous institution.

Apart from alcohol's cost to our students in lost time and academic effort, its abuse has exacted from them their share in the annual record of 24,000 dead and 534,000 injured in alcohol related traffic accidents, a casualty rate far exceeding those of World War I, the Korean Conflict, or the American experience in Southeast Asia, and a toll no civilized nation ought long to tolerate. It may well be the leading cause of death in the age group most representative of our campus student population.

I believe it important, therefore, that we bend every effort to reduce the easy tolerance for alcohol abuse fostered by the advertisers of such products. I make no hypocritic call for prohibition or abstinence (which latter only tends to make the heart grow fonder anyway), and I believe our current campus alcohol policy is both reasonable and effective. What I do call for is a series of small steps designed to alter the atmosphere of chuckling indulgence for toxicity, the campus ambience which suggest that boozing is the center not the fringe of social activity, the juvenile notion frequently sexist in tenor that "it doesn't get any better than this.

Specifically, the Surgeon General's Panel of Experts advises us as follows:

VI. Recommendation Related to Advertising: Match the level of alcoholic beverage advertising with equivalent exposure for pro health and pro safety messages.

VII. Recommendation Relating to Marketing: Restrict certain types of advertising and marketing practices, especially those which reach underage youth. Accomplish this through voluntary restraints by alcoholic beverage producers and distributors, as well as by the media and entertainment industry.

IX. Recommendation Related to Education: Consider drinking and driving education an essential component of a comprehensive public health approach to reducing alcohol impaired driving and integrate it into all health promotion and risk reduction programs. Undertake educational intervention within worksites, the family and community, health care agencies and schools.

Please note that the University itself comprises a number of agencies and entities mentioned by the Panel: we are a school, a community, and a health care agency; we operate media and entertainment facilities; and we must act if not in *loco parentis* certainly in *loco familiae*. Please note too the emphasis on underage youth and recall that 35% of our students are under legal drinking age.

Accordingly, I propose we study the feasibility of the following steps:

1. Eliminate immediately any sponsorship of campus activities by producers or distributors of alcoholic beverages. This includes donations involving a quid pro quo, joint marketing or advertising agreements, signboards, sponsorship of printed material, underwriting of athletic events, or distribution of premiums, gifts, or free samples.

2. Explore steps to reduce or eliminate the advertisement of alcoholic beverages in the Orion, either through voluntary restraint by advertisers or through the publisher's rejection of such advertising on the basis that a significant number of readers (and financial supporters of the publication, via

student activity fees) are underage. There may be issues of commercial speech involved in this action; certainly the financial impact of such a policy may be considerable. But a recent Supreme Court decision involving commercial speech at SUNY Cortland may be enabling. I do not believe University facilities should be involved in the promotion of an activity that is for a third of our students patently illegal.

3. Appeal to campus area merchants to reduce their promotion of alcoholic beverages.

4. Allocate increased resources to campus alcohol and substance abuse education programs, concentrating on the drunk driving issue.

5. Encourage local law enforcement officials to continue to tighten their oversight of public drinking in student residential areas, particularly as it may involve vehicle operation (including bicycles).

6. Instruct campus police to work with area law enforcement agencies in the application of new legislation (California Vehicle Code 13202.5) providing for loss of driving privileges for underage drinkers.

7. Ask city officials to enforce sign ordinances with regard to banners and other advertising material displayed on fraternity houses.

8. Deny campus parking privileges to those with DUI convictions.

9. Withhold indefinitely campus recognition for organizations convicted of alcohol related violations.

10. Withhold campus recognition for organizations entering into commercial or promotional agreements with producers or distributors of alcoholic beverages.

11. Persuade the campus bookstore to phase out its stock of drinking-related steins, mugs, tee shirts, and so forth.

12. Provide strong and positive rewards to Greek organizations that continue to de-emphasize alcohol.

I'm sure there are other steps to be taken, and as we explore them, I want to iterate that our position is not moral and sanctimonious, is based on no blanket condemnation of the fact that students like Edward Fitzgerald's Omar Khayyam and many of the rest of us sometimes like to "be jocund with the fruitful Grape," but is purely prudential and aimed at reducing a serious impediment to the educational process we are here to oversee. May we begin a campus wide discussion of the matter?

Robin S. Wilson, President"

In response to the letter, the Vice President for Student Affairs appointed a campus-wide faculty/ staff/ student Alcohol Abuse Task Force, chaired by the Director of Student Activities, to comment on the feasibility of implementing the 12 steps proposed by President Wilson. Below are the Task Force's comments on each of the proposed actions.

**1. Ban on-campus alcohol sponsorship, advertising, and promotions.**

*Task Force Comments:*

"The Task Force recommends that the University eliminate alcohol beverage product sponsorship connected with University events. The University should pursue the development of a consistent campus-wide policy on commercial and other co-sponsorships with University departments and programs or other on campus programs."

**2. Reduce or eliminate alcohol advertising in the Orion, the student newspaper.**

*Task Force Comments:*

"The Orion staff has reviewed its policy on alcohol advertising and has written a new policy which emphasizes: 1) encouraging

advertisers to minimize references to alcohol in their ads, 2) refusing to publish ads which take the form of cents-off coupons for alcohol drinks or which publicize events featuring reduced-price alcohol drinks, 3) publishing at no charge public-service ads which encourage moderation in alcohol consumption and which caution against drinking and driving, and 4) declining to publish ads for alcohol which exploit the California State University, Chico name, logo, or backdrop. The policy is already in effect. The Task Force endorses the Orion's policy and commends the staff for its wisdom in promulgating it".

**3. Appeal to merchants to reduce promotion of alcohol beverages.**

*Task Force Comments:*

"The Task Force recommends that the University mount a cooperative effort with businesses and business organizations to reduce alcohol promotions to the student market. The Task Force recommends that either the Director of University Outreach or the Director of University Public Events be designated to lead these efforts on behalf of the University."

**4. Increase resources for alcohol and drug education.**

*Task Force Comments:*

"The Task Force strongly recommends that the University make it a priority to provide permanent and increased support for the Campus Alcohol and Drug Education Center and the Employee Assistance Program. Educational programs and prevention services need to be supported and promoted on campus. The Task Force has included a budget to institutionalize CADEC and EAP educational programs."

**5. Enforce public drinking laws.**

*Task Force Comments:*

"Cooperation with local law enforcement should continue. The University should encourage the increased focus on the enforcement of all alcohol-related laws in conjunction with current educational programs, prevention services, and local law

enforcement efforts. Instruct campus police to take the lead in combining with other law enforcement agencies to focus on DUI arrests, specifically on Nord Avenue, in downtown Chico, and within a one-mile radius of campus."

**6. Enforce new state law providing for loss of driving privileges for Under age drinkers.**

*Task Force Comments:*

"University Police should continue to work with other law enforcement agencies to enforce alcohol-related laws. The Task Force does recognize the unfortunate lack of resources in the District Attorney's Office limiting the application of CVC 13202.5 to minors cited for driving-under-the-influence only and not the broader application sought in many areas of the state."

**7. Enforce sign ordinances related to banners and alcohol ads on fraternity houses.**

*Task Force Comments:*

"City code enforcement officials are attempting to enforce existing ordinances limiting the use of banners in residential areas."

**8. Deny campus parking privileges to students with DUI convictions.**

*Task Force Comments:*

"Current state statutes would appear to permit the President to withhold parking privileges from students convicted of driving-under-the-influence. There is, however, an apparently serious legal question as to whether this policy would be overly broad to serve the University's purpose. The ongoing collection of this data for all students would be a serious commitment of University resources. New law in California may make the collection of this information even more difficult. The enactment of such a policy applicable to faculty and staff would require consultation with the Chancellor's Office of Faculty and Staff Affairs to determine if various union agreements would allow it. The Task Force recommends that University resources



would be better spent on educational and prevention programs.”

**9. Withhold campus recognition for organizations convicted of alcohol-related violations.**

*Task Force Comments:*

“Individuals, rather than student organizations, are convicted of alcohol-related offenses. When the campus can insure that there is a direct relationship between the citation of an organization member and the activities of that organization, appropriate sanctions should be placed on the group. The Student Activities Office has been withdrawing or suspending recognition to groups so involved. The Task Force recommends that the campus continue to sanction organizations implicated for alcohol-related offenses (e.g., illegal sale, illegal sales to minors).”

**10. Withhold campus recognition for student organizations with commercial/promotional agreements with beverage companies or distributors.**

*Task Force Comments:*

“It is well settled that the First Amendment protects commercial speech, thus the Task Force recommends that the University develop a consistent University-wide co-sponsorship policy. It is further recommended that [five specific faculty and staff] be designated as the Task Force to develop such a policy.”

**11. Persuade campus bookstore to stop selling drinking-related items.**

*Task Force Comments:*

“The Associated Students Bookstore has voluntarily modified the visual content of the popular “three cats” logo (referring to Wildcats, the school’s mascot). The Task Force recommends that the University continue to encourage the AS Bookstore to limit its sales of alcohol-related items.”

**12. Provide rewards to Greek organizations that de-emphasize alcohol.**

*Task Force Comments:*

“Fraternities and sororities are addressing the issues of alcohol and substance abuse. Dry rushes, stricter policies forbidding underage drinking and alcohol in chapter houses, and policies forbidding chapter funds being used for the purchase of alcohol are examples of Greeks working on the problem at both local and national levels. The Task Force recommends that the University provide recognition for positive programs by Greek letter groups. The campus should provide continued educational support programs for Greeks.”

The Task Force added two additional recommendations of its own.

“1. The University should approach alcohol abuse within the campus community with the tool most at hand — education. The Task Force recommends that the University mount a continuous campus-wide educational effort in the areas of substance abuse, health, and wellness. Toward this end, continuous and expanded support for existing programs (e.g., CADEC, EAP) is vital. Inclusion of these issues into the student orientation program as well as the curriculum will also help.

2. The administration should do all it can do to promote wellness as a constructive alternative to “partying.” In fact, wellness might become a major campus theme for the next several years. For wellness to be translated from words into institutional action, concrete steps are needed. As a first step, we recommend appointment by the President of a Wellness Planning Committee to propose specific future steps that might be taken to strengthen and extend current programs and services for promoting wellness on this campus, especially among students. This Planning Committee would include faculty, staff, and students and would submit a report to the President by the end of the 1990 spring semester.”

In a letter to the Task Force Chair acknowledging the report a few days later, President Wilson outlined his initial commitment to action as follows:

"Dear (Director of Student Activities/  
Assistant Vice President for Student Life):

Thank you for your report of the findings of the Alcohol Abuse Task Force. It evidences thoughtful consideration of the problems of substance abuse among our students and makes solid recommendations for action. Accordingly, I am taking the following steps:

1. I have asked \_\_\_\_, Director of University Public Events, to undertake on-going consultation with local wholesalers and retailers of alcoholic beverages on how they and the University might cooperate in reducing their marketing to college students. Such action is probably contrary to the best economic interests of the firms concerned, but I have been informed that — at least among brewers and distributors — there is a strong industry sense of responsibility for alcohol-abuse education and a genuine desire, backed by time and money, to be — as \_\_\_\_ of \_\_\_\_ Distributing Company has put it to me — "a part of the solution to the problems associated with alcohol abuse."

2. In this connection, I will ask alcohol beverage distributors and retailers to join with the University in providing an annual budget of about \$70,000 for substance-abuse education. Some of these businesses are already generous contributors to CADEC (Campus Alcohol and Drug Education Center) and to the efforts of Chico State's Greek organizations to implement dry rush, and I will ask that they join with us to see if we can't make Chico and Chico State models for national emulation as our society moves toward a new regard for public sobriety.

(It is perhaps important to point out that our call for an end to "sponsorship of campus activities by producers or distributors of

alcoholic beverages" uses the word "sponsor" in its widely accepted sense of providing entertainment or other non-commercial services with the understanding that some performance time or associated space will be devoted to advertising. This by no means precludes financial support for campus activities, including but not limited to substance abuse education, from manufacturers or distributors of lawful products, whose contributions will be gratefully and publicly acknowledged. It does preclude use of activities so supported as occasions for advertising.

3. I will consult with the leadership of the Faculty Senate on how best to establish an ad hoc committee to formulate "consistent campus wide policy on commercial and other co-sponsorships with University departments and programs...."

4. I will ask the Vice President for Student Affairs and the Provost to bring forward joint recommendations for integrating substance-abuse education into the orientation of new students, into on- and off-campus housing complexes, and into the curriculum.

5. And finally, I will ask that your Task Force broadly solicit nominations of persons to serve on the Wellness Planning Committee it proposes. As the Task Force suggests, this Committee should include faculty, staff, and students and should, by the end of the Spring 1990 semester, bring forth recommendations for aggressively promoting wellness as a campus alternative to the kind of childish partying that has too often in the past diminished both town and gown and irrevocably darkened the prospects of individual students.

I am truly grateful to the Task Force for its swift and searching response to my letter of July 12th, and I am heartened at what I am optimistic enough to see as a growing consensus in our community that enough has been enough for quite some time.



Robin S. Wilson, President”

Was each of these five directives implemented during subsequent years? If so, with what success? If not, why not? Here is what we found.

**1. Consult with wholesale and retailers to reduce alcohol marketing to college students.**

In Environmental Management, DeJong and colleagues (DeJong, Vince-Whitman, Colthurst, Cretella, Gilbreath, Rosati, & Zweig, 1998) note that “Whatever students are told on campus about alcohol, if the surrounding community delivers a dissimilar message “educational message” through low-price beer promotional, illegal sales to minors, lax law enforcement, and low alcohol excise taxes, students will continue to experience significant alcohol-related problems.” Later on, we will describe considerable effort by campus and community leaders to reduce marketing to students and other young adults, especially drink specials. Here we note that little was done about this in the early 1990s, despite President Wilson’s best intentions.

**2. Solicit funds from alcohol beverage distributors and retailers for substance-abuse education.**

Two major alcohol distributors contributed modest funds (much less than the \$70,000 hoped for by President Wilson) to the Campus Alcohol and Drug Education Center during the late 1980s and early 1990s. These funds were used, for example, to help fund the Fun Without Alcohol Fair, Chico Safe Rides, and alcohol/drug awareness speakers. In a number of other instances beginning in the late 1990s, thousands of dollars of additional potential donations were declined by the university because the local distributor insisted that the beer company logo be included in credits.

**3. Develop a consistent campus-wide policy on commercial and other co-sponsorships with campus groups.**

For many years, there was no consistent campus policy regulating commercial sponsorship (or co-sponsorship with campus units) of campus events. After careful deliberations among administrators, faculty, and staff, the “Campus Commercial Underwriting Policy” was issued by President Esteban as an official Executive Memorandum in 1994. The document recognizes that while extramural resources are important in providing quality academic and co-curricular programs and publication, “it also recognizes the sensitive nature of such relationships and the need to protect institutional integrity and the image of the University.”

*The policy states:*

“The activity or publication must be sponsored by and fully under the control and authority of the campus sponsor...The primary focus of the promotion of the activity or publication must be on the University approved program and not on the underwriter...The name or logo of the underwriting company may be used, but not the name or representation of a product of the company, unless they are one and the same. In any case, alcoholic beverage and tobacco products may not be advertised, promoted, or referred to in promotional materials.” EM 94-50, 9/27/94

This policy remains in effect to the present, applied by the Student Activities Office in the case of student organizations and by the offices of the Vice Presidents for Academic Affairs and Administration/ Business in the case of other campus organizations. Monitoring and enforcing this policy is a continuing challenge to campus leaders.

**4. Integrate substance-abuse education into the orientation of new students, into on- and off-campus housing complexes, and into the curriculum.**

Until the mid-1990s, staff managing the summer orientation program did all they could to keep the topic of student drinking out of all orientation programs for students and parents. This was based on the argument that discussing such a “negative” topic would not be helpful to

promotion of the desired positive image. The Student Activities Office and CADEC finally prevailed in the late 1990s with the argument that presenting information about actual (as opposed to presumed) data on student drinking at Chico State and about alcohol prevention services was positive information. Henceforth, brochures, information tables, and presentations to groups of incoming parents and students about risks of alcohol abuse, and CADEC services have been included in summer orientation. Little was done in housing or curriculum infusion until recent years.

#### 5. Promote wellness as a positive campus alternative.

During Fall 1988, CSU, Chico hosted a three-day visit by then-Executive Director of the National Wellness Institute, located at the University of Wisconsin, Stevens Point. As a Distinguished Visiting Professor, Dr. David Emmerling met with a variety of individuals, classes, and groups on the theme, "Wellness and Its Implications for Higher Education." The visit was hosted by the Wellness Planning Committee, chaired by the Dean of the Graduate School in response to **President Wilson's directive noted above.**

The Subcommittee that hosted him reported to Graduate Dean as follows after Dr. Emmerling's visit:

There was wide agreement among participants in these sessions that we can and should do more to promote wellness throughout his campus. Special emphasis needs to be placed on student wellness. Moving in this direction would be congruent with the following excerpts from the recent report of the Carnegie Foundation for the Advancement of Teaching, College: The Undergraduate Experience in America:

"All students should be helped to understand that 'wellness' is a prerequisite to all else"

"They should...begin to understand that caring for one's body is a special trust."

"The college of quality remains a place where the curricular and co-curricular are viewed as having a relationship to each other."

We view Chico State's recent dubious designation as the number one party school in the U.S. as ill-deserved, since it ignores and casts a cloud over the positive strides made here in recent years to strengthen our academic reputation and to clean up mass partying.

Yet, this occasion offers a special opportunity to embark on a campus-wide planning effort to seek constructive alternatives to this unwanted image. While continuing to strengthen the quality of the academic experience at Chico State, we also need to explore new ways to encourage a lifestyle of health and well-being throughout the community.

Therefore, we recommend that...a campus wide "wellness planning committee be appointed by the president of the university or his designee to consider specific future steps that might be undertaken to strengthen and extend current programs and services for promoting wellness on this campus, especially among students".

**A broad-based Wellness Planning Committee was indeed appointed by President Wilson in the spring of 1990.** The committee was guided by the following key assumptions:

1. Promotion of student wellness must occur within a campus-wide culture of wellness.
2. Attitudes and behavior are influenced by campus-wide values and social norms. Therefore, efforts to promote wellness must focus on influencing values and norms as well as on individual attitudes and behavior.
3. Promoting wellness must be a campus-wide effort, involving not only limited persons and units but many.
4. Turning wellness from an abstract theme into reality will be enhanced if there is one unit designated to coordinate and promote campus-wide efforts.



5. Promotion of wellness must be a long-term effort with progressive steps and a sustained institutional commitment.
6. We recognize that wellness- promotion effort must be academically- sound and scientifically- based to the greatest extent possible.
7. Wellness programming must respect individual diversity and freedom of choice.

With these assumptions in mind, the Wellness Planning Committee recommended a series of actions. We follow the recommended actions with brief notes about what was implemented:

1. **Establishment of a Campus Wellness Center to serve as an information clearing house, maintain a speakers' bureau, assist in wellness-related program development across campus, conduct a variety of new wellness-awareness programs, conduct research and demonstrations related to wellness, and coordinate wellness activities with the campus and community.**

*Implementation:*

Created in Fall 1990. Located within Psychological Counseling and Testing Center. Never fully funded. Still operates on a shoe-string with a few thousand dollars squeezed from the Psychological Counseling and Testing Center to supporting a part-time student intern coordinator. Operates under supervision of a professional counselor with student interns earning academic credits for service. Services mainly wellness education — printed materials, forums, and presentations to student organizations and classes.

2. **Ongoing, stable funding be provided the existing Promotion of Health Program (PHP) in the School of Nursing and for the newly created Campus Alcohol and Drug Education Center (CADEC), located in the Student Activities Office under the Vice President for Student Affairs.**

*Implementation:*

CADEC was founded in 1988 and continued to function thanks to federal grants. In mid-

1990s, state funds were allocated for a full-time director and minimal operating expenses. A second full-time staff position was added in 1999. Small grants and gifts have enabled CADEC to carry on. PHP was never funded.

3. **Efforts be made to influence social norms, attitudes, and behavior among new students toward positive health habits.**

*Implementation:*

A new optional freshman class, University Life was added in mid-1990s. Sixteen sections in recent semester. Wellness materials and presentations included in orientation. Wellness programming added in residence halls.

4. **Encourage Associated Students to continue to increase weekend programming.**

*Implementation:*

Throughout the 1990s, the student government greatly increased its weekend programming, including concerts, speakers, films, outdoor adventure activities, and more.

5. **Encourage Associated Students to expand on-campus Student Union.**

*Implementation:*

Bell Memorial Union underwent a major renovation in 2001 and it went from 52,500 square feet to 133,400, resulting in vastly improved facility for student-sponsored and student-focused programs.

6. **Encourage expansion of existing physical education, athletic and recreational facilities.**

*Implementation:*

A new physical education and recreation academic building completed in 2002. Students voted down a proposed fee increase to fund a new on-campus recreation center for students. The campus remains vastly under-supplied with indoor and outdoor recreational space, partly due to land-locked space limitations on campus. Fortunately, student leaders are once again interested in going to the students for a vote on a

recreation center. This vote is expected for Spring of 2005.

**7. Expansion of Student Health Service facility with space for health education program.**

*Implementation:*

The Student Health Service building expanded in late 1990s. No space specifically was provided for health promotion, although health-promoting posters, brochures and other printed materials are provided. A health promotion student intern has been added in recent years.

The intention of President Wilson, the Alcohol Abuse Task Force and the Wellness Planning Committee was that wellness would become a pervasive, guiding theme of the campus, especially in relation to co-curricular life. However, this never happened. The closest was inclusion by President Esteban of the following language in his letter to the campus accompanying the updated Campus Strategic Plan Update in 1999: "With you, I am committed to helping our students reach their full potential in all aspects of their lives."

It was evident that President Wilson and his Alcohol Abuse Task Force viewed student alcohol use and abuse at CSU, Chico as the result of a host of inter-related influences. They clearly assumed that individual students did not make alcohol-related choices in isolation but in a broader societal, community, campus, and peer context. They sought to address a number of change targets simultaneously.

Still, the only strategy that was fully implemented was the individual-focused educational campaign by the Campus Alcohol and Drug Education Center.

**Campus Alcohol and Drug Education Center (CADEC)**

In response to the 1987 Pioneer Days riots and their aftermath, CSU, Chico created the Campus Alcohol and Drug Education Program (CADEC) in 1988 with the purpose of preventing student substance abuse. Its mission statement reads:

"CADEC is committed to providing educational and social events that raise campus awareness about the dangers of alcohol and drug abuse. CADEC strives to encourage students to be responsible for their choices and behaviors, especially in areas where substance abuse is a concern. The goal of CADEC staff is to help at-risk groups understand the hazards associated with alcohol and drug abuse and to reduce incidents of excessive drinking and alcohol-related violence, assault, and injury."

The main strategy of CADEC has been individual-focused alcohol and drug awareness programming. Here is a sampling of activities through the 1990s to the present.

**Presentations to Classes and Student Organizations**

CADEC professional staff and student interns give many presentations each year to classes, student organizations, and athletic teams.

**Online Alcohol Education**

An online alcohol education program is targeted to three high-risk campus groups: freshman violators of the campus alcohol and drug policy (e.g., drinking in residence hall), athletes, and Greeks.

**Alcohol Education Unit in University Life Classes**

An interactive CD-ROM is used to educate students in Freshman University Life classes about alcohol use and abuse.

**Fun Without Alcohol Fair**

Alternatives to alcohol and drugs are explored and promoted during a fun-filled, day-long community event aimed both at university students and school-age children within Butte County. A variety of campus student groups provide entertainment and sponsor interactive games, activities, and booths. About 3,000 children typically attend.

**Alcohol/Drug Forums**

Each spring, CADEC sponsors a forum in which a well-known speaker addresses students on



current alcohol or drug-related topics such as high-risk drinking, ecstasy, or designer drugs.

#### **National Collegiate Alcohol Awareness Week Activities**

A variety of events are held to increase awareness of alcohol-related issues and problems including informational tables, speakers, and forums. For example, students created a mock graveyard in the campus quad with tombstones of famous and local people who have died from alcohol-related causes.

#### **First-Year Survivor Workshop Series**

CADEC worked with the Student Health Center, the Campus Wellness Center, and University Housing to provide a seven-workshop series aimed at helping first-year students adjust to college life. Included are sessions on alcohol and drug awareness.

#### **21st Birthday Card Campaign**

A birthday card is sent by CADEC to all students a week before they turn 21 wishing them a happy birthday and reminding them to celebrate safely.

#### **Summer Orientation**

Through booths, printed material and group presentations to incoming students and their parents, CADEC provides information about campus and community alcohol and drug issues, policies, and services.

#### **Alcohol Poisoning Awareness Campaign**

Through CADEC, this campus-wide campaign is designed to educate students about the signs and symptoms of alcohol poisoning, and what to do in the event of such an emergency. Wallet-sized alcohol poisoning cards are distributed to all freshmen, are given to students of all class levels attending various campus events, and are distributed by several bars to all patrons on holidays such as Halloween and St. Patrick's Day. Small, colorful laminated posters with the same information are prominently posted throughout residence halls, in a number of private apartment and residence hall complexes throughout the community, and in a number of community bars.

#### **Safe Halloween Card Campaign**

A Halloween card is sent by CADEC to all residence hall students (mainly first-year students) encouraging them to celebrate safely and reminding them about alcohol-related laws in Chico.

#### **Alcohol Awareness Brochures, Newspaper Ads, and Posters**

CADEC widely distributes a host of posters and brochures with various alcohol-related facts and a description of alcohol-related services available on the campus and in the community. Additional exposure is provided through ads in the student newspaper.

#### **Voluntary, Anonymous Interviews and Breath Tests**

With support from a two-year grant from the U.S. Department of Education, more than 2,500 random, voluntary, anonymous interviews and breath tests were conducted among first-year students returning to their residence halls on a random sample of weekend nights. The main purpose of this effort was to educate these students about their blood alcohol level at that moment and about the meaning and implications of a given level. This "point of contact" was also used to provide social norming information (more on this later). Finally, the information gathered provided useful data about patterns of drinking among our first-year students.

#### **Persistence of the Student Drinking Problem Through the 1990s**

Alcohol abuse and related problems persisted at CSU, Chico through the 1990s, despite the measures described above. In retrospect, several factors no doubt contributed to persistence of the problem. One was continuation, and even intensification, of national advertising of alcohol targeted at the youthful population. Second was continued availability, easy access to, and promotion of low-cost drinks by local bars and retail outlets. Third was persistence of the "party school" burden which might well have attracted some students looking for an alcohol-focused college experience. The "party school" image also likely led many students to drink more than they otherwise would have once they arrived

because of their belief that frequent or heavy drinking is what most students do here and that this is the best way, therefore, to fit in and make friends.

(For a description and assessment of a less-than-fruitful effort to enforce drug-free standards in the residence halls by implanting an undercover police officer, see [Appendix A](#)).

Persistence, perhaps even worsening, of the alcohol problem during the 1990s was reflected in the alcohol-related deaths of five students between 1996 and 2000. The tragic death in fall 2000 of Adrian Heideman, combined with St. Patrick's Day, Labor Day, and Halloween celebrations reaching intolerable proportions, stimulated the campus and community to do more to prevent alcohol abuse.

Also contributing to a sense of urgency was that in spring of 2000, we collected our first reliable, hard evidence on the extent and consequences of the drinking problem at CSU, Chico.

In 1994 and 1998, large scale surveys on alcohol use by CSU, Chico students had been conducted, but they were non-random and therefore not acceptably valid. But in spring 2000, the Campus Alcohol and Drug Education Center, assisted by the Office of Institutional Research, conducted our first random sample survey (n=1102, based on students enrolled in a random sample of classes), using the Core Short Form Survey with several supplemental questions. The 2000 survey made clear that, while most students drink moderately most of time, many drink to excess, resulting in a number of negative consequences for their educational, personal, and social experiences — and endangering the health and well-being of themselves and others. It was easy for us to determine that student alcohol abuse is at an intolerable level and that we needed to do more to reduce it. Here is a summary of the facts from that survey.

We will organize these findings around on a series of questions about drinking among CSU, Chico students. Data are presented in narrative

form rather than in statistical tables for simplicity of reading.

#### **At what age did CSU, Chico students begin drinking?**

- One in five (21%) students had their first drink before age 14.
- Half (50%) of students had their first drink before age 16.
- Three fourths of students (76%) had their first drink before age 18.

#### **How many CSU, Chico students recently consumed alcohol?**

- More than 9 of 10 students (93%) reported drinking at least once during the last year.
- More than 8 of 10 students (85%) reported drinking at least once during the last 30 days.

#### **How often did CSU, Chico students drink?**

When asked about the frequency of their drinking during the last year,

- 80% reported drinking once a month or more often.
- 64% reported drinking once a week or more often.
- 40% reported drinking 3 times per week or more often.
- 9% reported drinking 5 times a week or more often.

When asked how many days they drank during the last 30 days,

- 31% reported drinking 0-2 days.
- 51% reported drinking 0-5 days.
- 49% reported drinking 6 or more days.
- 28% reported drinking 10 or more days.
- 5% reported drinking 20 or more days.

#### **How much did CSU, Chico students consume when they drank?**

- The mean number of drinks reported per week was 8, the median 5.
- 32% reported consuming 0-2 drinks per week.
- 56% reported consuming 0-5 drinks per week.



- 44% reported consuming 6 more drinks per week.
- 21% reported consuming 14 more drinks per week (an average of at least 2 drinks per day).
- 10% reported consuming 21 or more drinks per week (an average of at least 3 drinks per day).

#### **What was the rate of episodic heavy drinking among CSU, Chico students?**

- Six of ten (59%) reported they drank 5 or more drinks at a sitting at least once during the last 2 weeks.
- One third (33%) reported they drank 5 or more drinks at a sitting 3 or more times during the last 2 weeks.

#### **How did drinking at CSU, Chico compare with other colleges?**

Across all measures, CSU, Chico's drinking rates were higher. For example,

- CSU, Chico's at-least-once-in-last-year drinking rate (93%) was higher than the national rate of 85%.
- CSU, Chico's at-least-once-in-last-30-days drinking rate (85%) was higher than the national rate (73%).
- The mean number of drinks per week at CSU, Chico (8) was higher than the national average (6).
- CSU, Chico's episodic heavy drinking rate (5 or more drinks at a sitting at least once in last 2 weeks) (59%) was higher than the national rate (47%).

#### **What were usage rates of drugs other than alcohol and how did these compare with other colleges?**

- More CSU, Chico students reported using tobacco (smoking, chewing, snuff) at least once during the last year (52%) than nationally (38%). More than one in three (37%) reported using tobacco at least once during the last 30 days (national data not available).
- Marijuana use was higher among CSU, Chico students than nationally when measured by use at least once in the last year (55% vs. 25%). More than one in

three (37%) reported using marijuana at least once during the last 30 days (national data not available).

- Cocaine use was also higher among CSU, Chico students than nationally when measured by use at least once in the last year (12% vs. 4%). Five percent reporting using cocaine at least once during the last 30 days (national data not available).
- Designer drug (e.g., ecstasy, MDMA) use was higher among CSU, Chico students than nationally when measured by use at least once in the last year (16% vs. 2%). Six percent reported using designer drugs at least once during the last 30 days (national data not available).

#### **How did alcohol use vary among types of students—that is, by sex, age, class level, ethnicity, grade point average?**

- Males drank more often and were more likely to be heavy drinkers than females.
- Students under age 21 averaged more drinks per week and more often drank heavily than those 21 or over.
- The highest percentage of current drinkers (drank at least once in last 30 days) was juniors, while the highest percentage of heavy episodic drinkers were freshmen and sophomores (tied).
- The lower the self-reported grade point average, the greater the frequency and amount of drinking and the greater the likelihood of episodic heavy drinking.
- Whites drank more often and more heavily than other ethnic groups.

#### **How often did students report harmful consequences of alcohol and drug use? How did the rates of harmful consequences compare with rates at other campuses?**

The Core Survey asked students how often they had experienced a series of harmful consequences "due to your drinking or drug use during the last year." As shown below, data on self-reported consequences of alcohol other drug use reveal that with the exception of two items (got nauseated or

vomited, had a hangover) the majority of CSU, Chico students did not report experiencing adverse consequences from alcohol or drug use during the last year.

However, most of the harmful consequences did occur more often at CSU, Chico than nationally.

Table 1  
Percentages of Students Reporting Each Consequence of their Alcohol or Drug use During the Last Year

CSU, Chico (%)	U.S. (%)	Experience
		<b>Public Misconduct</b>
2	1	Been arrested for DWI/DUI
3	5	Taken advantage of another sexually
12	8	Damaged property, pulled fire alarms, etc.
16	14	Been in trouble with police, residence hall, or other college authorities
40	31	Got into an argument or fight
40	31	Driven a care while under the influence
		<b>Personal Injury</b>
1	1	Tried to commit suicide
13	12	Been taken advantage of sexually
21	15	Been hurt or injured
		<b>Psychological Problems</b>
4	5	Seriously thought about suicide
11	6	Tried unsuccessfully to stop using
18	10	Thought I might have a drinking problem
		<b>Other Experiences</b>
37	21	Performed poorly on a test or important project
47	33	Had a memory loss
37	30	Been criticized by someone I know
48	33	Missed a class
51	39	Done something I later regretted
66	54	Got nauseated or vomited
77	63	Had a hangover

**How did frequency of episodic heavy drinking influence these harmful consequences?**

Engaging in episodic heavy drinking once or twice during the last two weeks clearly had harmful consequences for the physical, psychological, social, and educational well-being of CSU, Chico students. For nearly every item asked, those who drank heavily once or

twice during the last month experienced adverse effects. Those who reported they drank heavily three or more times during the previous two weeks paid an even higher price. For example, compared with those who engaged in no episodes of heavy drinking during the last two weeks, those who did so three or more times were:

- 11 times more likely to have been in trouble with campus or community authorities (33% vs. 3%),
- 4 times more likely to have been in an argument or fight (66% vs. 16%),
- 4 times more likely to have been taken advantage of sexually (23% vs. 6%),
- 7 times more likely to have been hurt or injured (44% vs. 6%),
- 2 times as likely to have seriously thought about suicide (7% vs. 3%),
- 5 times more likely to have performed poorly on a test or important project (63% vs. 13%),
- More than 3 times more likely to have had a memory loss (75% vs. 21%),
- Nearly 4 times more likely to have missed a class (77% vs. 20%),
- 3 times more likely to have done something they later regretted (77% vs. 24%).

**What were CSU, Chico students' views toward other students' drinking—e.g., availability of alcohol at parties, tolerance levels for others' drinking, and perceptions of how much and how often other students drink?**

- When asked whether they thought alcohol should or should not be available at parties, a sizable majority (85%) reported it should be available. On the other hand, only a minority (35%) said they thought drugs should be available.
- A supplemental question was added to the 2000 Core survey: "When CSU, Chico students party, how many alcoholic drinks do you think are okay to drink?" The median response was 5.
- Another supplemental question was, "In your opinion, how many alcoholic drinks are too many when CSU, Chico students party?" The median response was 8. Clearly, average CSU, Chico students were tolerant of their peers' heavy drinking.
- In the 2001 Core Campus Survey of Alcohol and Other Drug Norms, students were asked a number of questions about their perceptions of the frequency and amount of other students' drinking. Consistently,

students over-estimated their peers' drinking. This was true when aggregated frequency of self-reported personal drinking was compared with perceptions of others' typical drinking, when comparing self-reports with perceptions of the last time they drank socially with other students, and when comparing self-reports with perceptions of others drinking in such locations as bars, off-campus parties, Greek parties, athletic events, and campus dances.

- The only exceptions were frequency of actual vs. perceived episodic heavy drinking (nearly identical) and perception of abstainers (over-estimated).
- We also found that the higher the class level, the less the actual-perception gap.

The greater the gap, the greater the amount of drinking. [This is consistent with social norming theory, which is discussed later]

**How was drinking associated, if at all, with other drug use?**

- A minority of students were current (previous 30 days) users of tobacco (37%), marijuana (37%), or cocaine (5%). However, frequency of drinking during the last year and 30 days, average number of drinks per week, and frequency of episodic heavy drinking were all significantly correlated ( $<.05$ ) with frequency of use of tobacco, marijuana, cocaine, and most other illegal drugs.

By 2000, then, several factors converged that called out for a more effective prevention strategy to reduce student alcohol abuse at CSU, Chico. These factors, as we have noted, included persistence of the "party school" burden, several student deaths, growth of "special events" to the point they were nearly out of control, and survey data clearly indicating an intolerable level of alcohol use and abuse.

We faced a clear challenge— we must do all we could to reduce rates of underage and episodic heavy drinking in order to minimize their harmful impact on the education, personal development, health, and safety of our students.



### **Broadening Prevention: The Social Ecology Framework**

Following Adrian Heideman's death, President Esteban recognized the need to expand the campus's prevention efforts beyond individual-focused alcohol education, which had been the predominant strategy through the 1990s — despite the many recommendations and plans calling for a more comprehensive approach. This shift toward an environmental management approach is reflected in the next column he wrote for *Inside Chico State*, a periodic campus news bulletin following the Heideman death. President Esteban wrote:

#### **“We Must Do More to Prevent Alcohol Abuse**

The recent death of 18-year-old freshman Adrian Heideman after an evening of heavy drinking at a CSU, Chico fraternity is a terrible tragedy. When I met with his parents, words literally failed me in expressing my grief and sympathy for their loss. CSU, Chico is doing everything possible to assure this is never repeated. Students, staff and faculty have been mobilized as never before to seek solutions. Even before the recent tragedy, CSU, Chico had intensified its efforts to prevent student alcohol abuse. Residence hall staff are trained to enforce the prohibition of alcohol in residence halls. Freshmen are instructed through an orientation class about the risks of alcohol abuse. Our Campus Alcohol and Drug Education Center (CADEC) conducts a host of other alcohol awareness programs.

Student Affairs staff work closely with sororities, fraternities, and other student organizations to encourage responsible drinking. University Police, the Chico Police Department, and campus administration continue to cooperate to provide a safe environment for students and the Chico community. A number of academic classes focus on alcohol abuse and student culture.

Although this university is already doing a good deal to discourage student alcohol abuse, we clearly must do more. Various

administrators, faculty, staff, and student leaders have submitted to me recommendations on how CSU, Chico can most effectively prevent alcohol abuse among our students. While details are still being developed, the outlines of our prevention efforts are becoming clear.

**Learn more about our students.** We need to better understand our students—to know more about their attitudes toward alcohol and their previous patterns of use. With this in mind, we will conduct several surveys and studies to help us develop more effective policies and programs

**Expand alcohol awareness efforts.** We continue our commitment to provide accurate information to students about alcohol, health, and safety. We need even more effective instruction about alcohol poisoning. CADEC, the campus Wellness Center, Student Health, Student Activities, and University Housing will continue to lead the way in alcohol education.

**Continue to build academic excellence.** CSU, Chico has earned a reputation in recent years as an excellent regional university. This is reflected in our recent top-five ranking among Western public universities by U. S. News & World Report. Our students and faculty continue to win regional and national competitions and awards.

Yet, we need to continue to improve. We need to ask whether students, especially freshmen, are as academically challenged as they might be during the early weeks of school when college drinking habits tend to start. I have asked academic departments to develop their own approaches to strengthen our positive student culture.

**Improve co-curricular environment.** We are searching for ways to place greater emphasis on healthy lifestyles in our summer orientation programs. Perhaps university recognition of fraternities should require that their residences become alcohol-



free. We will continue to ban alcohol advertising at athletic contests and on university bulletin boards.

We need more alcohol-free student activities on weekends. A new on-campus student recreation center is needed. We also need to expand our recreational sports programs and increase the proportion of students involved in service learning and volunteer activities.

**Cooperate with the community.** The university will continue to encourage positive communication among University Police, the Chico Police Department, Greek organizations, and student neighborhoods. We will continue to urge law enforcement agencies to enforce alcohol laws in student neighborhoods and among alcohol-serving businesses near the campus. We need to seek better cooperation among these businesses to assure that student drinking is moderate and responsible.

We will continue our shared efforts to build a campus culture that encourages and rewards academic engagement, intellectual excellence, and healthy lifestyles, and to make it clear that irresponsible drinking is unacceptable.”

#### **President’s Advisory Committee on Alcohol and Drug Abuse**

In fall 1999, President Esteban appointed a broad-based President’s Advisory Committee on Alcohol and Drug Abuse. The committee was made up of several faculty, an athletic coach and athletic administrator, the Assistant Vice President for Student Affairs, the director of CADEC and a member of her staff, the Chief of University Police, two representatives of the Chico Police Department, the presidents of the Inter fraternity Council (campus-recognized fraternities) and Pan Hellenic (campus-recognized sororities), a professional counselor from the Psychological Counseling/ Wellness/ Testing Center, director of the Student Health: Center, a representative of the Alumni Association, and a Vice Provost/ Dean of Undergraduate Education. The President’s Advisory Committee adopted the following:

Our goal is to create a campus-wide, pro-active approach to alcohol prevention, which will result in a healthier and safer campus for our students.

- To counteract the belief that consuming alcohol is an essential part of the college student tradition.
- To create an environment where alcohol is not the center of student life.
- To encourage a spirit of mutual cooperation and concern between students and the community on responsible use of alcohol.
- To educate students about the potential hazards and dangers of excessive alcohol use.
- To help students achieve their full academic, personal and career potential via healthy lifestyle choices.
- To reduce the incidence of alcohol related absenteeism, vandalism, acquaintance/ date rape, violence and death among our student population.
- To reduce the amount of binge drinking on our campus.

After meeting for two years to familiarize itself with campus alcohol issues and approaches, the committee was requested by President Esteban to examine the ways in which this campus was and was not in congruence with the Chancellor’s Committee’s recommendations to CSU campuses. Below is the president’s charge to the committee.

“Dear \_\_\_\_\_:

I am pleased to invite you to serve as a member of the President’s Advisory Committee on Alcohol and Drug Abuse during the 2001-2002 academic year.

I know you share with me a commitment to provide a safe and healthy environment in which our students can maximize their academic and personal development. Reducing rates of underage and high-risk drinking is vital to this effort.

As you know, I had the privilege of serving on the Chancellor’s Committee on Alcohol

Policies and Programs. This committee's report was accepted by the CSU Board of Trustees at its July meeting. It is quite clear that CSU, Chico is well ahead of most other campuses in the CSU in meeting the guidelines and recommendations of this report.

Still, I believe it is important to review our key policies and programs in order to assure that we, as a campus community, are doing everything possible to implement fully the Committee's guidelines. I want the President's ACADA to play a key role in this review. I ask that the ACADA submit a report to me by the end of the fall semester 2001 addressing the following questions that emerge from the Chancellor's Committee report. (This refers to the 2001 report of the California State University Chancellor's Committee on Alcohol and Drug Policies and Programs, on which both Esteban and Schafer served.)

1. What are we currently doing to communicate alcohol policies to new students and their parents prior to and when they arrive on campus?
2. Are all university web pages and publications about drugs and alcohol consistent and clear in message?
3. What are we currently doing to assess patterns of alcohol use and abuse on this campus and to assess the effectiveness of prevention programs? How, if at all, can these assessment efforts be improved?
4. Are there any changes in state laws that might help students reduce alcohol abuse?
5. Are any modifications needed in our existing campus alcohol policies and rules and in the way they are enforced?
6. What might be done, if anything, to increase faculty and curricular

involvement in alcohol abuse prevention?

7. What specific steps need to be taken to increase alcohol-free activities on campus and student attendance at those activities, especially on weekend nights?
8. Should existing campus policies regarding alcohol beverage funding and sponsorship continue or be modified? If they need to be modified,, how?
9. How might student organizations become more effective in self-regulating their own activities so that risk of alcohol abuse is reduced?
10. How, if at all, can existing programs related to recreation, student health, wellness promotion, and alcohol abuse prevention on this campus be better coordinated?
11. How, if at all, might we improve education and training of faculty and staff related to student alcohol use and abuse?
12. How, if at all, might the university improve coordination of its alcohol abuse prevention efforts with the larger community?

I know that this is a formidable assignment. I appreciate your willingness to work with me in creating a safer, healthier, and more educationally supportive environment for our students.

Finally, in order to increase faculty involvement in this important process, I have decided that the chair of the Advisory Committee on Alcohol and Drug Abuse ought to be a faculty member. Consequently, I have asked Professor \_\_\_\_\_, who has previously served on this committee and who is very knowledgeable about the subject of alcohol and drug abuse, to chair the committee during the 2001-2002 academic year. I ask that Assistant Vice President



\_\_\_\_\_’s office continue to provide staff support to the committee, as it has done so ably heretofore.

I want to thank you for all the work you have done so far and look forward to your report by the end of this semester.

Manuel A. Esteban, President”

After several months of deliberation, the Office of the Vice President for Student Affairs incorporated the work of the Advisory Committee in the action plan submitted to President Esteban (see Appendix B).

### “Did You Know” Social Norms Marketing Campaign

Beginning in spring 2001, the Campus Alcohol and Drug Education Program initiated a new social norming campaign designed to reduce underage and episodic heavy drinking by reducing student’s over-perceptions of peer’s drinking. The campaign, supported by a two-year grant from the U. S. Department of Education, was initially called the “Campus Reality Check Campaign.” However, this title was soon dropped at the request of a local Superior Court judge who already had appropriated that name for his sentencing project for youthful offenders found guilty of drinking violations. Instead, we adopted the title, “Did You Know?”

Like other social norms marketing campaigns, ours was based on several assumptions: 1) students tend to drink to the level they believe their peers are drinking, 2) most students over-perceive the frequency and amount of peers’ drinking, 3) these over-perceptions contribute to underage and heavy drinking. Social norming theory holds that correcting the over-perceptions is likely to reduce student alcohol consumption, especially heavy drinking.

Throughout the two years of the campaign, a number of social marketing channels were used. These included all channels stated in the project proposal, plus several others.

- **Posters.** In both years of the campaign, each residence hall room contained a large, colorful poster when students arrived on campus at the beginning of fall semester. The poster included three social norming messages, as well as 101 alcohol-free ways to have fun in Chico and a list of key campus and community telephone numbers. Other *Did You Know* posters were displayed on a rotating basis in residence halls hallways and on bulletin boards across campus. The poster followed a common design, which was gradually improved through the course of the project. A total of 4,700 posters were printed and posted throughout the two years of the project. Twelve different poster versions were used.
- Students were rewarded for keeping posters up in their rooms through \$5.00 gift certificates presented by residence hall advisers who randomly knocked on doors. Some of these were purchased with project funds for redemption at the campus bookstore or a nearby campus restaurant. Others were given to the project by that restaurant.
- Social norming messages were based on data from our spring 2000, 2001, and 2002 Core Surveys. Examples of messages used in posters and other social marketing channels were:
  - Most Chico State students drink 0-2 times per week.
  - Most Chico State students consume 0-5 drinks per week.
  - Most Chico State students drink 0-4 drinks at off-campus parties.
  - Most Chico State students had 4 or fewer drinks the last time they drank with other students.
  - Most Chico State students avoid party games.
  - Most Chico State students over-estimate how much other students drink.
  - At Chico State, A students drink half as many drinks per week as C students.

- **Student Newspaper Ads.** Project funds also were used to place quarter-page ads in the campus weekly newspaper 15 times each semester. There were 60 ads over two years. These contained the same messages noted as posters, and the ad designs were similar to those posters.
- **Screen Savers.** With assistance from campus computer consultants, we installed screen savers in nearly all student computing labs across campus totaling several hundred stations, including those in residence halls, in the campus library, and in academic computing labs. The screen savers were designed to show three rotating social norming messages. In those labs with Macsand in the central library labs where screen savers seldom appear due to near-constant computer use—we installed mouse pads instead of screen savers.
- **Mouse pads.** Through the two years of the project, we printed a total of 2,000 mouse pads with social norming messages for use in student computing labs. We also periodically distributed these to participants in our *Wanna Know* campaign, which is described later in this section. Thus, they were also used at many private computer stations. Like screen savers, mouse pads will continue to be used across campus well beyond the two-year life of this project
- **Table Tent Cards.** Beginning in spring 2003, we printed a total of 300 table tent cards for use on tables in the residence hall dining rooms. Each tent card contained a single social norming message. At any given time, approximately 75 of these appeared on tables. Tent cards with new messages rotated approximately every two or three weeks.
- **E-Mails.** At the outset of the project, we sent social norming messages several times through campus announcements to all students. However, our December 2001 focus groups and other feedback from students clearly revealed this was not an effective channel, since few students seem to read to campus-wide e-mail announcements, so this channel was discontinued after the project's first semester.
- **T-Shirts.** The message, "Most students underestimate how much other students drink", was printed on the back of beige t-shirts distributed to participants in the *Wanna Know* interviews/breath tests. The front contained the chemical formula of alcohol in a colorful design with the *Wanna Know* logo above. The back read, "Most Chico State students overestimate how much other students drink." A total of 1,973 such shirts were printed and distributed. A second type of t-shirt was given to those whose breath test measured .00. The front read "How low can you blow?" The back read, "I blew .00." This black shirt with white lettering, 450 of which were distributed, was a great hit.
- **Water Bottles.** An alternative to the t-shirt was a filled water bottle with the *Wanna Know* logo and the message, "Most Chico State students overestimate how much other students drink." We purchased 1,050 of these and distributed nearly all.
- **Brochures.** Social norming messages were included in a handsome brochure distributed to all *Wanna Know* participants and placed elsewhere across campus. A total of 3,200 brochures were printed throughout the two years of the project. Some will continue to be used beyond the life of the project.
- **Other CADEC Printed Materials.** Social norming messages were included in a variety of materials printed and distributed in cooperation with CADEC. Included were 21st birthday cards sent to all students, handouts related to special events such as Halloween and St. Patrick's Day, materials distributed to new students at Summer Orientation and Getting Connected, alcohol poisoning cards and posters, and materials distributed and discussed at remedial alcohol



education classes for students who had violated residence hall no-drinking and no-drug rules.

- **Other Presentations and Materials for Incoming Students.** Social norming messages also reached new students through materials provided to outreach staff for conversations with high school counselors, new parents, and new and prospective students. The social norming theme also was included in letters to new students from the residence halls, from the Vice President for Student Affairs, and from the President. The President also referred to social norms messages during his annual convocation with new students. CADEC and project staff made presentations with social norming themes to new parents and new students during Summer Orientation.

The second component of our U. S. Department of Education-funded project involved anonymous, voluntary interviews/ breath tests among a random sample of first-year students (age 18 or over) who were returning to their rooms on a random sample of weekend nights per semester between fall 2001 and spring 2003. This was called the *Wanna Know* campaign

Between 10:30 pm and 2:30 am on each of the selected nights, three teams (two student team members and one emergency room RN) were located along commonly used pedestrian routes as students returned to their residence halls. The first student to come along at five-minute intervals was selected to participate. The human subjects instructions, interviews, breath tests, and post-interview send-offs with written materials (BAC level, social norming packet, list of laws and penalties, and alcohol poisoning information) took about seven minutes during the first semester and about four minutes thereafter, after we refined and shortened the interview. Each team was expected to complete

20 interview/breath tests each night. Also present each night were the Project Director or Project Coordinator and the Nurse Supervisor.

In year one, we completed 1,419 interviews/ breath tests during 26 nights. One hundred five of these were discarded because we determined they were not freshmen as required by the protocol. To avoid this likelihood, we began after the first semester to include only freshmen, who reported they were age 18 or 19. This left a usable year-one sample size of 1,314. During year two, we completed 1,215 interviews/ breath tests during 25 nights.

Did the *Did You Know* and *Wanna Know* campaigns reduce underage drinking, especially episodic heavy drinking, among first-year students? We cannot differentiate the effects of the two campaigns (or still other campus policies or programs) on rates of drinking. Still it is worth noting the combined effects.

First, we compared first-year students' responses to Core surveys in spring 2000 and spring 2001 with those in spring 2003. Students took the surveys in randomly selected classes across the campus. Students at all class levels were included in the surveys. We switched from 2000 to 2001 on some of the "pre" questions because they were not included in 2000. We selected out first-year students for this analysis. See Table 2 for the results.

The above data show that on most measures, first-year students showed less drinking in 2003 than at the two earlier points in time. The exceptions were last- 30-days drinking and frequent episodic heavy drinking. All others showed positive progress.

The second type of data was interview and breath-test data from the *Wanna Know* campaign. The findings are presented in Table 3.

Table 2  
Changes in First-Year Student Drinking Patterns

Question	2000	2003
N	(207)	(260)
Drank in last year	91%	86%
Drank in last 30 days	82%	84%
Mean drinks per week	10.1	9.1
Drank 5 or more in a row at least once in last 2 weeks	67%	61%
Drank 5 or more in a row 3 or more times during last 2 weeks	41%	41%
Mean drinks last time drank socially with other students	6.1	5.9
Mean drinks at party and bars	5.0	4.7
Mean drinks at off-campus parties (among those who attend)	5.9	5.4

Table 3  
Interview and Breath-Test Data from the *Wanna Know* Campaign

Question	2001-2002	2002-2003
N	1314	1218
Reported having drink today	80%	72%
Reported drinking 5+ drinks today	65%	44%
Mean drinks reported today	6.8	5.8
% blood alcohol level over .00	74%	63%
% blood alcohol level .10 or higher	32%	23%
Mean blood alcohol leve	.07	.06

On each of these *Wanna Know* measures, first-year students who participated in the interviews and breath tests showed less drinking in year two than in year one of the campaign. Again, conclusions must be drawn with caution. It is possible this positive change pattern would have happened without either campaign. They might have resulted from other prevention policies or programs at the campus. It could be the *Did You Know* campaign made the difference. It could be the *Wanna Know* interviews and breath tests caused the change. Assuming these are real changes, they are probably the result of a combination of influences. Whatever the

cause(s), it is promising that first-year students appear to be drinking less and less often.

**Presidential Statements**

It became clear to president Esteban that in order to institutionalize a strategy to combat a culture of excessive drinking every person at the university and throughout the community needed to understand that a common front was needed. Faculty, staff, alumni, community leaders and students leaders, all had to recognize that there existed a serious problem and that each person had to help make the problem public and help find solutions. The president also realized that he had to demonstrate

leadership. Consequently, he used every single opportunity when addressing students, parents, faculty, staff, and community leaders to address the nature of the problem in constructive ways. . . Although not labeled as such, his approach reflected an environmental management strategy. Here are two examples of speeches he delivered to the university community. At his 2001 convocation he said:

“The tragic deaths of some of our students in the past several years that have resulted as a direct consequence of excessive drinking have forced me to pay special attention to the problem of high-risk drinking. I hope you will all join me in dealing with this problem. Our studies show that most CSU, Chico students who drink do so responsibly most of the time. My work last year on the Chancellor’s Committee on Alcohol Policies and Programs has underscored the fact that our alcohol abuse prevention efforts have been well ahead of most other campuses. CADEC, our Campus Alcohol and Drug Education Center, has done a truly outstanding job for many years.

Yet, we must and will do more.

Through new state and federal grants to this campus, we will intensify both our educational and enforcement efforts this year, in cooperation with the wider Chico community. We are thoroughly examining our existing policies and programs in light of recommendations from the Chancellor’s Alcohol Committee. We will continue to work closely with Greek organizations and other student organizations to ensure they do a better job of self-regulating their own conduct.

Faculty can play a key part in this multi-faceted effort. Here are some of the ways you can help.

1. You can do everything possible to academically engage your students, especially first-year freshmen, during the first weeks of school. One of our preliminary studies shows many freshmen spend too little time studying during this critical period. I suspect learning suffers and drinking is made too easy. I hope you will

help change this bad habit early by administering more quizzes, written assignments, and attendance requirements during these early weeks.

2. You can maintain high academic expectations throughout the semester, especially on Fridays and around holidays like Halloween. Studies elsewhere show that the more students spend studying, the less they consume alcohol.
3. You can help educate your students about alcohol and drugs from the perspective of your own discipline, if this is applicable to your field.
4. Where appropriate, you can invite to your classes guest speakers from CADEC and other campus units to help inform students about alcohol issues.
5. You can become more sensitive to the early warning signs of alcohol abuse among your students and about appropriate actions you can take. Again, CADEC can help.
6. When the issue of alcohol does come up with your students, you can tell them that most students here over-perceive the amount of drinking among their peers, a fact that is supported by random-sample surveys of our students each of the last two years. There is increasing evidence nationwide that students tend to orient their drinking to these false standards and that correcting their misperceptions reduces consumption. Our new federal grant will help us strengthen our CADEC campaign to help with this corrective effort through social marketing.
7. We should all stop referring, even in humor, to Chico State as a “party school.” Such references simply perpetuate an outdated image, normalize alcohol abuse, and demean the high academic quality of this institution.

Working together, we can continue to create a campus climate that encourages and supports academic involvement, healthy lifestyle choices, and responsible drinking among our students, especially those who are under-age and those who drink excessively.”

In 2002, President Esteban felt the need once again to broach the topic of excessive drinking

in his fall convocation speech to faculty and staff:

“There is something that continues to worry me a great deal — and this is the use and abuse of drugs and alcohol by a substantial percentage of our students, primarily our freshmen. This is not a problem unique to CSU, Chico. It is certainly not a problem that generates easy solutions. We probably do more to combat this situation than most campuses in the United States.

We have 1) peer education programs, 2) outside-the-classroom education programs, 3) Saturday substance seminars, 4) Alcohol 101, a class to educate students in Freshman University Life classes, 5) a social norming campaign, 6) Chico Safe Rides, 7) fun without alcohol fairs, 8) alcohol-free Halloween parties, 9) St. Patrick’s Day breakfast and fun runs, 10) National Collegiate Alcohol Awareness Week activities, 11) first-year survivor workshop series, 12) 21st birthday card campaign, 13) alcohol poisoning awareness campaign, and 14) summer orientation, among many other programs.

And, this past academic year, we instituted additional programs to better educate students and to engage them in activities which provide alternatives to drinking. I am very proud of the manner in which so many answered my call last year for greater attention to this serious problem.

For instance, the Recreational Sports Program has required each of the club sports teams to develop and implement their own team alcohol policy in order for the teams to compete and requires all teams members to attend and complete an alcohol awareness training session to be able to play. University Housing has improved its compensation package in order to attract and hire older, more experienced residence hall advisers, has also committed \$15,000 for activities that are direct alternatives to alcohol, and has established the Whitney Hall Theme Floors. They are designed to expand the Housing thematic living experience for students. The new theme floors are Community Service, Recreational Sports, Leadership, and Adventure Outings. The IFC fraternities have agreed to postpone the rushing of first-time freshmen until

the second semester. I hope that sororities will agree to do the same. A new policy was adopted that requires all student organizations to have an alcohol policy on file with the university to receive official recognition. This policy enables the club to self-govern their members in the event they violate the policy.

We have just received word that CSU, Chico is one of 8 campuses selected to receive a grant from the California Office of Traffic Safety to expand our program to combat the abuse of alcohol. This \$80,000 grant will be coordinated by the Office of Student Affairs.

I want to recognize the officers of last year’s A.S., President \_\_\_ and Vice President \_\_\_ in particular, for their leadership and cooperation in the fight against alcohol. They created the position of Coordinator of Night and Weekend Programming and spent \$20,000 to sponsor alcohol-free activities. I am very pleased to report that, under \_\_\_ presidency, the A.S. has doubled this amount to \$40,000.

Continued hard work by people across the university, including and particularly our own students, and in the community is what ultimately will make the difference. I was very heartened to find that last year virtually all of the colleges began serious discussions about drug and alcohol abuse worked with student organizations and advisers to alert them to our campus’ policies, sought to provide healthy alternatives to drinking, and included discussions of drug and alcohol abuse in course materials.

I am also very pleased to note that some faculty are involving their students in the fight against alcohol abuse. Under the leadership of Professor \_\_\_, the Marketing Association Alcohol Awareness Team made very effective presentations to the 7th grade health classes at Marsh Junior High.

I have asked the three vice presidents to implement the university drug and alcohol policy, encouraging academic department chairs and other directors to continue discussion with faculty and staff about educational efforts



everyone can undertake. I am very grateful that the campus understands that this problem belongs to everyone and that we must all work together to deal with it. We owe it to our students and we owe it to ourselves.”

The Provost for nine years under President Esteban’s administration served as interim president from August 2003 to February 2004. In fall 2003, he wrote the following column for *Inside Chico State*, in which he explicitly applied the environmental management framework to the campus.

#### **“Alcohol and Drugs: Making Choices**

Is there a young person who does not believe she is immortal? Who does not believe that he always has one more chance to get it right? Holding these beliefs too often leads to risky behavior and poor choices. Every minute of every day we all make choices. Students choose whether to study or to hang out with friends, to go to class or to drink. Sometimes their choices put themselves and others at risk, and sometimes their choices lead to academic failure. One of our obligations as a university is to help students grow intellectually and emotionally so that they can make wise choices. We can assist them in this growth process in a very important way: we can ask them to assume responsibility for their actions.

Earlier this year, I asked our students to "get smart, get help, or get out." My intention was, and is, to send a clear and unequivocal message about the consequences of engaging in high-risk drinking. I want to assure that our policies are clear and that our goal of student success and safety is clear. I also want to make it clear that the consequence of a violation of university policies will lead to dismissal. This is not a new goal for the university. What is new is the focus on the first-year experience and how alcohol and drug abuse is linked to academic failure and success. This fall, all vice presidential units have been engaged in a discussion about the link between reduced high-risk drinking and academic success.

We are not alone in our struggles to curb alcohol abuse. It is a national curse. Recent data show

that in a one-month period, 20% of 8th graders and 50% of 12th graders report they had a drink. Even worse, in a two-week period, 30 % of all high school seniors report they have engaged in binge drinking (five or more drinks at one time). It is estimated that it costs the United States \$53 billion a year to respond to drunken behavior and violent crimes relating to adolescent drinking. By the time students go off to college, many of them are already abusing alcohol. When they come to campuses like ours, they are far from home, sometimes lonely and unsure of themselves. In these circumstances, it is especially important to be connected early to academic programs, engaged, mentored, advised, and helped to find alternatives to high-risk behavior.

There is no simple solution to the problem of alcohol abuse, but there are some emerging approaches that bear promise. The most important of these frameworks is referred to as social ecology. It is based on the recognition that one's behavior is shaped by the larger social environment, which is made up of five components, or levels of influence on a person's behavior: the intrapersonal (or individual); interpersonal (group); institutional; community; and the level of public policy. Understanding the framework clarifies the need to approach the problem of alcohol abuse on so many different fronts, and how intertwined the efforts must be.

Let me begin with the first level — the individual or intrapersonal. In an individual approach to alcohol or drug abuse, you outline for students the significant health risks associated with using alcohol. You would, as we have done, provide information about alcohol abuse during freshman orientation, during the first week of classes, and in the residence halls. There is little evidence that just giving people information about the negative consequences of using drugs or alcohol prevents abuse. That is why we begin to combine this approach with the interpersonal or group approach.

The group approach assumes, rightly, that individual behavior is strongly influenced by peers. Therefore, we try to get others (seniors, peer advisers, members of the same social clubs)

to serve as appropriate role models. Our social norms campaign is an example of this kind of approach, because it draws on the knowledge that students routinely overestimate how much their peers drink. The logic is that if they know that most of their peers do not abuse alcohol, then they will not. There is a growing body of literature that argues this strategy is a very important arrow in our quiver of solutions, but it cannot be the only one, because individual and group behaviors take place within and are shaped by larger forces.

The Higher Education Center for Alcohol and Other Drug Prevention suggests a focus on institutional (university) factors, community factors, and public policy. These three factors are tightly woven together, which means that work in just one area will seldom be successful. A good example of what this means is provided by DeJong and Langford, when they note that college communities often send mixed messages about high-risk drinking, and are often inconsistent in applying public policy. Let me provide an example of each. At the institutional level, we would have clear and consistent policies; we would provide evening and weekend alcohol-free events; and students would have rigorous course assignments that would keep them focused on their academic work. These solutions, as DeJong and Langford note, are not sufficient, because students do not live in isolation; they live in community.

In Chico, campus-area merchants promote drink specials and other encouragements to alcohol consumption that erode the message sent on campus. Therefore, community members and the university need to work hand in hand to address high-risk drinking. Finally, in the area of public policy, there must be strong enforcement for violations of underage drinking and related violations, or alcohol abuse prevention programs will not have the intended impact. We are fortunate in Chico that the problem of drug and alcohol abuse is owned by everyone, although we all have more work to do.

DeJong and Langford (2002) note that the work we need to do can best be sorted out by determining whether or not we are trying to: 1)

modify knowledge, attitudes, and behaviors; 2) change the environment; 3) protect the public health; or 4) intervene and treat abusers. For each of these foci, there are five environmental levels, as I noted above. That means, there are at least 20 (4 x 5) different approaches and things to work on when confronting alcohol abuse. The best way to think about what needs to be done by the campus, the community, and public safety officers is to identify the problem we are trying to solve and to generate specific solutions to the problems. Fortunately, we have already established and are carrying out some of the following solutions.

1. Many students have few adult responsibilities and a great deal of unstructured time. Solutions? Provide more recreational programs and alcohol-free activities.
2. Many people believe that drinking to excess is a normal part of the college experience. Solutions? Introduce a social norms campaign; increase faculty-student contact and mentoring.
3. Alcohol is readily available and inexpensive. Solutions? Work with local bar owners to limit specials, days or hours of serving alcohol, and the number of drinks served.
4. Bars, restaurants, and liquor stores use aggressive promotions to target college students. Solutions? Establish a cooperative agreement to institute minimum pricing; limit promotions; ban promotions of alcohol on campus.
5. Campus policies and local, state, and federal laws are not consistently enforced. Solutions? Increase ID checks; use decoy operations; enforce seller penalties.

Any approach to drug and alcohol abuse must be both multifaceted and long term. Our policies must be clear, consistent, and they must have consequences. Education works, but it works within a context of limiting access to alcohol and enforcement of laws and policies. The goal, again, is not to prevent people from drinking or experimenting, but to help them make wise choices. Our colleagues, across the campus and in the community, have been and will continue to work hard on what is a large-scale social

problem. Student Affairs will soon provide the campus with a list of good work being done and an understanding of the problems to be solved. Like the first-year experience program, the three vice presidents are working together to address the larger problem.”

It should be apparent from this report that reports, recommendations, and plans are one thing. Implementing them is another. Through the last 15 years, there have plentiful visions, ideas, and promising proposals for models of action. In addition to those reviewed earlier in this report, there were the President’s Commission on Student Life, 1990, the Co-Curricular Task Forces of 1998?, as well as a Task Force on Residentiality (1992). Space does not permit description of their findings and recommendations. Suffice it to say that, while many did not specifically address alcohol issue, many of the findings and recommendations did focus on environmental factors affecting drinking. These reports further illustrate that environmental change on a college campus is on-going process, extending over many years on many fronts involving a host of campus individuals and units. Here, too, implementation of plans and recommendations requires administrative leadership, persistence, and campus-wide cooperation, and prioritizing of resources.

### **Campus/Community Coalition**

The Chico Youth Alcohol Prevention Coalition (CYAPC) was established in December 2000 to address problems related to "High-risk drinking and unsafe behavior that has resulted in personal harm, the destruction of property, and put the youth of Chico in jeopardy" (quote from founding letter). The Chico community has been addressing the youth alcohol problems to some extent for many years. However, the death of a CSU, Chico freshman in fall 2000, an increase in problems due to alcohol at community events such as Halloween and St. Patrick’s Day, and local student-use survey data have recently catalyzed the community to do more.

This coalition of about 50 community leaders was formed at the invitation of the presidents of CSU, Chico and Butte-Glenn Community

College, the mayor, and the president of the Chico Area Chamber of Commerce. It includes youth and adult participants from such organizations as the City of Chico Administration, Chico Police Department, Chico Unified School District, California State University, Chico, Associated Students of Chico State, Butte Community College, the Chico Enterprise-Record, Boys and Girls Club, Butte County District Attorney’s Office, Butte County Superior Court, Butte County Behavioral Health, Enloe Hospital, Butte County Office of Education, Chico Area Recreation District, several churches, several bars and restaurants, Butte County Probation Department, Alcohol Beverage Control, Chamber of Commerce, Downtown Chico Business Association, property managers, Butte County Board of Supervisors, Chico City Council, and the local chapter of the American Heart Association.

The coalition went through an 18-month planning process that included a review of community youth alcohol indicators, identification of community needs and resources related to this challenge, a review of existing programs, a survey of literature for identification of effective programs elsewhere, and a commitment to constructively, cooperatively, and comprehensively address the problem. The process included a series of adult community meetings and several youth meetings that provided community input on the issue. In addition, a coalition steering committee continues to meet bi-monthly.

The coalition adopted an environmental change strategy to reduce underage and youth high-risk drinking. This entailed simultaneously, comprehensively, and cooperatively addressing a number of community factors likely to influence teen and youth drinking. This has involved intense and continuing cooperation among the public schools, the two institutions of higher education, the business community, county and city government including law enforcement, the medical community, volunteer service organizations such as Rotary, youth-serving organizations such as the Boys and Girls Club, local media, and other community coalitions such as Healthy Chico Youth.



This campus-community coalition played a key role in the City of Chico's decision to downsize the downtown Halloween and St. Patrick's Day celebrations as described earlier. Attention also turned to downsizing the annual Labor Day Sacramento River float which in recent years had attracted as many as 25,000 youth. The coalition also stimulated a community-wide open forum for parents of Chico area youth on underage drinking.

Key to success of the coalition was regular meetings by a Steering Committee of about a dozen members of the wider group. This group

continues to meet at least quarterly to share information and decide on next steps.

**Have We Made a Difference?**

Core Survey results between 2000 and 2003 reveal no meaningful change in drinking patterns at CSU, Chico (see Table 4). It appears that despite our best efforts at the time, little progress has been made in overall student alcohol consumption or in episodic heavy drinking. We noted earlier that we did seem to make only slight progress in reducing underage (freshmen) drinking. These data suggest the campus needs greater effectiveness in the future in addressing student alcohol abuse.

Table 4  
Core Survey Results Between 2000 and 2003 Showing Changes in Drinking Patterns at CSU, Chico

CORE SURVEYS*	2000	2001	2002	2003
N	1192	874	1250	1216
% Drank Past Year	93		90	92
% Drank Past 30 Days	85		82	84
Mean Drinks Per Week	8.23		7.73	8.45
Median Drinks Per Week	5		4	5
% Drank 5+ At Least Once Past 2 Weeks	59	57	56	60
% Drank 5+ 3 or More Times Past 2 Weeks	33	33	30	34
Mean Drinks Last Time Drank With Other Students		5.46		5.41
Median Drinks Last Time Drank With Other Students		5		5
Mean Drinks At Parties and Bars		4.72		4.63
Median Drinks At Parties and Bars		4		4
Mean Drinks at Off-Campus Parties (Among Those Who Attend)		5.35		5.17
Median Drinks at Off-Campus Parties (Among Those Who Attend)		5		5

\*Blank cells mean no data were collected on that variable in that year.

**Examples of Components of Social Ecology Model**

As we have noted throughout the report, the social ecology model of prevention is highly useful as a framework for understanding and guiding comprehensive alcohol prevention efforts. Prevention efforts at CSU, Chico for many years have focused on a wide range of targets, some individual, others environmental. Although we did not explicitly use the social ecology framework, we did consciously seek to influence individual students directly and indirectly toward healthier choices. Drawing

from the preceding sections, we set forth below examples of prevention efforts on this campus within each of the social ecology categories set forth by DeJong and Langford.

- **Change knowledge, attitudes, and behavioral intentions related to drinking (individual-focused strategy)**
  - CADEC lectures to academic classes (including freshman University Life course) on risks of alcohol abuse



- Survivor series in residence halls, including component on alcohol awareness
- Alcohol and drug awareness forums, open to entire campus
- *Wanna Know* campaign (voluntary, anonymous interviews and breath tests for first-year students returning to residence halls late on weekend nights)
- Distribution of alcohol awareness brochures posters in residence hall rooms
- Online course on alcohol awareness
- **Eliminate or modify environmental factors contributing to underage or heavy drinking (environmental management strategy)**
  - Non-alcoholic options in campus and community
    - Recreation sports programs
    - Student Union concerts, comedians, films
    - Free tickets to athletic events
    - Adventure Outings off-campus weekend trips
    - St. Patrick Day morning fun-run and pancake feed
    - All-night Frightfest Halloween dance and concert at student union
    - Ballroom dance classes on weekend nights
    - Recreation facilities (lighted running track, basketball courts, soccer/frisbee fields open late at night, including weekends)
  - Health-promoting norms in social, academic, and residential environments
    - Social norms marketing campaign
    - Wellness promotion tables, posters, forums
    - Academic clubs
    - Fun Without Alcohol Fair
    - Promotion of intramural sports as alternative
  - Restrict on- and off-campus marketing of alcoholic beverages
    - Student newspaper ban on drink specials ads
    - Ban on alcohol sponsorship or advertising at athletic facilities and events
- Student bookstore banned marketing of shot glasses, beer mugs, etc
- Shame directed by university leaders toward bars with blatant marketing of drink specials
- Ban on posting of drink special, other alcohol-related posters and flyers on kiosks
- Limit alcohol availability on- and off-campus
  - Alcohol-free in student union retail outlets
  - Alcohol permitted for campus functions only with approved permit
  - City decisions to not issue permits for additional bars near campus
- Develop and enforce campus policies and local, state, and federal laws
  - State Alcohol Beverage Control agency stiffens enforcement of underage alcohol sales in bars, off-sale outlets
  - Student organizations must submit signed alcohol policy to be recognized by university
  - Alcohol-free residence halls, with stiff sanctions for violations
  - Cooperation between campus and community policy makers and police to strictly enforce minors-in-possession, open-container laws, and drunk-in-public laws on and near campus
- **Reduce short-term harm from alcohol consumption**
  - Chico Safe Rides (free rides home at night)
  - Alcohol poisoning information posters, flyers, brochures
  - 21st birthday card with alcohol warnings
- **Treat students who show evidence of problem drinking, including addiction**
  - Individual alcohol assessments and referrals by CADEC
  - Counseling and referrals by Psychological Counseling Center and by Student Health Service
  - Alcohol Anonymous meetings on campus

### **Lessons and Recommendations**

We have seen that before and during my (Esteban) ten-year term as president, a number of plans were developed at California State University, Chico to combat underage and episodic heavy drinking. From these a host of promising programs to combat alcohol abuse were instituted, from good policies to timely referrals, to enforcement, to counseling, to training, to education. We have made progress. But our success has been mixed. Here are some of the lessons we have learned.

1. It is clear that an integrated, comprehensive long-term program focusing both on individual and environmental factors was never fully implemented. Until very recently, the one approach given most support by the institution was individual-targeted alcohol education through the Campus Alcohol and Drug Education Center (CADEC). We learned that individual-focused alcohol education by itself is not very effective. Broader efforts were never fully institutionalized, with prevention remaining the domain of a small group of dedicated individuals, mostly in student affairs and a few committed faculty.
2. Alcohol abuse prevention cannot be fought "on the cheap." It is clear that, other than the limited resources we committed to the educational programs of CADEC, we did not budget sufficient resources either on a one-time basis, or worse still, for the long haul.
3. Despite creating a number of task forces over the years, the presidents (Wilson and Esteban) were only partially successful in having the three vice presidents work cooperatively and effectively in implementing the recommended plans. When those who report to the vice presidents fail to see a commitment on the part of the vice presidents, their own commitment is likely to falter.
4. We never succeeded in fully engaging a sufficiently large number of faculty in this effort. This was and continues to be a major flaw in the campus's prevention efforts.
5. We did not adequately engage student leaders in a comprehensive alcohol abuse prevention effort, especially from the Greek community. Their commitment and involvement is vital.
6. We question whether the alleged benefits of the fraternity and sorority system justify its continuance, given the current nature of Greek culture. Most drinking problems over the years have been associated with fraternities. We believe that, unless Greek organizations (especially fraternities) undergo a major change of culture away from high-risk drinking, the very presence of the Greek system on this campus should be questioned. Of course, the campus and community would still face the challenge of seeking to influence and regulate the conduct of unsanctioned, non-affiliated Greek organizations. This is illustrated, ironically, by the recent death of a fraternity pledge from over-consumption of water during hazing — in a fraternity that several years previously had been denied continued recognition by the university due to a series of alcohol-related offenses. Solutions are not simple.
7. For many years, we mistakenly assumed that prevention efforts could and should be carried out by the campus in isolation from the surrounding community. It has become increasingly clear that the community and the campus must cooperate in the design and implementation of prevention plans.
8. As president, I (Esteban) failed to set specific goals and deadlines and assign these to specific individuals.
9. Efforts to prevent alcohol abuse were never a shared vision and a shared responsibility. It was never fully institutionalized. Unless it becomes fully institutionalized, efforts to reduce and prevent alcohol abuse will move in spurts, spurts that are stimulated, unfortunately, by the alcohol-caused death of students.
10. It became increasingly clear over the years that a comprehensive, integrated prevention approach must include consistent, strong enforcement of campus rules (especially in



residence halls) and community laws. This reality must be made crystal clear to first-year and transfer students even before they arrive.

11. This university, like many others, faces the continuing public relations challenge of conveying to the public, prospective parents, and incoming students that this is indeed a quality learning environment and that most students drink responsibly most of the time (or don't drink at all). The message must be repeatedly sent to new students that it is not necessary to engage in high-risk or heavy drinking to belong or have fun at this university.

12. The president must be the most visible and vocal champion and advocate of prevention efforts. This advocacy must be present from the first day of his/her presidency and must be unfaltering. It cannot be stimulated, as I am sorry to admit (Esteban), by the tragic, alcohol-caused death of a student.

13. One of the worst things a president ever has to do is to call a student's parents to inform them of their son or daughter's death. This alone should encourage presidents to push their institutions into having a comprehensive and integrated plan to deal with the scourge of alcohol abuse.

These lessons from our own painful experiences lead us to agree with the recommendations for developing and comprehensive and integrated strategic plans proposed by Gail Gleason Milgram and David S. Anderson in their Action Planner: Steps for Developing a Comprehensive Campus Alcohol Abuse Prevention Program (Milgram & Anderson, 2000).

1. Create a task force. It is essential that the members of the task force be influential members representing key stakeholders and constituencies. Among those are top administrators (possibly including the president of the institution), student leaders (including those heading Greek organizations), residence-life personnel, security officers, faculty leaders, parents, alumni, and community leaders.

2. Determine from the outset the general principles that will guide the work of the task force. These principles need to be well defined, must avoid conflicting messages, must be unambiguous, and must indicate the desired outcomes. They also need to be reviewed periodically to ensure that the action plans that emanate from them achieve the intended purpose and are well understood by all constituencies. The most important principle is this:

Student alcohol abuse is a multi-causal problem, the result of a host of influences, including societal context, family background, attitudes and values, community context, and curricular and co-curricular factors on the campus. Therefore, prevention programs must be comprehensive, focusing both on students' own attitudes and on environmental influences within the institution's control in the community and campus. The social ecology framework with its focus on the individual and on environmental management is very useful for guiding such efforts.

3. Articulate a clear vision and a set of goals that spring naturally from the general principles.

4. Prioritize the short- and long-term actions to be taken. It is critical to set deadlines for these actions, to assign them to specific individuals, and to make these individuals accountable for their success or failure.

5. Allocate sufficient funding to implement these actions. Plans and visionary thinking are well and good but mean little unless backed up with adequate resources to get the job done.

6. Ensure that there is a system in place to monitor and assess the progress of the strategic plan and the defined action plan. Perhaps the best location to conduct this type of assessment is in the office of institutional research. Such assessment must be data-based. It cannot be founded on hunches or anecdotes. These data should include local studies and these should be measured against well-established benchmarking national studies.



7. Coordinate the work of all the sub-groups constituting the task force so that it is clear that the campaign against alcohol abuse is the responsibility of everyone within the institution and the broader community.

8. Institutionalize the program so that a) it will always function effectively through top administrative transitions, b) the importance of the program with all university constituencies including students, faculty, staff, alumni, parents, and community is clearly established, c) the program is viewed as so essential and integral to the mission of the university as to ensure that the university always provides the necessary funds and resources needed to run the program effectively.

9. Market the vision and goals of the program to both internal and external constituencies to ensure that their core nature within the strategic plan of the university is universally known and understood; and

10. Make certain that the president of the university is seen as the chief proponent and champion of the alcohol abuse prevention and educational program.

As important as is the strategic plan and the work of the task force, the success of such a program is in its implementation. The fight against alcohol abuse among students must become part of the culture of the institution. As such,

1. The curriculum must reflect this reality. Faculty, whose mission and dedication is facilitating knowledge acquisition by their students must believe sincerely that students cannot learn effectively at all if they come to class impaired or fail to come because of illness related to the abuse of alcohol.

2. The fight against alcohol abuse cannot be seen as the domain and responsibility of just a few "experts", a situation, which often occurs at many campuses, either from the outset or gradually as many lose interest in this constant effort.

3. This effort cannot be seen as a passing phase. It is long-term campaign, not just a series of battles. It is an unending problem as every four years or so there is a new generation of students that must be educated and influenced.

4. No plan will be successful unless the lines of demarcation between and among vice presidents disappear and everyone, regardless of who they report to or to what area within the university they belong, works cooperatively. The silos or territorial-wall mentality that often defines the structural and administrative divisions in a college or university must be set aside. Most effort to combat alcohol abuse.

5. Student residence directors and all those who work directly with students in residence halls must take the issue of alcohol abuse very seriously. Unfortunately, many employees are themselves not much older than the student residents and thus have little authority over their charges and often proffer the rules and regulations governing alcohol use and possession but do it with a permissive wink. One possible way to address this problem would be to require campus housing employees to be older, better paid, and made more accountable.

6. Faculty must become actively involved. Faculty represent probably the most effective weapon against student alcohol abuse because they have tremendous influence on their students. Besides, faculty are generally committed to teaching. Because students learn best when they are alert and unaffected by the negative consequences of the abuse of alcohol, it is in the faculty's best interest to educate students about the harmful consequences related to alcohol. Unfortunately, with the exception of a small number of professors, faculty do not perceive it as their responsibility to make room in their curriculum or class time to deal with this serious problem. Yet, without their participation, it is unlikely that any plan to deal with this curse can ever be fully successful.

7. If the campus is located in a small town, it is essential to bring the decision makers of the community into the discussion from the outset



and seek their active participation in finding solutions to the problem.

8. Any program such as this must have an influential and well-respected member of the university community who is going to be directly responsible for its implementation. This person must have the full support of the president and the vice presidents must work closely and cooperatively with this individual so those who report to the various vice presidents

understand that they will be evaluated in part on the basis of their commitment to the campaign against alcohol abuse and their efforts to make the program successful.

If the above guidelines are followed and their underlying principles become institutionalized, there is little doubt that college and university campuses will likely make positive progress toward reducing alcohol abuse among their students over the long run.

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## Appendix A Undercover Report

Abuse of alcohol was not the only concern the CSU, Chico administration worried about. The use and abuse of drugs by students were also a serious preoccupation. In fact, in response to the concerns expressed by some students and parents that the residence halls were the site of not only serious use, but sales of drugs, housing and the University Police, at the beginning of the fall 1996 semester, sought permission from the university president to conduct an investigation into the drug dealing that they believed was a threat to the learning and living environment of the university. A 23- year-old undercover officer was "planted" in the largest residence hall. Based on the intelligence gathered by this officer over a two and a half month period, a team of highly trained police officers from the Chico campus and members of the California State University Critical Response Unit arrested ten students on a variety of marijuana sales and possession charges.

The reaction was predictable. Many parents, students, and community members praised the administration for taking an active role and sending a clear message. But there were also students, parents, faculty, and community members who criticized severely the administration for what they viewed as a heavy-handed approach and a violation of students' privacy rights. The day after the raid, about 30 students invaded the office of the president and brought TV cameras with them to document their "meeting" with the president. The Office of the President received phone calls, letters, and countless e-mail messages. Most expressed support but a very significant number condemned the decision. People from all over the country who believe in the decriminalization of drugs sent the president e-mail messages deploring the tactics used against the students and asking for the immediate termination of the president. Those critical of the decision to carry out a sting operation predicted that CSU, Chico's reputation would be greatly tarnished and students would stay away.

Some of the ten students arrested were expelled from the university after due process. Others went unpunished. The university's case was seriously damaged and the district attorney decided not to prosecute citing "improprieties" committed by the undercover police officer. The officer had admitted to providing alcohol to underage college students and to dating a female student from the residence hall.

### **What lessons did we learn?**

The university police should have been more careful about the selection of the undercover agent. He was a recent graduate from a police academy and did not have sufficient experience or the necessary professionalism to carry out the assignment. The inappropriateness of his behavior not only gave a black eye to the university but allowed a number of students guilty of drug trafficking to walk away without legal consequences.

Despite obvious mistakes, it was necessary to do something about the use and peddling of drugs in our residence halls. As a university we wanted to send a clear message to students that drug trafficking would not be tolerated. We also wanted parents to know that the university was vigilant and cared about the safety of their sons and daughters.

Our enrollment did not go down, as many critics had predicted; it increased. It is clear that many parents approved of the drug bust, understood that the university cared about the welfare of its students and regarded the campus as a safer place.

**Appendix B**  
Fall 2001 Prevention Plan  
California State University, Chico  
Plan For Reducing Student Alcohol Abuse  
Fall 2001

**Introduction**

The university is concerned about alcohol abuse within its student body, a problem that is tragically illustrated by the alcohol-induced deaths of several students during recent years. The extent of the challenge is further documented by survey data and other indexes of student behavior. The university is committed to doing all we can to assure the health and safety of our students, thereby enhancing their quality of their educational experiences.

This plan has generated intense deliberations by university administrators, faculty, staff, and students as we have sought to strengthen our alcohol-abuse prevention efforts. We expect to revise and improve the plan periodically in response to new ideas and accumulate experience. For example, the President's Committee on Alcohol and Drug Abuse during fall semester 2001 will review existing policies and programs and will recommend needed changes on this campus in response to recommendations from the Chancellor's Committee on Alcohol Policies and Programs.

**Description of the Problem**

Alcohol abuse among college students, many of whom are under the minimum legal drinking age, is a major health problem on college campuses with serious negative consequences for individual drinkers, those around them, and the college environment. National surveys have consistently found that the prevalence of periodic heavy or high-risk drinking (indicated by self-reports of consuming five or more drinks on a single occasion) is greater among young adults than other age groups. The campus-wide Core Drug and Alcohol Survey of 1192 CSU, Chico students during spring 2000 indicated that our students reported engaging in high-risk drinking significantly more often than the national average for college students. Specifically, 59% of CSU, Chico students reported engaging in high-risk drinking at least once during the last two weeks, compared with 47% of students nationally. The rate of underage drinking was also significantly higher here than the national average, owing in part to the residential nature of this campus.

Within the first six weeks of fall 1999, law enforcement issued 472 minor-in-possession citations in the Chico community. During Halloween 2000, police reported ninety arrests, the majority for drunk-in-public violations and alcohol-related fights, two-thirds of which were from individuals from outside of Chico. Alcohol poisonings and alcohol-related injuries are a weekly occurrence at the local hospital emergency room. On Halloween 2000 the hospital treated ten alcohol poisoning cases. According to the Core survey, 21% of our students said they had been hurt or injured in the last year while under the influence of alcohol and/or drugs. And, tragically, five CSU, Chico students have died from alcohol poisoning in the last five years as a result of high-risk drinking off-campus. If students are our highest priority, as stated in the University Strategic Plan, then we must enhance preventive and education efforts to reduce high-risk drinking among CSU, Chico students.

**Desired Outcomes of Prevention Plan**

Through the Prevention Plan described below, we seek the following outcomes:

- Reduce the percentage of underage students who report consuming alcohol within the last 30 days.
- Reduce the average number of drinks per week reported by our students.



- Reduce the percentage of students who report consuming five or more drinks during the last two weeks.
- Reduce the percentage of CSU, Chico students who report negative personal consequences due to alcohol.
- Reduce the number of alcohol-related incidents in the residence halls, particularly those that result in damage and/or injury.
- Reduce the number of alcohol incidents requiring medical attention.

We believe progress toward these outcome objectives will enhance the health, safety, and educational experiences of CSU, Chico students.

### **Assumptions**

The following assumptions about students and organizations have informed deliberations which produced this prevention plan.

- At all times, students are considered to be adults with full responsibility for their actions and education.
- Changes within the student culture will come only with the full engagement of students.
- As with most complex issues, a single solution will not substantially eliminate the problem of alcohol abuse.
- It is a necessary condition of effective university action that adequate resources be made available for adopted initiatives.
- Programmatic and policy initiatives must be given sufficient time to achieve results, usually measured in years, not weeks or months.
- A university-wide commitment will require that responsibility for the design of interventions and programs and their support, over time, be accepted by major administrative units and departments.
- Goals and actions related to drug and alcohol abuse are part of the Strategic Plan, Priority #1: "To develop high quality learning environments within and outside of the classroom."
- The greater Chico community must be engaged in developing strategies and seeking solutions.

### **Current Initiatives**

Several initiatives, which reflect our long-term interest in this issue, are currently underway.

- The expansion of the BMU has recently been completed. The larger facility, with expanded programming, will provide new opportunities for alcohol-free programs and leisure activity. The facility will have extended weekend and evening hours.
- Additional recreational facilities, which would provide extensive alcohol-free opportunities, has long been an issue. A fee referendum to build a recreation center was defeated during spring 2001. Efforts to plan and fund a viable recreation center will continue.
- Recent collaboration between Recreation Sports and the residence halls has produced a significant increase in freshman participation in intramural and recreational sports. This initiative will continue.
- The Intercollegiate Athletic administration is working with coaches and developing a plan that addresses alcohol concerns regarding student athletes.
- Wildcat Pride, a new student spirit organization, continues to attract students to intercollegiate athletic events, which are alcohol-free activities.

- With the addition of a .5 adviser in Greek affairs, good progress has been noted in the operation of Greek governing bodies and integration into campus life. Continued progress can be anticipated.
- The social norming campaign, designed to correct widespread student over-perception of peers' drinking, will be expanded with additional support from the CSU Chancellor's Office, a grant from the U.S. Department of Education, and additional campus resources.
- The campus-wide Core survey was conducted in 1994, 1996, and 2000. The freshman-only Core survey was conducted in 1997, 1998, and 2000. Campus Alcohol and Drug Education Center (CADEC) staff expect to continue to administer the Core campus-wide survey every spring and the freshman-only survey every fall. These surveys allow the university to better understand student behavior and attitudes, to track patterns of student drinking through time, and to assess alcohol-abuse programs and policies.
- A collaboration with the Chico community to develop strategies for dealing with the problem of alcohol abuse among young people has been initiated. Because students spend much of their time off the campus, the community must be included in any effort to minimize excessive use of alcohol. The overall strategy is to develop partnerships with other institutions and citizens to minimize the excessive use of alcohol.
- A review of the CSU system-wide recommendations (spring 2001) will be conducted during fall 2001 by the President's Advisory Committee on Alcohol and Drug Abuse and by other relevant units.

### Goals

Taking into consideration the above information regarding the problem of alcohol abuse, the above assumptions, and current initiatives just described, the following goals were developed for the University Alcohol-Abuse Prevention Plan.

#### **Goal #1: Develop and implement a communication plan for students, faculty, and staff addressing alcohol and safety issues.**

##### Action Plan

- Sharpen specific anti-alcohol messages.
- Create more positive university messages.
- Promote student connections with the University.
- Increase the use of media
- Keep high awareness of CADEC
- Strengthen connections with community.
- Continue high degree of alcohol awareness in residential life.

#### **Goal #2: Develop a class schedule that allows students to maximize progress toward a degree.**

##### Action Plan

- Examine the distribution of classes and report on factors which influence the development of the class schedule.
- Present results of survey from student organizations on class scheduling to Cabinet.

**Goal #3: Educate faculty and staff student group advisers regarding substance abuse issues.**

**Action Plan**

- Institute an annual orientation program for organization advisers that outlines information on alcohol use and abuse, as well as other policies and issues.

**Goal #4: Encourage faculty to play an active, constructive part in preventing student alcohol abuse.**

**Action Plan**

- Include information on drug and alcohol abuse in New Faculty Orientation.
- Inform faculty about warning signs of student alcohol abuse and about alternatives for dealing with students showing these signs.
- Inform faculty about the goals and strategies of the "Did You Know?" campaign.
- Encourage faculty to maintain high academic expectations, with particular attention to lower-division courses, early weeks of the semester, and Fridays.
- Encourage faculty to focus, where appropriate, on issues related to student culture and student alcohol abuse from the perspective of the relevant discipline.
- Inform faculty and staff about their alcohol-related responsibilities/ liabilities in their out-of-classroom work with student organizations and students.

**Goal #5: Provide opportunities for faculty and staff to conduct research on drug and alcohol abuse and to present the results of their research.**

**Action Plan**

- Provide those faculty and staff interested in drug and alcohol research with information on funding opportunities.
- Inform faculty and staff about the opportunity to present research on alcohol and drug abuse during the annual CELT conference.

**Goal #6: Develop additional programs and activities for first-year students.**

**Action Plan**

- Move one or two campus-wide spring events to fall to engage first-time freshmen (for instance, Scour and Devour).
- Implement the First-Year Survival Series program in residence halls.
- Expand evening and weekend programming in the new BMU.

**Goal #7: Take steps to improve residential hall education, programming, and enforcement activities.**

**Action Plan**

- Set aside funding by University Housing and Food Service to hire or contract through University Police student security staff to walk the residence halls and University Village grounds during



Friday, Saturday, and Sunday early morning hours (1:00 a.m. through 6:00 a.m.) to increase public safety and policy enforcement.

- Through an improved compensation package, increase the age and experience of residence hall advisers.

**Goal #8: Inform students and parents about drug and alcohol abuse problems.**

**Action Plan**

- Develop information on drug and alcohol abuse to be presented/distributed at Summer Orientation, Getting Connected, and in University Life classes.
- Secure permanent funding for the social norming campaign to insure programmatic continuity over the next five to ten years.
- Develop an inventory of faculty and staff who are available to provide in-class discussions and lectures on alcohol and drug abuse and identify an office as a point of contact for those who wish to make use of these persons.

**Goal #9: Work with the Greek community to improve rush and other member programs.**

**Action Plan**

- Establish a new member seminar series entitled "Greek 101."
- Ensure that IFC-related fraternities implement the IFC two-year deferred-rush agreement, beginning fall 2001. Under this agreement, students who are sophomores or above will be able to go through recruitment at any time (fall or spring). Students who are freshmen must have completed 12 units at CSU, Chico in order to be eligible for recruitment.
- At the end of fall 2002 IFC and the Student Activities Office will assess this deferred rush policy.
- Continue to work with non-IFC-affiliated fraternities to encourage deferred rush throughout the Greek community.
- Encourage IFC to work with Recreation Sports to establish a new schedule for their intramural games with particular attention to holding games on Fridays evenings and Saturdays.
- To improve communication and rapport between IFC and the Chico Police Department and IFC through athletic contests.
- Cooperate with IFC in training chapter risk managers.

**Goal #10: Schedule the use of facilities to provide students with sufficient study hours, especially on weekends.**

**Action Plan**

- Assess current hours of such facilities as the Meriam Library, computer labs, and other library and study rooms in relation to actual and potential student demand.
- Identify likely costs and potential resources for these needs.



**Goal #11: Develop a multifaceted approach to alcohol education for athletes that will include coaches, trainers, team physicians, and administrators working with CADEC and Judicial Affairs.**

**Action Plan**

- Intercollegiate Athletics will consult with CCAA on alcohol-related issues.
- Intercollegiate Athletics will cooperate with CADEC and other campus units to develop and implement a prevention education program for athletes.

**Goal #12: Provide additional recreation space, facilities, and programs.**

**Action Plan**

- Seek funding to place lights on the football practice field to provide additional space and program support for recreational activities.
- Continue to seek the passage of a recreation center referendum.

**Goal #13: Enforce university rules and regulations related to alcohol.**

**Action Plan**

- Ensure that student groups are currently held to the rules and regulations outlined in the Student Organization Policy. This includes giving the Student Activities Office the authority to impose sanctions on the status of organizations found to be in violation of provisions contained in the policy. These sanctions may include probation (limited use of university resources during a trial period) or suspension (may not use university name or facilities, participate in campus events, nor conduct business on campus at any time).
- **Ensure that individual students will be appropriately sanctioned for on-campus violation of the University Alcohol Policy.**

**Assessment**

The university is committed to continually assessing the nature and extent of student alcohol abuse, factors contributing to the problem, and our progress in reducing such abuse. Through various surveys, documents, and records, we will continue and, where appropriate, expand assessment efforts related to the following:

- Patterns and trends of student alcohol use and abuse
- Consequences of alcohol abuse
- Alcohol-related beliefs and perceptions
- Protective behaviors reducing risks of alcohol abuse
- Environmental influences on campus and in the community
- Effectiveness of prevention programs

Such assessment efforts will be carried out by relevant campus units such as CADEC, the Office of Institutional Research, vice presidents' offices, and grant projects as well as by interested faculty and students who are engaged in relevant research activities.

Below is a report developed by the President's Advisory Committee and the Vice President for Student Affairs office on progress in implementing the above recommendations as of January 2003.

### **Progress in Implementing Prevention Plan: Summary of CSU, Chico's Alcohol Prevention Plan Activities January 2003**

The following goals were developed for the University's Alcohol Prevention Plan. This plan was developed as a work in progress and with the understanding that change would occur as the university and Chico community work to address this important issue.

This report will take a snapshot view of the progress CSU, Chico has made to date in addressing the stated goals.

#### **Goal 1: Develop and implement a communication plan for students, faculty, and staff addressing alcohol and safety issues.**

- ---, along with --- and --- developed an Alcohol-Abuse Education Plan. This plan is intended to increase student's awareness of on-campus programs that combat alcohol abuse and promote healthy choices.
- Enhanced our social norming campaign by producing specific messages about over-perceptions of peer's drinking via Orion newspaper Ads, "Do You Know Campaign" posters, mouse pads, screen savers, and emails on Student Announcements.
- Placed university's alcohol plan on university's official web site with links to CADEC, CSU, Chico's Alcohol Policy and Programs.

#### **Goal 2: Develop a class schedule that allows students to maximize progress toward a degree.**

- Not implemented at this time.

#### **Goal 3: Educate faculty and staff student group advisors regarding substance abuse issues.**

- All university recognized student organizations are required to develop and adopt their own alcohol policies. Such policies should establish, at minimum, an affirmation of and adherence to state laws regarding the consumption, sale, and service of alcohol. Each year, the policy of every university recognized organization must be signed by its chief student officer.
- As a result of the afore mentioned, Student Activities Office has had the opportunity to engage in numerous discussions with advisors, deans, and department chairs on issues pertaining to role(s) of the advisor.
- College of Business faculty advisers discussed alcohol issues with their student organizations. College Dean met with student organization leaders.
- College of Engineering, Computer Science and Technology led a full effort to inform their students, advisers, and student organizations about drug and alcohol abuse, and its consequences.

#### **Goal 4: Encourage faculty to play an active, constructive part in preventing student alcohol abuse.**

- Health and Community Services Department developed a module on behavioral health risks for University 001 classes.
- New Faculty Orientation discussed brochure.
- Center for Learning and Teaching Conference offered 2 sessions by faculty and staff engaged in research on drug and alcohol issues.
- College of Humanity and Fine Arts provided alternatives to drinking and reviewed alcohol policies with their student groups.
- School of Nursing developed policies concerning alcohol and drug abuse.
- College of Agriculture requires faculty to engage students early in their course work.

**Goal 5: Provide opportunities for faculty and staff to conduct research on drug and alcohol abuse and to present the results of their research.**

- The "Wanna Know?" program has been launched via a U.S. Department of Education grant to survey students about their alcohol use and to increase the understanding of student drinking patterns. First year results are encouraging.
- CORE survey conducted Spring 2002 indicates encouraging results.
- College of Business and Natural Sciences have faculty involved in drug and alcohol abuse research and prevention efforts.

**Goal 6: Develop additional programs and activities for first year students.**

- CADEC, with University Housing, Psychological Counseling, and the Health Center, has increased the efforts to help first-year students adjust to college life via the First Year Survivor Series in the Residence Halls.
- A.S. increased the programming budget to \$40,000 (a 100% increase) to expand evening and weekend programming in the new BMU. As a result the quality of the evening and weekend programming has improved.
- Moved Scour and Devour clean-up program to Fall semester to engage 1st-time freshmen in a positive event.
- St. Patrick's Day Fun Run and Pancake Breakfast encourages first year students to participate in a positive activity.

**Goal 7: Take steps to improve residential hall education, programming, and enforcement activities.**

- A Residence Hall Alcohol Task Force was formed to review Housing's policies and procedures concerning enforcement, training of resident advisors, and consequences for alcohol policy violations.
- Creation of the Residence Community Coordinator has given more focus and consistency to the sanctioning process.
- An improved compensation package resulted in hiring junior and above students into RA positions. Increasing the age and experience of the residence advisors led to an increase in the documentation of policy violations.
- Integrate alcohol issues into the various components of the training program.

**Goal 8: Inform students and parents about drug and alcohol abuse problems.**

- CADEC has presented and distributed information on alcohol and drug abuse at Summer Orientation, Getting Connected, in University Life classes, and all CAT classes.
- CSU, Chico's Alcohol Policy and Program is located on the University's web page.
- Specific information on the Alcohol Policy is sent with the Housing Rental Agreement to ensure that students and parents are aware of the Alcohol Policy before signing their rental agreement.
- Individual letters and other information are sent to parents by the University informing them of the concern about alcohol use by young people and asking their help in getting the message to their children about making good choices.



**Goal 9: Work with the Greek community to improve Rush and other member programs.**

- Established a Greek Life Task Force to examine issues related to fraternities and sororities on campus.
- Deferred Rush for first-time freshman has continued for all IFC member chapters. A careful study is being conducted about the effectiveness continuation and/or expansion of deferred Rush to include all sororities.
- Increased the Greek Advisor's time base to .75%.
- Enhanced the quality of communication between fraternity leaders and the residence hall staff.

**Goal 10: Schedule the use of facilities to provide students with sufficient study hours, especially on weekends.**

- College of BSS reviewed their class scheduling.

**Goal 11: Develop a multifaceted approach to alcohol education for athletes that will include coaches, trainers, team physicians, and administrators working with CADEC and Judicial Affairs.**

- Conducted Alcohol Education seminar for all the 14 club sports teams.
- Recreational Sports requires each club sport to establish its own Alcohol policy and take part in Annual Alcohol Awareness Training.
- Athletic teams will be participants in a comprehensive on-line Alcohol Education Program Spring, 2003.

**Goal 12: Provide additional recreation space, facilities, and programs.**

- Continue to work on the development of a Recreation Center Referendum.

**Goal 13: Enforce University Rules and Regulation related to alcohol.**

- University Housing and Food Services conducted a review of its policies and procedures concerning Alcohol Policy Violations.
- All student groups were notified of the new requirement in order to obtain University recognition.
- The Greek organizations are reviewing the recommendation submitted by the Greek Life Task Force for implementation.

(For a description and assessment of a less-than-fruitful effort to enforce drug-free standards in the residence halls by implanting an undercover police officer, see Appendix B.)

**Other Alcohol Prevention**

**Accomplishments To Date**

- All University Recognized Student Organizations are required to develop and adopt their own Alcohol Policies.
- Recreational Sports requires each active Chico State Sport Club to establish its own Alcohol Policy and take part in annual Alcohol Awareness Training.
- The University established an Alcohol Abuse Prevention Plan, which sets objectives campus wide to improve the problems of Alcohol Abuse.



- Spring 2002 CORE survey results indicate a trend in the reduction of alcohol and drug use by CSU, Chico students.
- The "Did You Know" Social Marketing Campaign's use of newspaper ads, posters, mouse pads, screen savers, and email is in full operation and is indicating positive results.
- Office of Traffic Safety (OTS) Sober Initiative grant for \$50,000 was awarded to Student Affairs.
- IFC Greek Members have enacted new policies, including deferred Rush for 1st-time freshmen to restrict alcohol abuse.
- College of Business has stopped serving alcohol at its college functions.
- A community wide effort resulted in making Halloween 2002 a safer holiday experience.
- Associated Student increased their programming budget to \$40,000 (100% increase) to expand the evening and weekend programming in Student Union.
- Created the First Year Survivor Series for first-time freshmen living in residence halls to assist them in their adjustment to college life.
- The campus is moving toward implementing a fee for a class for student violators of the University Alcohol and Drug Policies.

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# Under the influence

## Student Drinking Takes Its Toll

by Marion Harmon



Probably nothing is better known—or more regretted—about California State University, Chico than its number one party-school ranking by *Playboy* magazine in 1987. The school's infamous Pioneer Week had spiraled out of control, becoming for many students and out-of-towners nothing more than an excuse for a big, drunken party. President Robin Wilson cancelled the 60-year-old tradition after the riots that year, and he banned on-campus student drinking. Still, Pioneer Week's "replacement," the 1989 and 1990 Rancho Chico Days, also ended due to riots largely fueled by alcohol.

In Chico, drinking remains a popular form of "entertainment" among its students. Downtown bars do a brisk business from student customers. Special events like Halloween bring out the town's entire police force and an army of volunteers to combat the effects of partying, and from Thursday night through Sunday, crowds of students hold court with plastic cups of beer in the old Victorians and apartments near campus.

While a spring 2000 campus survey shows that most CSU, Chico students drink in moderation most of the time, there is a dangerous trend of binge drinking (defined as five or more drinks per sitting; some organizations prefer the term "high-risk drinking" because they believe "binge" is often viewed as much heavier drinking than the five-drink standard). Last fall, the death of 18-year-old Adrian D. Heideman gave a voice to this issue like no other. Not known as a problem drinker, the promising freshman had decided after a few weeks at college to go Greek. "It's so fun," the Pi Kappa Phi pledge wrote in his online diary. "I was afraid about going Greek at first because I didn't want to be a part of anything that was just about drinking and partying and sports and stuff I don't like, but the fraternity I'm pledging to is a lot nicer than that."

On October 7, Heideman consumed a bottle of brandy during a party with his new fraternity brothers, was put to bed in a downstairs bedroom of the fraternity house, and at 1 a.m. was found dead from an alcohol overdose. CSU, Chico has permanently

withdrawn recognition from the Chico chapter of Pi Kappa Phi. Three Pi Kappa Phi members were charged January 18 with misdemeanor counts in connection with Heideman's death. The charges could carry up to one year in jail and \$1,000 in fines; Butte County District Attorney Mike Ramsey said a change in the law prevented him from filing felony manslaughter charges in the case.

## Tragic trend

Heideman was the fourth CSU, Chico student in five years to die from alcohol-related causes. In 1997, 21-year-old Justin M. Sommers died at a party from alcohol poisoning and the "designer drug" GHB, and in 1996 and 1998, respectively, Chance Woodroof and Nicholas Losik died from alcohol poisoning after celebrating their 21st birthdays by trying to down the "traditional" 21 shots of alcohol. Statistically speaking, that's about 0.006 percent of the student population over five years. But statistics don't show the tragedy of a young life cut short, the grief of family and friends. Statistics can't convey the consequences of alcohol abuse suffered by students: academic failure, injury, sexual assault, arrest, a lifelong battle with alcoholism. And sometimes even death.

"I think the major myth is that people think they can't die just from drinking—just put them to bed, let them sleep it off, they'll be fine in the morning," says Shauna Quinn, program manager for CSU, Chico's Campus Alcohol and Drug Education Center (CADEC). "Many of the students who have died have been put to bed by their friends and left alone."

Underage alcohol use is a major contributor to morbidity and mortality in adolescents and young adults, according to the 1999 Harvard School of Public Health College Alcohol Study. Last Halloween when 15,000 revelers descended on Chico's downtown, 48 of the 90 arrested were under 21.



After the Pioneer Week riots in 1987, the city council established a citizens task force consisting of about a dozen members from the community, the university administration, the student body, and the police department. Now called the Special Events Coordinating Committee, it concentrates on keeping Halloween festivities under control.

The Greek system continues to receive a lion's share of the blame when it comes to underage and binge drinking among college students. Sociology professor Walt Schafer, on special assignment from the president on alcohol issues, says that the Greek organizations are behaving more responsibly now than was true a decade ago. "They don't have the huge, open fraternity parties that were once the case, and I think that's a result of positive influences from the student activities people on campus, good relationships with the Greeks, and improved relationships between the Chico Police Department and fraternities," he remarks.



An encouraging development in Chico's Greek system is the implementation of stricter alcohol policies by the Interfraternity Council (IFC) and the Panhellenic Council last fall. The fraternities' Risk Management Policy includes rules regarding alcohol and drug use, hazing, and sexual abuse and harassment. Jonathan Smith, 2000 president of the IFC, says the policy is there to eliminate underage drinking, common sources of alcohol (like kegs), and binge drinking at fraternity social functions.

"Part of adopting these policies is showing the rest of the community and also showing ourselves that we're not just about drinking and most of the negative things that people perceive about fraternities," says Smith. "That's maybe 5 percent of what we're actually about. We're about making better men and brotherhood and being an extended family."

### Students educating students

Among the university's arsenal in the fight against substance abuse is CADEC, established in 1989. Through a grant from the Department of Education, CADEC set up a program with a peer education model—students educating students about social problems. Program Manager Shauna Quinn, a former social worker with Butte County, has seen a change in students' drinking patterns.

"Ten years ago, if you asked students why they went out to drink, they would say, 'to socialize, to relax, to be able to dance more freely, to have a good time,' " says Quinn. "Now if you ask, the majority of students say, 'to get drunk.' "

This "Animal House" mentality is true nationwide. The Harvard School of Public Health study of 14,000 students at 119 colleges shows that 44 percent of college students were binge drinkers in 1999. Students who participate in binge drinking often suffer much more than a pounding hangover—they have more academic failures, experience a higher rate of personal injury, and are involved in more regretted sex and sexual assault.



CADEC holds workshops, offers individual alcohol assessments, and disseminates educational materials. The center also holds the annual Fun Without Alcohol Fair, and fraternities and sororities, residence halls, and faculty request CADEC staff to talk about alcohol issues.

What seems to make the program especially accessible to students are the peer educators, some of whom have had their own problems with alcohol—experiences that they readily share with the students. "We don't preach; we aren't asking people not to drink, not to party," says peer educator Sadie Wight. "What we do ask is that people be knowledgeable about situations they're putting themselves in or about the things they put in their body, and make responsible and informed decisions."



Wight is the president of Safe Rides, a free taxi service for students too drunk to drive home on Thursday, Friday, and Saturday nights. At CADEC's bimonthly substance abuse seminars for students who get in trouble with alcohol or drugs in the residence halls, two of the peer educators work as a veritable drug and alcohol tag team. They repeatedly urge students to be smart when they drink. "We see all kinds of people who really don't want to be there in the beginning but, by the end, have learned something," says Wight. "You can tell when they walk out the door, they're walking away with a greater sense of knowledge."

### No small problem

Heightened public interest in binge drinking has prompted changes in the way colleges—and college presidents—address this problem. In October, CSU, Chico President Manuel A. Esteban announced six university actions in response to Heideman's death, including determining the extent, location, and demographics of high-risk drinking behavior and reviewing the role of faculty/staff advisers to student organizations. His Web pages, at [www.csuchico.edu/prs](http://www.csuchico.edu/prs), include updates on CSU, Chico's alcohol programs and services, as well as the university's alcohol policy. He also joined a committee of CSU presidents to review the 23-campus system's alcohol policies and has become increasingly vocal about the dangers of binge drinking. At the 11th Annual Forum for National College Awareness Week just 10 days after Heideman's death, Esteban spoke to a crowd of students about their role in stopping this epidemic.

"I deeply believe that bingeing is a scourge," he said. "It has to be brought under control, and no one can do it unless you, the students, want to bring it under control. I could write executive memorandums, I could send e-mail messages, I could do all kinds of things. We could have the most perfect system as a university, but ultimately, we cannot control what you do as individuals when you're away from the university."

The task for the university, the students, and the community is daunting. Alcohol is much cheaper and easier to obtain than other commonly used drugs like marijuana. Even underage students seem to have no problem acquiring it, a fact corroborated in casual conversations with CSU, Chico students and in the Harvard study, which shows that correlates of underage binge drinking include residence in a fraternity or sorority, easy access to alcohol, obtaining drinks at lower prices, and drinking beer. It's a socially acceptable drug, and many local businesses make a lot of money from it. The most noticeable are the dollar drink specials and "pub crawls" promoted by bars, providing students with added incentives to drink more and drink faster.

Adrian's death  
made me realize  
more than anything that  
you don't really have to drink  
to have a good time.

"We have to get the bar owners to be more responsible than they are," says Esteban. "On St. Patrick's Day, when they open bars at 6 a.m. and provide drinks at a reduced price, all it does is encourage people to drink. When they have bar crawls, all they're doing is encouraging people to drink more."

While bar policies are seen as part of the problem, it probably will take a community effort to work out the best solutions to this complex issue. "I think the solution, frankly, must be multifaceted," says Esteban. "I don't think any one thing is going to work."

### A new approach

One effort that the university hopes will be successful is a new marketing campaign starting this spring. Last fall, CADEC received the results of its spring 2000 survey of alcohol and other drug use among CSU, Chico students. This random sample survey of 1,192 students is the springboard for a three-year "social norming" campaign, called "Reality Check," that will target alcohol use among students, particularly high-risk drinking.

Some results of the survey are encouraging, such as that "60 percent of students drink two or fewer times per week." But it also shows that 93 percent of students had imbibed alcohol, higher than the national average of 85 percent. A key finding of the survey is that CSU, Chico students substantially overestimate the frequency and amount of alcohol use by fellow students. The following example shows the gap between perception and reality:

*Perception:* 84 percent of CSU, Chico students believe the average CSU, Chico student drinks three times a week or more.

*Reality:* In fact, only 40 percent drink that often.

Armed with this and other statistics from the campus survey, the Reality Check campaign will attempt to change students' perceptions. The concept is to show students that their peers are not drinking as much as they think they are, and with this knowledge, perhaps the students will feel less pressure to drink. Other universities report using the social norming model with success. Northern Illinois University experienced a 44-percent reduction in high-risk drinking over nine years, and the University of Arizona experienced a 28-percent reduction in just three years.

The campaign is primarily funded over the next three years by a gift from CSU, Chico alumna Nancy Hodges, in memory of her daughter, who started drinking in college and died at the age of 29 from cirrhosis of the liver. The campaign will blanket the campus with posters, newspaper ads, and e-mail announcements to show the key misperceptions that students have about their peers and drinking. For more information, contact CADEC at 530-898-6450, or visit their Web site at [www.csuchico.edu/cadec](http://www.csuchico.edu/cadec).



This campaign and other efforts by the campus and the community aim to create a fundamental shift in the way students drink. Freshman Shay Har-Noy, Heideman's hall mate for the short time he was at CSU, Chico, says that the death of his friend changed his perspective.

"Adrian's death made me realize more than anything that you don't really have to drink to have a good time," says Har-Noy. "Adrian died from something that was supposed to be a fun activity. It's kind of stupid the way that it happened, and we need to prevent it from happening again."

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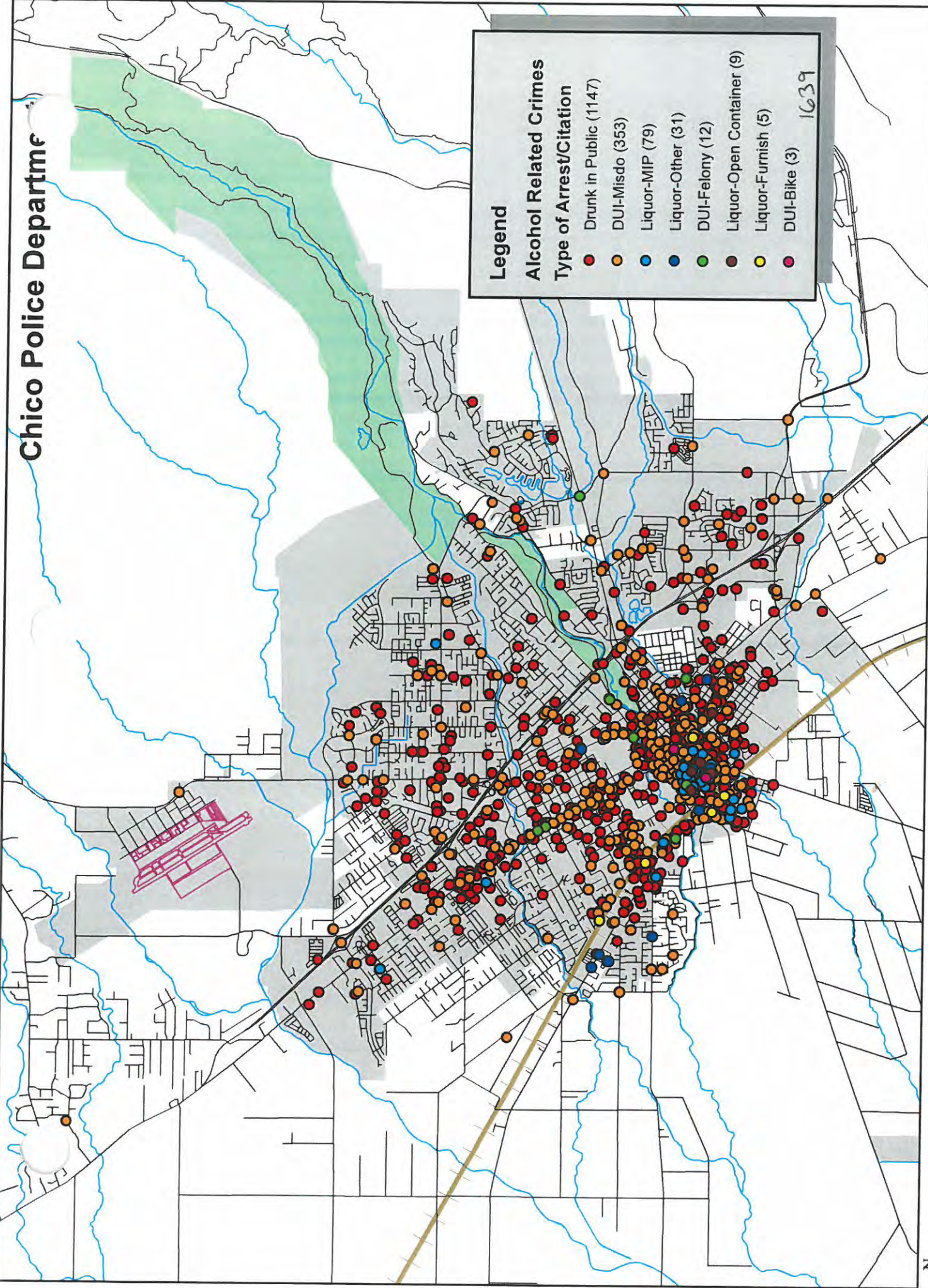
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**Legend**

**Alcohol Related Crimes**

Type of Arrest/Citation

- Drunk in Public (1147)
- DUI-Misdo (353)
- Liquor-MIP (79)
- Liquor-Other (31)
- DUI-Felony (12)
- Liquor-Open Container (9)
- Liquor-Furnish (5)
- DUI-Bike (3)

**1639**

**2012 Alcohol Related Crimes**





# The Ultimate Tragedy

Beginning in August 2012, there have been Six young people who have lost their lives to alcohol related incidents

August 15<sup>th</sup> – Daniel Early .25 BAC

August 19<sup>th</sup> –Shaun Summa .34 BAC

September 2<sup>nd</sup> – Brett Olsen .23 BAC

September 16<sup>th</sup> – Carly Callaghan .14 BAC

November 4<sup>th</sup> – Mason Sumnicht .468

April 28<sup>th</sup>, 2013 – Marissa Madrid .11 BAC

# The Effectiveness of Limiting Alcohol Outlet Density As a Means of Reducing Excessive Alcohol Consumption and Alcohol-Related Harms

Carla Alexia Campbell, MHS, Robert A. Hahn, PhD, MPH, Randy Elder, PhD, Robert Brewer, MD, MSPH, Sajal Chattopadhyay, PhD, Jonathan Fielding, MD, MPH, MBA, Timothy S. Naimi, MD, MPH, Traci Toomey, PhD, Briana Lawrence, MPH, Jennifer Cook Middleton, PhD, the Task Force on Community Preventive Services

**Abstract:** The density of alcohol outlets in communities may be regulated to reduce excessive alcohol consumption and related harms. Studies directly assessing the control of outlet density as a means of controlling excessive alcohol consumption and related harms do not exist, but assessments of related phenomena are indicative. To assess the effects of outlet density on alcohol-related harms, primary evidence was used from interrupted time-series studies of outlet density; studies of the privatization of alcohol sales, alcohol bans, and changes in license arrangements—all of which affected outlet density. Most of the studies included in this review found that greater outlet density is associated with increased alcohol consumption and related harms, including medical harms, injury, crime, and violence. Primary evidence was supported by secondary evidence from correlational studies. The regulation of alcohol outlet density may be a useful public health tool for the reduction of excessive alcohol consumption and related harms.

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## Introduction

Excessive alcohol consumption, including both binge drinking and heavy average daily alcohol consumption, is responsible for approximately 79,000 deaths per year in the U.S., making it the third-leading cause of preventable death in the nation.<sup>1</sup> Approximately 29% of adult drinkers (≥18 years) in the U.S. report binge drinking (five or more drinks on one or more occasions for men and four or more drinks for women) in the past 30 days, as do 67% of high school students who drink.<sup>2,3</sup> The direct and indirect costs of excessive alcohol consumption in 1998 were \$184.6 billion.<sup>4</sup> The reduction of excessive alcohol consumption is thus a matter of major public health and economic interest.

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The density of retail alcohol outlets is often regulated to reduce excessive alcohol consumption and related harms. Alcoholic beverage outlet density refers to the number of physical locations in which alcoholic beverages are available for purchase either per area or per population. An outlet is a setting in which alcohol may be sold legally for either on-premises or off-premises consumption. On-premises settings may include restaurants, bars, and ballparks; off-premises settings may include grocery and convenience stores as well as liquor stores. In 2005, the most recent year for which data are available, there were more than 600,000 licensed retail alcohol outlets in the U.S., or 2.7 outlets per 1000 population aged ≥18 years.<sup>5</sup> The number of outlets per capita in states with state-owned retail outlets varied from a low of 0.48 per 1000 residents in Mississippi to a high of 7.25 per 1000 in Iowa.<sup>5</sup>

Alcohol outlet density is typically controlled by states. Under state jurisdiction, outlet density may be regulated at the local level through licensing and zoning regulations, including restrictions on the use and development of land.<sup>6</sup> This regulation may be proactive as part of a community development plan, or in response to specific issues or concerns raised by community leaders. However, local control can be limited by state pre-emption laws, in which state governments explicitly or implicitly curtail the ability of local authorities to



regulate outlet expansion.<sup>7</sup> Thus, both state and local policies need to be considered when assessing factors that affect outlet density.

The WHO has published a review that identifies outlet density control as an effective method for reducing alcohol-related harms.<sup>8</sup> Similarly, in 1999, the Substance Abuse and Mental Health Services Administration's Center for Substance Abuse Prevention review concluded that there was a "medium" level of evidence supporting the use of outlet density control as a means of controlling alcohol-related harms.<sup>9</sup> In addition, several organizations have advocated the use of outlet density regulation for the reduction of alcohol consumption and alcohol-related harms. These include the European Union (in their 2000–2005 Alcohol Action Plan)<sup>10</sup> and the WHO Western Pacific Region.<sup>11</sup> The criteria used in the WHO report are not specified and may be expert opinion rather than systematic assessment of the characteristics of available studies. The SAMHSA review uses specified characteristics of included studies in drawing conclusions; however, the studies included are not up to date. In the present synthesis, 14 of the studies reviewed were published after 2000. Finally, a recent review by Livingston et al.<sup>12</sup> presents useful conceptual hypotheses and notes the importance of outlet "bunching"—which the team referred to as "clustering"—density at a more micro level.

Further, the present review assesses whether interventions limiting alcohol outlet density satisfy explicit criteria for intervention effectiveness of the *Guide to Community Preventive Services (Community Guide)*, and assesses studies available as of November 2006. In addition, unlike any of the prior documents, the present review considers evidence from assessments of policies that are not explicitly considered density-related but that have direct effects on outlet density (i.e., privatization, liquor by the drink, and bans). If effective, policies limiting alcohol outlet density might address several national health objectives related to substance abuse prevention that are specified in *Healthy People 2010*.<sup>13</sup>

### *Guide to Community Preventive Services*

The systematic review described in this report represents the work of CDC staff and collaborators on behalf of the independent, nonfederal Task Force on Community Preventive Services (Task Force). The Task Force is developing the *Community Guide* with the support of the USDHHS in collaboration with public and private partners. The book *The Guide to Community Preventive Services. What Works to Promote Health?* presents the background and the methods used in developing the *Community Guide*.<sup>14</sup>

## Methods

The methods of the *Community Guide* review process<sup>15,16</sup> were used to assess whether the control of alcohol outlet density is an effective means of reducing excessive alcohol consumption and related harms. In brief, this process involves forming a systematic review development team (the team); developing a conceptual approach to organizing, grouping, and selecting interventions; selecting interventions to evaluate; searching for and retrieving available research evidence on the effects of those interventions; assessing the quality of and abstracting information from each study that meets inclusion criteria; drawing conclusions about the body of evidence of effectiveness; and translating the evidence on intervention effectiveness into recommendations. Evidence is collected on positive or negative effects of the intervention on other health and nonhealth outcomes. When an intervention is shown to be effective, information is also included about the applicability of evidence (i.e., the extent to which available effectiveness data might generalize to diverse population segments and settings), the economic impact of the intervention, and barriers to implementation. The results of this review process are then presented to the Task Force on Community Preventive Services (Task Force), an independent scientific review board from outside the federal government, which considers the evidence on intervention effectiveness and determines whether the evidence is sufficient to warrant a recommendation.<sup>15</sup>

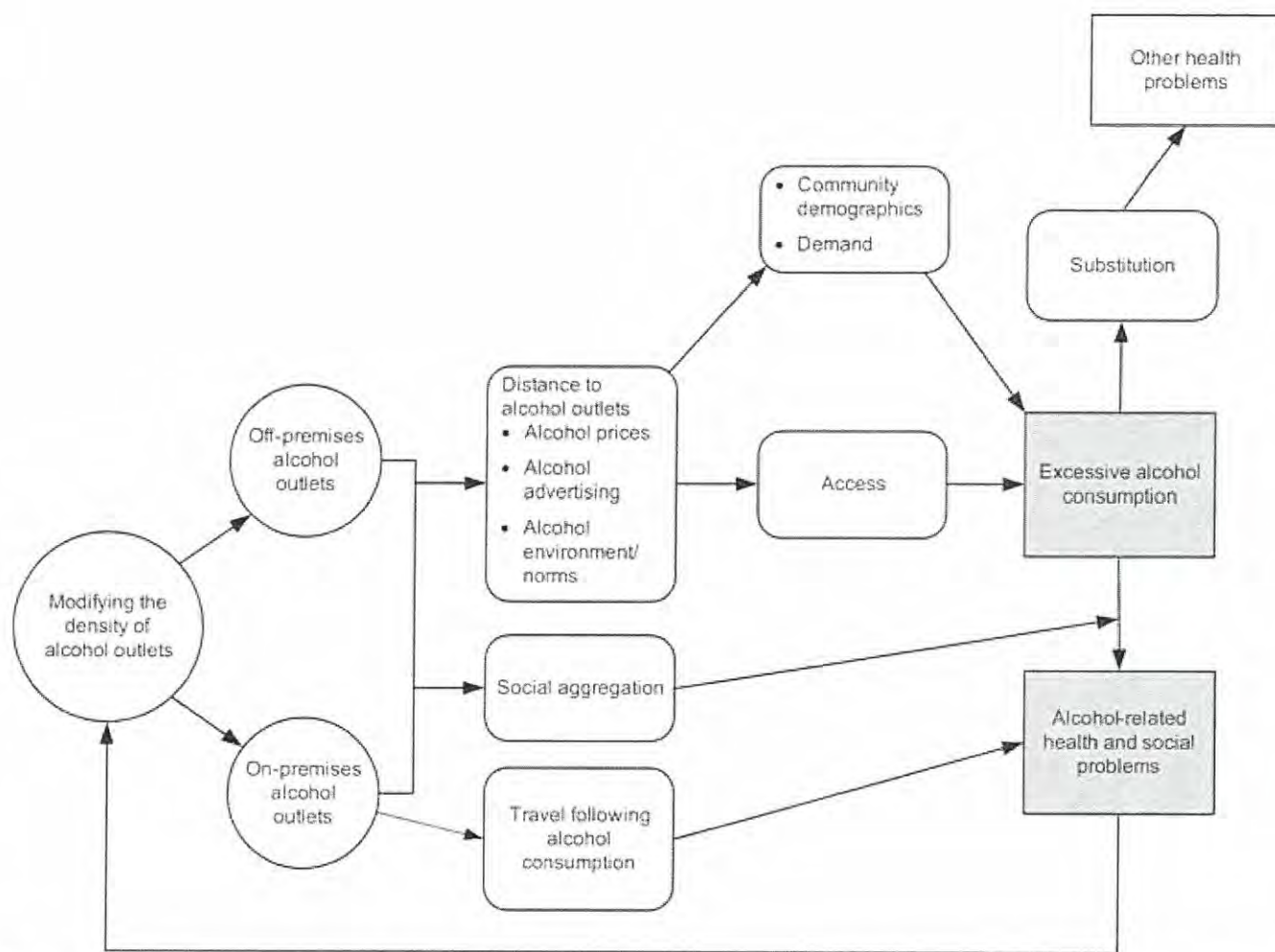
### Conceptual Approach and Analytic Framework

Outlet density is hypothesized to affect excessive alcohol consumption and related harms by changing physical access to alcohol (i.e., either increasing or decreasing proximity to alcohol retailers), thus changing the distance that drinkers need to travel to obtain alcohol or to return home after drinking. Increases in the density of on-premises outlets can also alter social aggregation, which may adversely affect those who are or who have been drinking excessively, leading to aggressive or violent behavior (Figure 1). With alcoholic beverages acquired in off-premises settings, the consumption more often occurs at the purchaser's home, and excessive consumption may be associated with domestic violence and suicidal behavior.

Decreases in off-premises or on-premises alcohol outlets, or both, are expected to decrease access to alcoholic beverages by increasing the distance to alcohol outlets, increasing alcohol prices, reducing exposure to on-premises alcohol marketing, and potentially by changing social norms around drinking, thereby decreasing excessive alcohol consumption and related harms. Decreases in outlet density are expected to decrease social aggregation in and around on- and off-premises alcohol outlets which, in turn, may decrease aggressive behavior potentially exacerbated by alcohol consumption.<sup>17</sup> Finally, decreased density increases distances traveled to and from alcohol outlets, thus increasing the potential for alcohol-related crashes. However, this potential harm could be mitigated by decreased alcohol consumption and hence decreased alcohol-impaired driving.<sup>18,19</sup> Thus, the expected effect of outlet density on motor-vehicle crashes may be mixed.<sup>20</sup>

The effect that density has on consumption and harms may be further influenced by at least seven characteristics





**Figure 1.** Analytic framework showing the hypothesized effects of changes in outlet density on excessive alcohol consumption and related harms

of retail alcohol outlets and the communities in which they are located: (1) outlet size (i.e., the physical size of the retail premises or the volume of its sales); (2) clustering (i.e., the level of aggregation of outlets within a given area); (3) location (i.e., the proximity of alcohol retail sites to places of concern, such as schools or places of worship); (4) neighboring environmental factors (e.g., demographics of the community and the degree of isolation of a community); (5) the size of the community (which may affect access to other retail sites); (6) the type and number of alcohol outlets (e.g., bar, restaurant, liquor store, grocery store) in a community may also influence whether and how outlet density affects drinking behavior<sup>21</sup>; and (7) alcohol outlets may be associated with illegal activities, such as drug abuse, which may also contribute to public health harms. As with other policies and regulations, the effects of regulations affecting outlet density may depend on the degree to which the policies are implemented and enforced.

There are several challenges to directly evaluating the effectiveness of local policies in changing outlet density on alcohol consumption and related harms. Direct studies of the effects of policies changing density on alcohol-related public health outcomes have not been conducted. Policy changes may occur in small communities in which documentation and

data may be unavailable and where the number of retail alcohol outlets, alcohol-related outcomes, or both may be small; thereby it may be difficult to assess the relationship between outlet density and excessive alcohol consumption and related harms. Further, the effects of policy decisions on outlet density may be gradual. Other changes in alcohol control policies (e.g., enhanced enforcement of the minimum legal drinking age) may occur simultaneously, making it difficult to isolate the effect of changes in outlet density on drinking behavior.

The team used both primary and secondary scientific evidence to help address these challenges and to comprehensively assess the impact of changes in alcohol outlet density on excessive alcohol consumption. Primary evidence included studies comparing alcohol-related outcomes before and after a density-related change. In this category were (1) studies assessing the impact of privatizing alcohol sales—commonly associated with increases in density; (2) studies assessing the impact of bans on alcohol sales—associated with decreases in density; and (3) studies of other alcohol licensing policies that directly affect outlet density (e.g., the sale of liquor by the drink). Time-series studies (i.e., studies in which the association between changes in outlet density and alcohol-related outcomes is assessed over time) were also used to provide primary evidence



of intervention effectiveness, even when the cause of the observed change in outlet density was unknown. The team did not include studies of strikes in the production or distribution of alcoholic beverages or studies of interventions among college populations. Secondary evidence included cross-sectional studies, which do not allow the inference of causality.

### Inclusion and Exclusion Criteria

To be included in this review, studies had to meet the following criteria: First, they had to evaluate changes in outlet density or policy changes that clearly resulted in changes in outlet density. Studies of policy changes (e.g., privatization or the legalization of liquor by the drink) had to provide evidence that there was a corresponding change in alcohol outlet density. Second, studies had to be conducted in high-income nations,<sup>22</sup> be primary research (rather than a review of other research), and be published in English. Third, studies had to report outcome measures indicative of excessive alcohol consumption or related harms. Direct measures that had the strongest association with excessive alcohol consumption included binge drinking, heavy drinking, liver cirrhosis mortality, alcohol-related medical admissions, and alcohol-related motor-vehicle crashes, particularly single-vehicle nighttime crashes, which are widely used to indicate motor-vehicle crashes due to drinking and driving.<sup>23</sup> Less direct measures included per capita ethanol consumption, which is a well-recognized proxy for the prevalence of heavy drinkers in a population<sup>8,24</sup>; unintentional injuries; suicide; and crime, such as homicide and aggravated assault. In most studies included in this review, consumption is measured by sales data; the team referred to this measure as “consumption” and note the exceptional study in which self-reported consumption is directly assessed. Fourth, studies had to be published in a peer-reviewed journal or in a government report. Reports not published or published by private organizations were not included.

### Search for Evidence

The following databases were searched from inception up to November 2006 to identify studies assessing the impact of changes in alcohol outlet density and other review topics: EconLit, PsycINFO, Sociological Abstracts, MEDLINE, EMBASE, and EtOH (no longer available after 2003). The search yielded 6442 articles, books, and conference abstracts, of which 5645 were unique. After screening titles and abstracts, 251 papers and articles and 17 books were retrieved specifically related to outlet density; five articles could not be retrieved. After assessing quality of execution and design suitability (see below), 88 articles or books were included in the review. The actual number of studies that qualified for the

<sup>22</sup>World Bank High-Income Economies (as of May 5, 2009): Andorra, Antigua and Barbuda, Aruba, Australia, Austria, the Bahamas, Bahrain, Barbados, Belgium, Bermuda, Brunei Darussalam, Canada, Cayman Islands, Channel Islands, Cyprus, Czech Republic, Denmark, Equatorial Guinea, Estonia, Faeroe Islands, Finland, France, French Polynesia, Germany, Greece, Greenland, Guam, Hong Kong (China), Hungary, Iceland, Ireland, Isle of Man, Israel, Italy, Japan, Republic of Korea, Kuwait, Liechtenstein, Luxembourg, Macao (China), Malta, Monaco, Netherlands, Netherlands Antilles, New Caledonia, New Zealand, Northern Mariana Islands, Norway, Oman, Portugal, Puerto Rico, Qatar, San Marino, Saudi Arabia, Singapore, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Trinidad and Tobago, United Arab Emirates, United Kingdom, U.S., Virgin Islands (U.S.)

review was less than this, however, because some studies were described in more than one report or publication.

### Assessing the Quality and Summarizing the Body of Evidence on Effectiveness

Each study that met the inclusion criteria was read by two reviewers who used standardized review criteria (available at [www.thecommunityguide.org/library/ajpm355\\_d.pdf](http://www.thecommunityguide.org/library/ajpm355_d.pdf)) to assess the suitability of the study design and threats to validity. Uncertainties and disagreements between the reviewers were reconciled by the team. The classification of study design was based on *Community Guide* standards, and thus may differ from the classification reported in the original studies. Studies with greatest design suitability were those in which data on exposed and control populations were collected prospectively. Studies with moderate design suitability were those in which data were collected retrospectively or in which there were multiple pre- or post measurements but no concurrent comparison population. Studies with least-suitable designs were cross-sectional studies or those in which there was no comparison population and only a single pre- and post-intervention measurement. On the basis of the number of threats to validity (maximum: nine; e.g., poor measurement of exposure or outcome, lack of control of potential confounders, or high attrition) studies were characterized as having good (one or fewer threats to validity); fair (two to four threats); or limited (five or more threats) quality of execution. Studies with good or fair quality of execution, and any level of design suitability (greatest, moderate, or least), qualified for the body of evidence synthesized in the review.

The team summarized the results of cross-sectional studies based on whether drinking occurred on- or off-premises. However, some studies did not stratify their findings by outlet type and so were presented in a combined category. For each outcome and setting, the team summarized study findings by comparing the relative number of positive and negative findings. Finally, elasticities—summary effect measures showing the percentage change in an outcome per 1% change in an exposure (e.g., outlet density)—were calculated if the study provided sufficient information.

### Other Harms and Benefits, Applicability, Barriers, and Economics

Harmful and beneficial outcomes not directly related to public health (e.g., vandalism or public nuisance) were noted if they were described in the studies reviewed or if the team regarded them as plausible. In addition, if an intervention was found to be effective, the team assessed barriers to implementation; the applicability of the intervention to other settings, populations, or circumstances; and the economic costs and benefits of the intervention.

## Results

### Intervention Effectiveness—Primary Evidence

**Time-series studies of alcohol outlet density change.** The team found ten studies<sup>20,25–33</sup> that directly evaluated the effect of changes in outlet density over time without identifying the causes for density changes. Of these, eight were “cross-sectional time-series” (i.e., panel)



studies of greatest design suitability<sup>20,25–29,31,33</sup> and two were single-group time-series studies of moderate design suitability.<sup>30,32</sup> Eight of the studies were of good execution<sup>25–31,33</sup> and two were of fair execution.<sup>20,32</sup> Few took spatial lag (i.e., the likelihood that neighboring geographic units are not statistically independent) into account. Five studies assessed associations between changes in outlet density and population-level alcohol consumption,<sup>25,26,28,31,33</sup> and the remainder assessed specific alcohol-related harms.<sup>20,27,29,30,32</sup>

**Consumption.** All five studies that assessed the association between outlet density and population-level alcohol consumption found that they were positively associated; increased density was associated with increased consumption, and vice versa. Three studies examined the relationship between outlet density and the consumption of spirits in the U.S. The first study estimated that, from 1955 to 1980, for each additional outlet license per 1000 population, there was an increase of 0.027 gallons in per capita consumption of spirits ethanol ( $p < 0.01$ ).<sup>28</sup> The second study reported an elasticity of 0.14 ( $p < 0.01$ ) for outlet density and spirits for the period 1970–1975.<sup>31</sup> The third study examined the association of outlet density and the sale of spirits and wine in 38 states over a period of 18 years; the effects of consumption on density were separated out by use of two-stage least squares regression. The elasticity for spirits and wine was found to be 0.033 (NS) and 0.015 (NS), respectively.<sup>26</sup>

A study assessing trends from 1952 to 1992 in the United Kingdom<sup>25</sup> reported an elasticity of 2.43 ( $p < 0.05$ ) for off-premises density and beer consumption but no significant association for other beverages (except hard cider). Finally, a study<sup>33</sup> examining data from 1968 to 1986 in Canada reported a significant association between reductions in off-premises density and reductions in alcohol consumption. This study also found an association between changes in outlet density and cirrhosis mortality, which was mediated by changes in alcohol consumption. When the alcohol consumption variable was added to the analytic model, the coefficient for cirrhosis mortality was no longer significant.

**Motor-vehicle crashes and other injury outcomes.** Two studies by one author,<sup>20,30</sup> using the same methods and database in California, found mixed results when evaluating the association between on- and off-premises outlet density and fatal and nonfatal motor-vehicle crashes in small California cities (i.e., with total populations  $< 50,000$ ) during two different time periods and among different populations. The first study assessed the association between outlet density and crashes from 1981 through 1989 across all age groups. The author found a negative association between off-premises outlet density and both fatal and nonfatal crashes, and a

positive association between on-premises outlets and both fatal and nonfatal crashes.<sup>20</sup> The second study assessed the association between outlet density and fatal and nonfatal crashes from 1981 through 1998 among people aged  $\geq 60$  years. This study reported a negative association for nonfatal crashes (elasticity:  $-0.69$ ,  $p < 0.05$ ) and a positive association for fatal crashes (elasticity: 1.18,  $p < 0.05$ ).

Three studies<sup>27,29,32</sup> assessed the relationship between outlet density and suicide or interpersonal violence. A study of young people aged 10–24 years in the U.S. from 1976 through 1999 found positive associations between outlet density (on- and off-premises outlets combined) and suicides for most gender and age strata assessed, but only the findings for boys/men aged 15–19 years were significant (elasticities ranged from  $-0.03$  to 0.10 for girls/women and from 0.05 to 0.12 for boys/men).<sup>29</sup>

The effect of changes in the density of on-premises outlets and violent crime was investigated in Norway from 1960 through 1995.<sup>32</sup> The researcher used autoregressive integrated moving average (ARIMA) modeling and found that each alcohol outlet was associated with 0.9 violent crimes investigated (by the police) per year. A supplementary analysis found that this association persisted even after controlling for amount of alcohol consumption, suggesting that the effect of increased density was independent of the effect of increased alcohol consumption ( $p < 0.03$ ). This suggests that the social aggregation of drinkers in and around alcohol outlets directly affects assaults, as indicated in Figure 1 (under “social problems”).

Finally, a study of 581 California neighborhoods identified by ZIP code from 1996 through 2002<sup>27</sup> indicated that an increase in on- and off-premises outlet density was associated with an increase in hospitalizations for assault, but that this association varied for on-premises and off-premises locations, and among various types of on-premises locations (e.g., bar or restaurant) as well. The researchers used random-effects regression models, taking spatial lag into account, thus allowing for the lack of independence of neighborhoods in the association of outlets and alcohol-related harms. Within a given ZIP code, the elasticity for off-premises outlets and alcohol-related assaults on residents was 0.167 ( $p < 0.001$ ); for restaurants, it was  $-0.074$  ( $p < 0.01$ ); and for bars, 0.064 ( $p < 0.001$ ). The elasticity for bars and assaults involving residents of neighboring ZIP codes was also significant (0.142,  $p < 0.001$ ); however, the elasticities for off-premises alcohol outlets and for restaurants relative to assaults involving residents of neighboring ZIP codes were not significant. Based on these results, the authors estimated that, on average, eliminating one bar per ZIP code in California would reduce the number of assaults requiring overnight hospitalization by 290 per year in the state.



## Summary

Seven of nine time-series studies found positive associations between changes in outlet density and alcohol consumption and related harms, particularly interpersonal violence. However, two studies assessing the relationship between alcohol outlet density and motor-vehicle crashes in small California cities during two different time periods<sup>20,30</sup> had inconsistent findings for which no clear explanation was apparent. The studies reviewed also suggested that the association between outlet density and interpersonal violence may at least partially be due to social aggregation in and around alcohol outlets, and that the density of outlets in a given locale can also influence the probability of assaults involving residents of neighboring communities.

## Privatization Studies

Alcohol privatization involves the elimination of government monopolies for off-premises alcohol sales to allow sales by privately owned enterprises. In the U.S. and Canada, privatization occurs at the state or provincial level; in many European nations, privatization may occur at a national level, currently guided by policies of the European Union. In the U.S., one alcoholic beverage may be privatized at a time; for example, wine might be privatized (i.e., subsequently for sale in commercial settings) while spirits may not be privatized, or may be privatized at a different time. Typically, privatization results not only in a substantial increase in the number of outlets where alcohol can be purchased but also in changes in alcohol price, days and hours of sale, and marketing.<sup>21,34</sup> This combination of events limits the ability to attribute subsequent changes in alcohol consumption and related harms to changes in outlet density alone. Nonetheless, because of the impact privatization generally has on outlet density, the team concluded that privatization studies were relevant for assessing the impact of changes in outlet density on excessive alcohol consumption and related harms.

The effects of privatization on the privatized beverages are assessed first, followed by an assessment of the effects of privatization on beverages other than those for which sales were privatized. If privatization affects consumption and related harms by means of increased outlet density, the consumption (and related harms) of the privatized beverage should increase, while consumption of other beverages might decline if usual drinkers of these other beverages now switch to the newly available privatized beverage. Comparing the association between alcohol consumption and alcohol-related harms associated with privatized and nonprivatized alcoholic beverages, respectively, provides a basis for assessing the impact of privatization on alcohol consumption and related harms while controlling for other factors that might be occurring simultaneously.

Following an analysis of the effects of privatization, this section then reviews the effects of remonopolization, that is, reversing privatization by reinstatement of government monopoly control over the retail sales of alcohol beverages. This policy change would be expected to have the opposite effects of privatization and result in lower alcohol outlet density.

Eleven events of privatization and one of remonopolization, analyzed in 17 studies and reported in 12 papers,<sup>35-45</sup> met the review inclusion criteria. The units of analysis were eight U.S. states (AL, ID, IA, ME, MT, NH, WA, WV); two Canadian provinces (Quebec and Alberta); and (in the sole study of remonopolization) Sweden. Several studies assessed overlapping privatization events. For example, two research teams assessed the privatization of wine and then spirits in Iowa,<sup>34,38,39,45</sup> and two researchers assessed early phases of the privatization of wine in Quebec, while one of these researchers also assessed the later phases, with each phase counted as a separate privatization event.<sup>36,46</sup> In addition, several papers assessed the effects of privatization in more than one state and provided separate effect estimates for the privatization in each state; for purposes of this review, each state-level assessment was treated as a separate study. Finally, a single state or province could privatize different beverages at different times, resulting in separate privatization events. Altogether, the events assessed in these studies occurred between 1978 and 1993. In all areas assessed, the number of outlets increased dramatically following privatization. The studies used ARIMA time-series study design; all except two studies<sup>36,46</sup> reported results for comparison populations.

All studies used alcohol sales data as a measure of population-level alcohol consumption. One study also assessed fatal motor-vehicle crashes (MVCs),<sup>42</sup> another study<sup>34</sup> also evaluated single-vehicle nighttime crashes and liver cirrhosis. The single study of remonopolization<sup>40</sup> assessed hospitalizations for alcoholism, alcohol intoxication, and alcohol psychosis combined, alcohol intoxication alone, assaults, suicides, falls, and MVCs.<sup>40</sup> Fourteen studies (in seven papers)<sup>35,38,39,42-44,46</sup> were of greatest design suitability; three studies (in two papers)<sup>37,40</sup> were of moderate design suitability. All studies were of fair execution.

## Effects of Privatization on Privatized Beverages

Seventeen studies<sup>35-44</sup> assessed the effects of privatization on the sale of at least one of four beverage types (wine, spirits, full-strength beer, and medium-strength beer) in ten settings. The median relative increase in alcohol sales subsequent to privatization was 42.0%, with an interquartile interval of 0.7% to 136.7%. That is, among the studies reviewed, compared with consumption prior to privatization, the median effect was



an increase of 42.0% in consumption of the privatized alcoholic beverage. Studies of three events of privatization, two in Iowa and one in Alberta, yielded inconsistent findings, which merit further description.

In Iowa, wine was privatized in 1985, and spirits in 1987. Wagenaar and Holder<sup>35,43</sup> reported that wine consumption increased 93.0% (95% CI=69.3, 120.2) from baseline to 44 months after privatization of retail wine sales. Following the subsequent privatization of retail spirits sales in Iowa 2 years later, these researchers<sup>35,43</sup> reported a 9.5% (95% CI=3.5, 15.9) increase in spirits consumption; they also found no evidence that privatization affected cross-border alcohol purchasing.<sup>35,43</sup> In contrast, Mulford and Fitzgerald<sup>39</sup> found that wine privatization in Iowa was associated with a nonsignificant increase of only 0.5% (95% CI= -13.2, 16.4) in wine sales, and that spirits privatization was associated with a nonsignificant increase of 0.7% (95% CI= -4.3, 6.0) in spirits sales. Differences between the findings of these research groups may be due to differences in time periods assessed, modeling variables and procedures, beverage types included in the assessment (e.g., Mulford and Fitzgerald exclude wine coolers that were not affected by the policy change and Wagenaar and Holder do not), use of a control population, and outcome measurement. Fitzgerald and Mulford<sup>34</sup> also report small unadjusted rate decreases in single-vehicle nighttime crashes (-1.6%) and alcoholic cirrhosis mortality (-5.5%) associated with the privatization of wine and spirits in Iowa.

A study in Alberta, Canada, estimated that gradual privatization over a period of 20 years resulted in an increase in spirits consumption of 12.7% (95% CI=2.2, 24.4) and no change in either wine or beer consumption.<sup>42</sup> Although the process of privatization occurred over an extended period, the major events of privatization occurred essentially at the same time (in 1992); thus, considered in aggregate, privatizing spirits in Alberta increased total alcohol sales by 5.1% (95% CI= -2.8, 13.7) over this 20-year period. Despite the increased alcohol sales, the authors reported that there was an estimated 11.3% (95% CI= -33.8, 19.0) decrease in traffic fatalities. However, neither the increase in total alcohol sales nor the decrease in traffic fatalities was significant.

### Effects of Privatization on Beverages Not Subject to Privatization

Five publications<sup>37,38,43,44,47</sup> assessed the effects of privatization in eight settings on the concomitant sales of alcoholic beverages that were not privatized during the same period. Overall, these studies reported that there was a minimal decline: a median of 2.1% (interquartile interval [IQI]: -4.8% to 2.7%) in the sales on nonprivatized beverages.

### Effects of Remonopolization on Alcohol-Related Outcomes

A single before-and-after study<sup>40</sup> evaluated the effects of remonopolization of sales of medium-strength beer in Sweden. This study compared the association between the number of retail alcohol outlets and the occurrence of six different alcohol-related outcomes during a 51-month period following the remonopolization of medium-strength beer, with that for a similar period prior to remonopolization. Among young people aged 10–19 years, alcoholism, alcohol intoxication, and alcohol psychosis (which were considered in combination) decreased by 20% ( $p<0.05$ ) following remonopolization. These outcomes also decreased by >5% among people aged  $\geq 40$  years, although the change was not significant ( $p>0.05$ ). Hospitalizations for acute alcohol intoxication also decreased between 3.5% and 14.7% ( $p>0.05$ ); suicides decreased by 1.7% to 11.8% ( $p>0.05$ ); and falls decreased by 3.6% to 4.9% ( $p>0.05$ ) following remonopolization, although none of these changes were significant either. Motor-vehicle crashes (MVCs) significantly decreased by 14% ( $p<0.05$ ) in all age categories except one (those aged 20–39 years). Other nonsignificant changes include assaults, which decreased by 1.4% among those aged 20–39 years, but increased by 6.9% to 14.8% ( $p>0.05$ ) in the other age groups: 10–19, 40–59,  $\geq 60$  years. The authors did not provide any explanation for this seemingly inconsistent finding.

### Summary

These studies indicate that privatization increases the sales of privatized beverages but has little effect on the sales of nonprivatized alcoholic beverages. The one study that evaluated the reintroduction of government monopoly control of sale of an alcoholic beverage (medium-strength beer) found that remonopolization led to a significant decrease in motor-vehicle crashes for most age groups and a significant decrease among youth for several, but not all, alcohol-related harms.

### Studies of Alcohol Bans

The team found seven studies<sup>18,41,48–52</sup> that examined the effects of bans on local on- or off-premises alcohol sales or consumption (i.e., “dry” towns, counties, or reservations). Five studies examined the effects of bans in American Indian and Native settings in Alaska,<sup>49,50,53</sup> northern Canada,<sup>52</sup> and the southwestern U.S.<sup>51</sup> Two studies assessed the effects of bans in nontribal areas of the U.S. and Canada.<sup>18,41</sup> Two studies were of greatest design suitability<sup>18,41</sup>; two of moderate design suitability<sup>50,51</sup>; and three of least suitable design.<sup>49,52,53</sup> All were of fair execution. The studies examined events that occurred from 1970

through 1996. Two additional studies modeled the association of multiple policies, including local policies of dry counties, with spirits consumption<sup>28</sup> and with juvenile suicide.<sup>29</sup> Both of these studies were of greatest design suitability and good execution, and the team considered them comparable to studies of bans and as primary evidence.

An additional cross-sectional study of bans<sup>54</sup> was not used as primary evidence of effectiveness, but provided insights into the effect that alcohol availability in areas surrounding dry communities (e.g., outside Indian reservations) has on the occurrence of alcohol-related harms among residents of the dry communities.

### Effects of Alcohol Bans in Isolated Communities

All of the studies that evaluated the effect of bans in isolated northern communities found substantial reductions in alcohol-related harms with the exception of suicide.<sup>18,41,49,51-59</sup> In the communities that instituted bans, rates of harm indicated by alcohol-related medical visits were reduced by 9.0% for injury deaths to 82% for alcohol-related medical visits (CIs not calculable). One of these studies<sup>50</sup> found that the effects were reversed when the ban was lifted, and found similar benefits when the ban was then reimposed (Figure 2).<sup>50</sup> Two of these studies suggest that bans on alcohol sales in isolated communities led residents to decrease their use of other intoxicants. In Barrow, Alaska, medical visits for use of isopropyl alcohol declined during ban periods.<sup>50</sup>

An additional study qualitatively evaluated a Canadian Inuit community<sup>52</sup> that overwhelmingly voted to

ban alcohol in 1978. Although comparative data are not available from this study (and the study thus does not meet review inclusion criteria), it is notable that during the 3 years following the implementation of this prohibition there were only five arrests for the illegal possession of alcohol and, of these, four were associated with a single incident. The reported reduction in alcohol consumption in general and among youth in particular was linked with several societal benefits, including improved mental and physical health among community members, and a reduction in conflicts within the community. The ban on alcohol sales was associated with a reduction in the use of other substances of abuse (e.g., inhalants) by youth.

### Effects of Alcohol Bans in Less-Isolated Communities

Studies assessing the impact of bans (particularly bans on on-premises sales) in less-isolated communities have produced mixed results. Some studies have found that bans are associated with increases in alcohol-related harms, including motor-vehicle crashes<sup>18,16</sup> and alcohol-related arrests.<sup>51</sup> However, two studies<sup>28,29</sup> found that states that had a larger proportion of their population living in dry counties had less alcohol consumption and related harms than states that had a smaller proportion of their population living in dry counties. One study<sup>28</sup> found that living in dry counties was associated with lower rates of spirits consumption ( $p < 0.01$ ). The other study found small, nonsignificant associations with male suicide (elasticities of  $-0.002$  to  $-0.066$ ) and female suicide (elasticities of  $-0.021$  to  $-0.038$ ).<sup>29</sup>

A cross-sectional study of injury deaths in New Mexico<sup>54</sup> highlights the potential harms associated with alcohol sales bans in areas (in this case reservations, 80% of which are dry) that are adjacent to other areas where alcohol is readily available. This study found that in these settings, although the relative risk (RR) of total injury deaths was greater for American Indians than for whites (RR=3.1; 95% CI=2.6, 3.6), the relative risk was greatest for deaths involving pedestrians struck by vehicles (RR=7.5; 95% CI=5.3, 10.6) and for hypothermia (i.e., freezing to death; RR=30.5; 95% CI=17.7, 48.7). Furthermore, American Indians in New Mexico who died of these causes were likely to

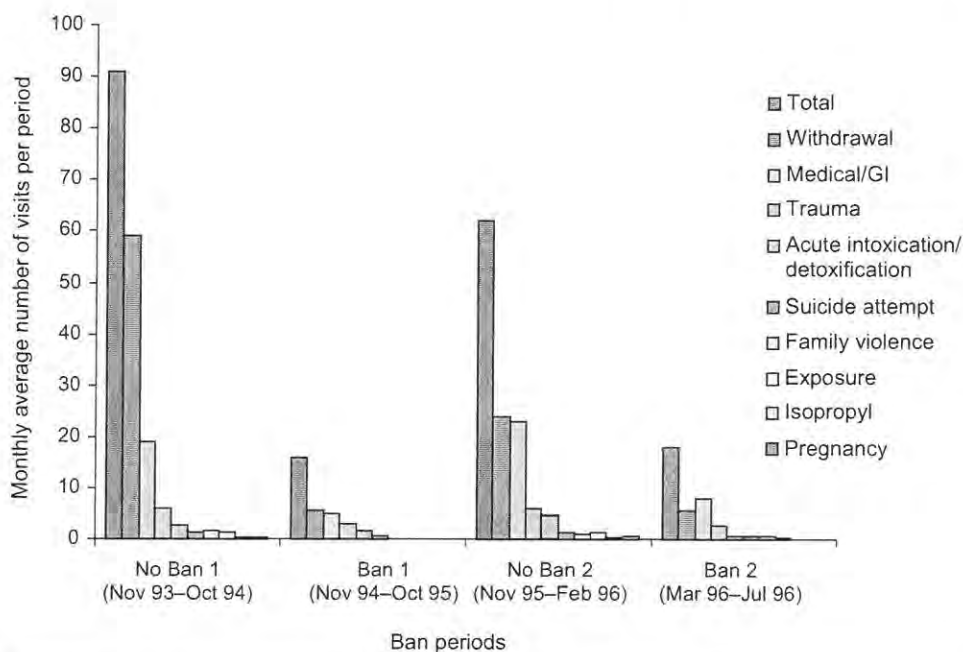


Figure 2. Alcohol-related outpatient visits associated with changes in alcohol ban policy, Barrow, Alaska, 1993-1996<sup>50</sup>



have elevated blood alcohol levels (an average of 0.24 g/dL and 0.18 g/dL for pedestrian deaths and hypothermia, respectively). A disproportionate number (67%) of these deaths occurred in counties bordering reservations, despite the fact that most American Indians live on reservations. Although the design of this study does not allow causal inference regarding the effect of bans, these findings suggest that travel between dry reservations and adjacent areas where alcohol is readily available may increase the risk of death from these external causes among those traveling off-reservation to purchase alcohol.

### Summary

The effectiveness of bans in reducing alcohol-related harms appears to be highly dependent on the availability of alcohol in the surrounding area. In isolated communities, bans can substantially reduce alcohol-related harms. However, where alcohol is available in areas nearby those with bans, travel between these areas may lead to serious harms.

### Studies of Licensing-Policy Changes Affecting Outlet Density

The team identified four studies of national or local licensing-policy changes that resulted in increased outlet density. The studies were conducted in Iceland,<sup>60</sup> Finland,<sup>47</sup> New Zealand,<sup>61</sup> and North Carolina.<sup>62</sup> The policy changes assessed occurred between 1969 and 1990. The North Carolina study was of greatest design suitability and good execution. The other three studies were of moderate design suitability and good execution.<sup>47,60,61</sup> These studies examined various indices of alcohol consumption; the North Carolina study also assessed effects on alcohol-related motor-vehicle crashes. Another study assessed the effect of a change in national policy controlling the sale of table wine in New Zealand.

### Effects on Excessive Alcohol Consumption and Related Harms

The only U.S. study that met criteria for this category of interventions evaluated the decision by several North Carolina counties to allow on-premises sale of spirits (i.e., "liquor by the drink" [LBD]), replacing the previous option of "brown-bagging,"<sup>62</sup> in which patrons of an establishment bring their own alcoholic beverage (in a bag) and the establishment supplies other items (e.g., a drink glass, ice, water). Of the 100 counties in North Carolina, three approved liquor by the drink in November 1978 and eight approved it in January 1979. The policy change was followed by the opening of many bars and lounges adjacent to restaurants. Interrupted time-series models indicated that, relative to counties that did not change their policies, sales of spirits increased in LBD counties by 8.2% ( $p < 0.05$ ) among

the first group of counties to adopt the new policy, and by 4.3% ( $p < 0.05$ ) among the second group. Nighttime single-vehicle crashes among men of legal drinking age also increased in both early- and late-adopting counties by 18.5% ( $p < 0.01$ ) and 15.7% ( $p < 0.01$ ), respectively. However, there were no significant changes in rates of nighttime single-vehicle crashes among boys/men aged  $< 21$  years, who were not permitted to drink spirits and were thus not (legally) affected by the policy change.

In Finland, the enactment in 1969 of a policy allowing the sale of medium-strength beer resulted in a 22% increase in the number of monopoly alcohol outlets and a 46% increase in restaurant liquor licenses, and permitted 17,400 grocery stores to sell medium-strength beer. During the year following these changes, overall alcohol sales in Finland increased by 46%. Of the increase, 86% was attributed by the researchers to the increased availability of beer. Overall alcohol consumption increased by 56%, with the greatest volume increases among those drinking more than a half liter of pure alcohol per year (1/2 liter of pure alcohol is equivalent to 1/3 gallon of 80-proof liquor). However, alcohol consumption increased significantly among all adults at all levels of alcohol consumption in Finland subsequent to this policy change, regardless of their baseline pattern of consumption, including those who had previously reported that they had not consumed alcohol during the past year.

In Iceland,<sup>60</sup> a policy change in 1989 resulted in an expansion in off-premises monopoly outlets and commercial on-premises outlets in Reykjavik and in rural areas. Over the subsequent 4-year period, consumption increased by 43% among men who drank more than 350 centiliters of alcohol per year at baseline, but changed minimally among women and men who drank at lower levels.

In New Zealand,<sup>61</sup> a policy change in 1989 allowed the sale of table wine in grocery stores, resulting in an increase of approximately 25% in the number of wine outlets in the country over a 2-year period. This resulted in a 17% (95% CI=9.8%, 24.9%) increase in wine sales during this time, but in no change in the sales of other alcoholic beverages. This indicates that there was an overall increase in alcohol consumption in New Zealand subsequent to this policy change, and that wine, the privatized beverage, was not being substituted for other nonprivatized alcoholic beverages.

### Summary

These studies consistently indicated that more permissive licensing procedures increased the number of on- and off-premises alcohol outlets, which in turn led to increases in alcohol consumption. Two of these studies specifically reported increases in alcohol consumption among heavy drinkers, and one study reported an increase in drinking among survey subjects who reported not drinking during a specified period at the



baseline assessment. The single study that evaluated alcohol-related harms (alcohol-related motor-vehicle crashes) found that they increased substantially after allowing the sale of liquor by the drink.

### Intervention Effectiveness—Secondary Evidence

Although the primary evidence just reviewed is heterogeneous in topic and design and does not allow summary tabular presentation, the secondary evidence presented below is based on consistent statistical procedures and readily allows a summary table.

### Cross-Sectional Studies

**Findings from studies of on- and off-premises outlets combined.** The 28 cross-sectional studies<sup>19,55–57,63–86</sup> that assessed the association of outlet density (on-premise and off-premise, not distinguished) assessed 47 alcohol-related outcomes. Of these outcomes, 41 (87.2%) found a positive association, that is, as density increased, so did consumption and alcohol-related harms, and vice versa (Table 1, A). Positive associations were found for consumption-related outcomes (e.g., per capita alcohol consumption); violence and injury outcomes; and several medical conditions (e.g., liver disease). The mean elasticities ranged from 0.045 for crime to 0.421 for motor-vehicle crashes.

**Findings from studies of on-premises outlets.** The 23 studies<sup>23,58,78,79,87–105</sup> that assessed the association of outlet density and alcohol-related outcomes in on-premises outlets reported on 25 outcomes. Of these, 21 (84.0%) indicated a positive association (Table 1, B). Positive associations were also found for consumption-related outcomes, several forms of violence and injury outcomes related to alcohol consumption, and one medical condition. Mean study elasticities could be estimated for most outcome types, and values ranged from 0.021 for child abuse to 0.250 for population consumption.

**Findings from studies of off-premises outlets.** The 23 studies<sup>58,79,89–92,94–99,101–111</sup> that assessed the association of outlet density and alcohol-related outcomes in off-premises outlets reported on 24 outcomes. Of these, 18 (75.0%) also indicated a positive association (Table 1, C). Positive associations were found for consumption-related outcomes, several forms of violence and injury outcomes related to alcohol consumption, and one medical condition. Mean study elasticities could be estimated for most outcome types and values ranged from -0.15 for injury to 2.46 for population consumption. Mean elasticity was also high (0.483) for violent crime.

### Summary

Cross-sectional studies generally show consistent positive associations between alcohol outlet density and

**Table 1.** Cross-sectional studies, outcomes by setting type

Outcomes	# of studies	% positive	M elasticity
<b>A. ON- AND OFF-PREMISES AGGREGATED</b>			
<b>Consumption</b>			
Population consumption	7	85.7	0.27
Binge drinking	5	80.0	
Underage drinking	2	100.0	
<b>Violence and injury</b>			
Violent crime	15	93.3	0.32
Injury	3	100.0	0.23
Motor-vehicle crashes	6	50.0	0.42
Drunk driving	1	100.0	
Crime	2	100.0	0.04
<b>Medical conditions</b>			
Alcohol medical visits	1	100.0	
Alcoholism	1	100.0	
Liver disease	4	100.0	
<b>Total all premises</b>	<b>47</b>	<b>87.2</b>	
<b>B. ON-PREMISES</b>			
<b>Consumption</b>			
Population consumption	3	33.3	0.25
Binge drinking	1	100.0	
<b>Violence and injury</b>			
Violent crime	4	100.0	0.12
Injury	3	100.0	0.14
Motor-vehicle crashes	6	66.7	0.05
Drunk driving	2	100.0	
Crime	1	100.0	
Child abuse	2	100.0	0.02
<b>Medical conditions</b>			
Liver disease	3	100.0	0.06
<b>Total on-premises</b>	<b>25</b>	<b>84.0</b>	
<b>C. OFF-PREMISES</b>			
<b>Consumption</b>			
Population consumption	2	100.0	2.46
Binge drinking	1	100.0	
<b>Violence and injury</b>			
Violent crime	6	100.0	0.48
Injury	3	66.7	-0.15
Motor-vehicle crashes	5	80.0	0.10
Drunk driving	2	50.0	
Crime	1	100.0	
Child abuse	2	100.0	0.01
<b>Medical conditions</b>			
Liver disease	2	50.0	-0.05
<b>Total off-premises</b>	<b>24</b>	<b>76.9</b>	

excessive alcohol consumption and related harms, with the possible exception of injuries, for which the findings were less consistent. The largest effect sizes were for studies relating outlet density to population consumption and violent crime.

### Summary of the Body of Scientific Evidence on Alcohol Outlet Density and Excessive Drinking and Related Harms

Using a variety of different study methods, study populations, and alcohol measures, most of the studies included in this review reported that greater outlet



density is associated with increased alcohol consumption and related harms, including medical harms, injuries, crime, and violence. This convergent evidence comes both from studies that directly evaluated outlet density (or changes in outlet density) and those that evaluated the effects of policy changes that had a substantial impact on outlet density, including studies of privatization, remonopolization, bans on alcohol sales and the removal of bans, and changes in density from known policy interventions and from unknown causes. Studies assessing the relationship between alcohol outlet density and motor-vehicle crashes produced mixed results.<sup>18,20,62,112</sup>

### Other Benefits and Harms

Communities commonly seek limits on alcohol outlet density, either through licensing or zoning, for purposes that may not be directly related to public health (e.g., the reduction of public nuisance, loitering, vandalism, and prostitution).<sup>7,113</sup> Although the team did not specifically search for studies that assessed these outcomes, some of the studies the team reviewed suggested that there may be an association between outlet density and these outcomes as well. For example, a study from New South Wales, Australia, reported an association between outlet density and “neighborhood problems with drunkenness” but did not find a significant association with property damage.<sup>114</sup> There was evidence of one potential harm of decreased outlet density (i.e., an increase in fatal single-vehicle nighttime vehicle crashes) presumably associated with an increase in driving in response to greater distances between alcohol outlets.<sup>19</sup>

### Applicability

Evidence of the association of outlet density and alcohol consumption and related harms derives from studies conducted primarily in North American and in Scandinavian countries. One study<sup>27</sup> indicated that the impact of changes in outlet density may be affected by demographic characteristics (e.g., gender distribution) of the population; in this case, the association of outlet density with assaults requiring hospitalization was stronger where there was a greater proportion of boys/men in the population. Most of the studies reviewed assessed the effects of increased outlet density, which is a consequence of the general trend toward liberalization of alcohol policies associated with outlet density. Few data were found from which to draw inferences about regulations that control or reduce outlet density.

Studies of bans on alcohol sales, conducted primarily among American Indian and Alaska Native populations, consistently report a reduction in excessive consumption and related harms following the implementation of a ban on alcohol sales, possession, or both,

provided the area affected by the ban was not surrounded by other sources of alcoholic beverages.

### Barriers

Reductions in outlet density, with resultant reductions in consumption, are likely to have substantial commercial and fiscal consequences, and thus may be opposed by commercial interests in the manufacture, distribution, and sale of alcoholic beverages. In keeping with its commercial interests, the alcoholic beverage industry has tended to support policies that facilitate outlet expansion.<sup>115</sup>

State pre-emption laws (i.e., laws that prevent implementation and enforcement of local restrictions) can also undermine efforts by local governments to regulate alcohol outlet density.<sup>7</sup> Indeed, the elimination of pre-emption laws related to the sale of tobacco products is one of the health promotion objectives in *Healthy People 2010*.<sup>13</sup> However, there is no similar objective in *Healthy People 2010* related to the sale of alcoholic beverages.

### Economic Evaluation

The team’s systematic economic review did not identify any study that examined the costs and benefits of limiting alcohol outlet density. Although there has been speculation that reducing the number of alcohol outlets may result in a loss of revenue to state and local governments owing to a loss of licensing fees and alcohol tax revenues, the team found no studies that have documented this speculation. In addition, there may be economic gains resulting from revenue generation from merchants and consumers who would otherwise avoid areas known to have a high alcohol outlet density; however, the team found no studies about this topic. Moreover, in 2006, alcoholic beverage licenses accounted for only \$406 million (0.9%) of the \$45 billion that state governments received from all licensing fees, and alcohol taxes accounted for only 0.7% of all taxes (\$4.9 billion of \$706 billion) collected by state governments ([www.census.gov//govs/statetax/0600usstax.html](http://www.census.gov//govs/statetax/0600usstax.html)).

Even in the absence of published data on program implementation costs and other costs related to this intervention, it should be expected that the cost of restricting access to alcohol by limiting the number of alcohol outlets is likely to be small relative to the societal cost of excessive alcohol consumption in the U.S. For example, in 1998, the most recent year for which data are available, the societal cost of excessive alcohol consumption in the U.S. was \$185 billion, including, among other costs, approximately \$87 billion in lost productivity due to morbidity, \$36 billion in lost future earnings due to premature deaths, \$19 billion in medical care costs, \$10 billion in lost earnings due to crime, \$6 billion in costs to the criminal justice



system, and \$16 billion in property damage related to motor-vehicle crashes.<sup>4</sup> Moreover, each state alcohol enforcement agent is responsible for monitoring an average of 268 licensed establishments<sup>116</sup>; thus, reducing the number of retail alcohol outlets might reduce their enforcement responsibilities. In summary, no existing study examines the economic costs and benefits of limiting alcohol outlet density.

### Research Gaps

Although the scientific evidence reviewed indicates that the regulation of alcohol outlet density can be an effective means of controlling excessive alcohol consumption and related harms, it would be useful to conduct additional research to further assess this relationship:

- There are few if any studies evaluating how local decisions are made regarding policies affecting alcoholic beverage outlet density or the consequences of such policy changes. Such case studies may be difficult to conduct, but they could provide important insights to guide policy decisions regarding alcohol outlet density in other communities.
- The majority of outlet density research explores the impact of increasing alcohol outlet density on alcohol-related outcomes; there is a lack of research on the impact of reducing outlet density. This might be done by observing the impact of temporal changes in outlet density on excessive alcohol consumption and related harms.
- The association of on- and off-premises alcoholic beverage outlets with illegal activities such as prostitution and drug abuse should be examined. In themselves, these may have adverse public health and other outcomes; in addition, they may confound the apparent association of alcohol outlets with these outcomes.
- Relatively little is known about the impact of density changes relative to baseline density levels. Some authors (e.g., Mann<sup>117</sup>) have proposed that the association between outlet density and alcohol consumption follows a demand curve, such that when density is relatively low, increases in density may be expected to have large effects on consumption, and when density is relatively high, increases in density should be expected to have smaller effects.<sup>21,117</sup> Thus, it would be useful to assess this hypothesis empirically using econometric methods, with different kinds of alcohol-related outcomes. Such information would allow communities at different alcohol outlet density “levels” to project the possible benefits of reducing density by specific amounts or the potential harms of increasing density.
- For public health practitioners, legislators, and others attempting to control alcohol outlet density to reduce alcohol-related harms, it would be useful to

catalog approaches to regulation beyond licensing and zoning that may have an effect on outlet density (e.g., traffic or parking regulations that, in effect, control the number of driving patrons who may patronize an alcohol outlet).

- A primary rationale for limiting alcohol outlet density is to improve public health and safety. Furthermore, the economic efficiency of limiting outlet density is difficult to assess without data on the economic impact of this intervention. To remedy this, future studies on the impact of changes in alcohol outlet density should assess both health and economic outcomes, so that the economic impact of this intervention can be assessed empirically.

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The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the CDC.

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## PREVENTING CHRONIC DISEASE

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TOOLS AND TECHNIQUES

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# Using Public Health and Community Partnerships to Reduce Density of Alcohol Outlets

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PEER REVIEWED

## Abstract

Excessive alcohol use causes approximately 80,000 deaths in the United States each year. *The Guide to Community Preventive Services* recommends reducing the density of alcohol outlets — the number of physical locations in which alcoholic beverages are available for purchase either per area or per population — through the use of regulatory authority as an effective strategy for reducing excessive alcohol consumption and related harms.

We briefly review the research on density of alcohol outlets and public health and describe the powers localities have to influence alcohol outlet density. We summarize *Regulating Alcohol Outlet Density: An Action Guide*, which describes steps that local communities can take to reduce outlet density and the key competencies and resources of state and local health departments. These include expertise in public health surveillance and evaluation methods, identification and tracking of outcome measures, geographic information systems (GIS) mapping, community planning and development of multisector efforts, and education of community leaders and policy makers. We illustrate the potential for partnerships between public health agencies and local communities by presenting a contemporary case study from Omaha, Nebraska.

Public health agencies have a vital and necessary role to play in efforts to reduce alcohol outlet density. They are often unaware of the potential of this strategy and have strong potential partners in the thousands of community coalitions nationwide that are focused on reducing alcohol-related problems.

## Introduction

Excessive alcohol use includes binge drinking (defined as 5 or more drinks for men or 4 or more drinks for women on 1 or more occasions), heavy drinking (more than 1 drink per day on average for women or more than 2 for men), and any drinking among underage youth or women who are pregnant (1). Excessive alcohol use is the nation's third-leading cause of preventable death, causing approximately 80,000 deaths per year in the United States (2,3) and contributing to a range of health and social problems, including automobile crashes and drowning, heart disease, hypertension, cancers such as breast and oral-pharyngeal, interpersonal violence, HIV infection, unplanned pregnancy, alcohol poisoning, and fetal alcohol spectrum disorders (4). These negative consequences for individuals, families, communities, and society at large cost the United States approximately \$223.5 billion in 2006 (5).

## Regulating Alcohol Outlet Density: A Public Health Strategy

The public health profession has a tradition of promoting health and preventing harm in populations through the use of laws and regulations, including land use and zoning codes. Regulation of alcohol outlet density is part of this tradition (6). However, despite evidence supporting regulation of alcohol outlet density, many public health practitioners are unaware of its potential and do not know how to implement it.

Alcohol outlet density refers to “the number of physical locations in which alcoholic beverages are available for purchase either per area or per population” (7). Alcohol outlets include all commercial businesses that sell and serve alcohol for on-premise (eg, bars, restaurants) or off-premise consumption (eg, convenience and grocery stores).



Numerous studies have found a significant relationship between alcohol outlet density and alcohol consumption and alcohol-related harms. Examples of such findings include the following:

- In Los Angeles County, researchers estimated that every additional alcohol outlet was associated with 3.4 additional violent incidents per year (8).
- In Cleveland, researchers estimated that every additional bar added to a city block resulted in 3.4 more crimes being committed on that block per year (9).
- In New Orleans, researchers predicted that a 10% increase in the density of outlets selling alcohol for off-premise consumption would increase the homicide rate by 2.4% (10).
- Researchers in Newark, New Jersey, found an almost 1-to-1 relationship between alcohol outlets and crime; that is, a slightly less than 1% decrease in the density of alcohol outlets would result in a 1% drop in violent crime (11).

A review of 88 studies on alcohol outlet density and public health by Campbell et al (7) concluded that greater outlet density was associated with a variety of public health and safety concerns, including increased alcohol consumption, alcohol-impaired driving, injury, crime, violence, neighborhood disruption, and other harms. The review noted the relative lack of research on the health effect of reducing alcohol outlet density — most natural experiments have taken place in environments of increasing density. One study found that a decrease in the number of outlets (as a result of remonopolization, not density regulation) selling medium-strength beer in Sweden led to significant declines in hospitalizations for acute intoxication, suicides, and motor vehicle crashes (12). Studies of bans on alcohol sales in isolated communities also demonstrated the positive health effects of reducing the physical availability of alcohol (7). A nonpeer-reviewed case study of changes in land use and nuisance abatement provisions in Vallejo, California, estimated that such changes led to a 53% reduction in alcohol-outlet-related police calls for service (13).

On the basis of the evidence in the Campbell review, the independent, nonfederal Task Force on Community Preventive Services “found sufficient evidence of a positive association between outlet density and excessive alcohol consumption and related harms to recommend limiting alcohol outlet density through the use of regulatory authority (eg, licensing and zoning) as a means of reducing or controlling excessive alcohol consumption and related harms” (14).

## Using Local Zoning and Land-Use Regulations to Influence Density

States and localities can reduce alcohol outlet density in at least 4 ways:

- Limit the number of alcohol outlets per specific geographic unit.
- Limit the number of outlets per population.
- Establish a cap on the percentage of retail alcohol outlets per total retail businesses in a geographic area.
- Limit the location and operating hours of alcohol outlets.

In addition to these possibilities, localities may use land-use powers to limit, deny, or remove permission to sell alcohol from existing outlets.

Public health efforts to address problems related to alcohol outlets at the community level date back at least to 1977, when the Oakland, California, city council, recognizing a link between alcohol outlets and neighborhood crime and violence, adopted a zoning ordinance giving it the power to grant or deny land use permits for new alcohol outlets (15). Fifteen years later, backed by strong community support, the city adopted a “deemed approved ordinance,” establishing new criteria for approval of alcohol outlets under local zoning laws, approving all existing outlets automatically, and levying a fee on them that funded annual inspections to ensure that outlets were compliant with new criteria (16,17). After the ordinance won the approval of California courts (18), it set the stage for other cities across the country to exercise greater control over the operations of problematic alcohol outlets within their borders.

The City of Oakland could do what it did because the repeal of Prohibition in the United States gave states primary responsibility for decisions affecting alcohol outlet density. Many states allow local jurisdictions to impose stricter limitations through their own licensing authority or through land use (also known as zoning) and enforcement policies. State preemption is the legal doctrine that determines the degree of local control over licensing decisions that affect alcohol outlet density decisions. Local governments have authority to regulate alcohol outlet density only to the extent that the state grants that authority. States belong to various categories of preemption, which range from exclusive state preemption to exclusive local licensing, and, depending on the category, both levels of government can play important roles in regulating density. This interplay between state and local powers affects actions that states and communities decide to take (19).



In many jurisdictions, local or state licensing boards make alcohol outlet licensing decisions without input from local authorities. However, **land-use decisions more typically involve local governments, because these decisions require assessment of local conditions — ensuring, for example, that the alcohol outlet location is compatible with the surrounding area and will not create a public nuisance.** Public nuisance-abatement ordinances and permit processes found in local zoning ordinances (often referred to as “conditional-use permits” [CUPs]) usually govern local land use. CUPs typically regulate new alcohol outlets, whereas nuisance-abatement ordinances regulate existing outlets. Together these 2 tools can prevent overconcentration of new alcohol outlets and reduce problems with existing outlets. Examples of CUPs and nuisance- abatement ordinances are available from [www.camy.org/action/outlet\\_density](http://www.camy.org/action/outlet_density).

## An Action Guide for Reducing Alcohol Outlet Density

Following up on the recommendation of *The Guide to Community Preventive Services* (14), the Centers for Disease Control and Prevention funded the Center on Alcohol Marketing and Youth (CAMY) and the Community Anti-Drug Coalitions of America (CADCA) to develop training materials and an action guide, *Regulating Alcohol Outlet Density* (13). The 2 organizations drew on expertise in the field of alcohol policy and worked with an advisory group composed of state and local community coalition leaders and city and state public health department employees.

## Roles for State and Local Public Health Agencies and Community Coalitions

*Regulating Alcohol Outlet Density* (13) describes the unique roles state and local health departments and community coalitions can play in reducing alcohol outlet density. The more localized decision making about land use and alcohol licensing is the greater the role of state and local public health agencies to inform local decision making. State and community efforts to regulate alcohol outlet density begin with public health surveillance and measurement of the number and location of outlets, with particular attention to the distances from one to another. Surveillance can include data on binge drinking (eg, on the type of beverages consumed by binge drinkers), drinking locations, alcohol-impaired driving by adults and youth, locations where alcohol-related crimes occur, and police calls for service and the relationship of these data to specific alcohol outlets and alcohol outlet density. These data can be combined with geographic information systems (GIS) mapping to develop visual representations of the spatial connection between alcohol outlet density and community problems.

Federal funds cannot be used to lobby at the federal, state, or local level. However, federal and state prohibitions on lobbying do not prevent state and local health departments from informing policy debates. State and local health departments can provide crucial support by identifying, tracking, and providing data (eg, outcome measures) and developing GIS maps that show relationships between outlet density and community problems. They can also provide forums for community planning and conduct and sponsor education of community leaders and policy makers.

As in other areas of public health (20–22), partnerships with community coalitions are essential. Through the Drug-Free Communities program, the federal government developed a network of local coalitions skilled at mobilizing grassroots members; strengthening community collaboration; and reducing alcohol, tobacco, and other drug use (23). Coalition membership usually includes parents, staff of nonprofit organizations, city and county officials, health department staff, law enforcement officials, and health care providers.

## Nine Steps for Local and State-Level Policy Action

*Regulating Alcohol Outlet Density* describes steps community coalitions and public health departments can take to educate and inform policy makers. These steps draw from lessons learned in tobacco control and other successful public health policy initiatives (24–26). The order of steps may vary, and some steps may require more emphasis than others, depending at least in part on whether the campaign involves state- or local-level changes.

**Step 1: Assess resources needed for policy advocacy.** What is the capacity of the community undertaking the policy campaign? Although the public health department cannot take the lead on most of these steps, it can contribute to information on the community’s human resources (eg, leadership, skills), data resources, likely challenges and opposition, and technical assistance. The assessment addresses how difficult the policy change may be to achieve and how extensive the resources are for achieving it. If resources are scarce, for instance, then attempting to shut down a single alcohol outlet that research has identified as causing a public nuisance may be a more reasonable goal than passing a city ordinance.

**Step 2: Clarify the policy goal.** The key mechanism here is to develop a *policy action statement* — approximately 25 words that articulate the problem, the policy solution, what the policy will do, who will benefit from the policy, and names of policy makers who could ultimately adopt the policy.



**Step 3: Use data to inform and educate about the value of the policy.** An *issue brief* can be useful for framing the issue and the solution. A good issue brief summarizes data on the problem and the effectiveness of the proposed solution and explains the link to related community concerns (eg, underage drinking, crime). Examples of issue briefs are available from [www.camy.org/action/outlet\\_density](http://www.camy.org/action/outlet_density).

**Step 4: Seek in-kind support from an attorney with expertise in municipal or state law.** An attorney who supports the policy goal and has expertise in related local and state laws can be indispensable in drafting an ordinance, explaining preemption issues, and advising on how to advocate without violating federal or state lobbying laws. Model ordinances are available from [www.camy.org/action/outlet\\_density](http://www.camy.org/action/outlet_density).

**Step 5: Conduct media advocacy campaigns.** Outreach to the news media augments outreach to policy makers and community leaders. Media advocacy is a powerful tool for influencing the policy process (27,28).

**Step 6: Organize and mobilize grass-roots and “grass-tops” support.** This step provides a foundation for all the other steps and involves building a grass-roots base (to establish “bottom up” support and organize the voice of the community) and educating leading decision makers (to win “top-down” support) (24,29).

**Step 7: Present the evidence to support the value of enacting the proposed policy change.** The policy-making body may be elected or appointed. Public hearings often take place, and policy supporters must be ready to make their case by providing a fair and accurate summary of the costs and benefits of the proposed solution and marshaling testimony from residents, health care professionals, health department personnel, and law enforcement. Coalitions can play a vital role in mobilizing the community and preparing the presentation. Public health departments can contribute by

- Capitalizing on relationships with decision makers to educate them about the policy effects before the public hearing.
- Responding to requests for written information.
- Responding to questions from decision makers during testimony in public hearings, in the context of their role as staff.
- Providing testimony, when requested, on the health effects of the proposed policy during public hearings.
- Testifying on the benefits of the policy during public hearings when the formal position of the health department is in support.

**Step 8: Plan for implementation, enforcement, and evaluation.** The lack of a postadoption plan can ultimately undermine the entire campaign. A law is of little value if not enforced and can be difficult to sustain without evaluation of its effects. The community plays an important role in monitoring the administration of the new ordinance, which is facilitated by early planning:

- When developing the proposed policy, engage relevant agencies in discussion about effective administration and enforcement.
- Integrate implementation and enforcement steps into the policy itself.
- Identify data that can be used to evaluate the policy from health departments, law enforcement, and other organizations.
- Set up a mechanism for communication between relevant agencies and the coalition to promote cooperation and a monitoring procedure.
- Use media contacts to publicize enforcement and implementation.

**Step 9: Overcome challenges and pitfalls.** Once a policy is enacted and implementation and enforcement have begun, the community should expect challenges, including pressure to return to the status quo. Communities can anticipate and plan for such challenges by regularly monitoring the community environment, including tracking the effects of the ordinance on community health and safety and demonstrating its value. Enactment is just the beginning of implementation, monitoring, and evaluation.

## Omaha, Nebraska: a Case Study

We developed a case study of a campaign in Omaha, Nebraska, to illustrate the 9 steps in the action guide. The Omaha campaign grew out of concerns from members of the city’s Orchard Hill Neighborhood Association (OHNA) about a proposed alcohol outlet. The location of the proposed outlet was the epicenter of violent crime and nuisance behaviors in their neighborhood; more than 2,000 police calls for service within a half-mile radius of the outlet were made within 11 months. A shooting outside the outlet further catalyzed the community. When the Nebraska Liquor Control



Commission (NLCC) approved the new license despite community protests, OHNA took the case to the state supreme court, which ruled in favor of the residents, ordering the NLCC to revoke the granted alcohol license and stating that the outlet should never have received a license in the first place. The court also required the NLCC to take into account environmental conditions that can make an alcohol outlet either a viable business or a factor in community disintegration (30).

This court case raised community awareness about the lack of local control over outlet density in Omaha and helped the community achieve Step 1: the community developed a sense of the resources available for policy change. The case also contributed to Step 6 (mobilization of grass-roots support). In 2010, as outlet-related crime and violence flared, Project Extra Mile (PEM), an Omaha-based nonprofit organization focused on underage drinking, helped residents to clarify their policy goal (Step 2): to pass a local land-use ordinance providing the city with the final authority to determine whether a use permit should be granted to a new alcohol outlet within city limits, thereby bypassing the NLCC process.

The campaign was dubbed “LOCAL” — “Let Omaha Control Its Alcohol Landscape” ([www.thelocalcampaign.com](http://www.thelocalcampaign.com)). The county public health department provided guidance and expert testimony throughout the process. PEM used GIS maps to illustrate the problem, and residents collected personal stories of problems with the existing outlets to create testimonials (Step 3). PEM worked with a Nebraska attorney and a national legal expert on state alcohol laws (Step 4). The new Omaha ordinance included nuisance-abatement performance standards, which set the basis for complaints to the city zoning department to include actions such as disturbance of the peace, illegal drug activity, public drinking or drunkenness, harassment of passersby, public urination, assaults, vandalism, and so on. These were modeled after the provisions of Oakland’s deemed approved ordinance (Step 4). PEM parlayed its network of media contacts and media advocacy expertise into news coverage (31,32), letters to the editor, and guest opinion pieces (Step 5) (33). Meetings with city council members on the proposed ordinance (Step 7) took place throughout the process with increasing public health department support and strong grass-roots involvement. In October 2012, the Omaha City Council adopted the nuisance standards (34). Discussions about the implementation, enforcement, and evaluation of the new ordinance (Steps 8 and 9) continue.

## Summary

Local coalitions can collaborate with state and local public health agencies to reduce excessive drinking through regulating alcohol outlet density. An action guide, *Regulating Alcohol Outlet Density*, describes 9 steps in the process (13). Public health agencies have a vital and necessary role to play in this effort, and they have strong potential partners in the thousands of community coalitions nationwide that focus on reducing alcohol-related problems. The strengths of this technique for public health action lie in the synergy that occurs when community coalitions and health departments forge partnerships. Taking advantage of this synergy, community coalitions and public health departments can use evidence-based strategies such as alcohol outlet density reduction to create healthier and safer communities.

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## EPIDEMIOLOGY AND POLICY

## Hours and Days of Sale and Density of Alcohol Outlets: Impacts on Alcohol Consumption and Damage: A Systematic Review

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**Abstract** — **Aims:** The aim of this study was to examine recent research studies published from 2000 to 2008 focusing on availability of alcohol: hours and days of sale and density of alcohol outlets. **Methods:** Systematic review. **Results:** Forty-four studies on density of alcohol outlets and 15 studies on hours and days of sale were identified through a systematic literature search. The majority of studies reviewed found that alcohol outlet density and hours and days of sale had an impact on one or more of the three main outcome variables, such as overall alcohol consumption, drinking patterns and damage from alcohol. **Conclusions:** Restricting availability of alcohol is an effective measure to prevent alcohol-attributable harm.

## BACKGROUND AND CONTEXT

The World Health Organization (WHO, 2002) has indicated that in developed countries the harm from alcohol is ranked third out of 26 risk factors examined in terms of their contribution to disease, disability or mortality. The top two were tobacco and blood pressure, respectively. Alcohol was third, and ahead of the following risk factors: high cholesterol, body mass index, low intake of fruit and vegetables, physical inactivity and illicit drugs.

However, in contrast, in recent years, there are initiatives in place that promote alcohol, increase access to alcohol and stimulate alcohol sales. For example, in the UK, the rise in the affordability of alcohol by 65% between 1980 and 2006, the extension of hours of sale for both on-premise and off-premise outlets in 2003, combined with extensive advertising and the promotion of alcohol have been linked with an increase in consumption and drinking-related damage (Heather, 2006; Leon and McCambridge, 2006; Anderson, 2007; British Medical Association Board of Science, 2008).

In Canada, there has been extensive marketing and promotion of alcoholic beverages by liquor boards working in concert with alcohol producers (Giesbrecht, 2006; Giesbrecht *et al.*, 2006). In recent years, all jurisdictions within Canada have undergone substantial changes in how alcoholic beverages are distributed and sold. These changes have, for the most part, been gradual, while in some cases they have taken place concurrently. The most notable changes have included: an increase in alcohol marketing and promotion, an increase in alcohol density within retail outlets, an extension of hours and days of sale, and the use of discounts or sale prices in order to promote sales.

Provincial liquor boards and commissions include management of alcohol sales as part of their mandate. However, the current control functions are narrowly restricted to social responsibility initiatives, interventions to control smuggling, concerns about the quality of products, and some health promotion campaigns, such as prevention of drinking and driving. The social responsibility functions do not include controlling overall sales or reducing high-risk drinking, both of which have been

linked with population-level rates of damage, caused by alcohol consumption (Edwards *et al.*, 1994; Babor *et al.*, 2003). This perspective presents an incongruity between, on one hand, the greater commercial orientation and an emphasis on increasing alcohol sales and, on the other, an increase in damage and the costs that this commercial orientation will likely lead to.

This skewed current emphasis on the market factors stands in a sharp contrast to over 40 years of international research on the associations between access to alcohol, drinking patterns and damage from alcohol consumption. The body of alcohol-related research has repeatedly shown that an increase in alcohol sales is strongly linked to an increase in drinking-related damage, as demonstrated by three international projects affiliated with WHO (Bruun *et al.*, 1975; Edwards *et al.*, 1994; Babor *et al.*, 2003). Furthermore, a study of 14 European countries (Norström, 1999) established a strong association between documented trends over a 50-year period, in overall alcohol sales and mortality from alcohol-specific causes (Ramstedt, 2001), trauma (Rossow, 2001; Skog, 2001), chronic disease (Ramstedt, 2004b), as well as total mortality (Norström and Skog, 2001). Similar findings have emerged from a study conducted a few years ago, focusing on Canada and its provinces for the period 1950–2000 (Ramstedt, 2003; Skog, 2003; Norström, 2004; Rossow and Hauge, 2004; Ramstedt, 2004a, 2005).

Concurrent with extensive promotion, overall alcohol consumption and high-risk drinking have been increasing in Canada in recent years. In Canada, there has been an increase in the rate of alcohol consumption since about 1996 (Statistics Canada, 2002; Statistics Canada, 2007), with some variation between provinces. During this time, the percentage of drinkers who reported drinking 5+ alcoholic beverages per occasion, at least monthly, has also increased (Statistics Canada, 1997, 2005).

It is expected that these initiatives to increase access to alcohol and stimulate higher levels of overall consumption will contribute to an increase in the risks from alcohol, damage from alcohol and attendant health, social and law enforcement costs (Rehm *et al.*, 2006, 2008). This paper examines recent research studies focusing on two interventions that have been shown



to be particularly potent in the past in controlling consumption and damage from alcohol consumption, namely, hours and days of sale, and alcohol outlet density (AOD) (Babor *et al.*, 2003, chapter 16; Stockwell, 2006).

## METHODS

A systematic literature search was performed in multiple electronic bibliographic databases, including: Ovid MEDLINE, PubMed, EMBASE, Web of Science (including Science Citation Index, Social Sciences Citation Index, Arts and Humanities Citation Index), PsycINFO, the Cochrane Database of Systematic Reviews and Google Scholar. The search was conducted using the following keywords, in different combinations: alcohol, availability, outlet density, hours of sales, drinking pattern, morbidity, mortality, drinking and driving, injuries, crime and violence.

The available literature was searched from January 2000 to December 2008, in reference to the publication date. The search was not limited geographically and to English language publications. The last nine full years were chosen in order to provide the most recent evidence, with a sufficient number of studies and to facilitate presentation of each study along several dimensions (see Tables 1 and 2). As noted below, there is generic convergence in the findings from our systematic review reported here, and what has been reported previously (e.g. Edwards *et al.*, 1994; Holder and Edwards, 1995; Babor *et al.*, 2003; Stockwell, 2006).

Studies were excluded from the analysis for any of the following reasons:

- There was no assessment of the impact of an intervention or dependent variable.
- There was not sufficient information on the key variables, such as density of outlets or hours or days of sale.
- It was a meta-analysis or systematic review.
- The studies that were published in iteration.
- If the articles were available in abstract form only.

### Data extraction

The titles and abstracts, where available, were independently reviewed by two researchers to identify potentially relevant papers. The papers were obtained and independently read in full by two researchers. Differences were resolved by discussion and if necessary, by a third party. Reasons for exclusion were identified. The data were extracted based on inclusion and exclusion criteria defined above and on the pre-specified range of outcomes detailed in Tables 1 and 2. A second member checked the table entries for their accuracy against the original articles.

Selected studies were summarized using the following categories: author and date of publication, place and year of study; design/sample and main indicators; interventions; findings, organized by (i) alcohol consumption, (ii) drinking pattern and (iii) damage; and policy implications and comments.

The findings of this study were organized into two main categories: density of alcohol outlets, and hours and days of sale. In each case, the impacts of a change were examined on the following dimensions: overall alcohol consumption, drinking patterns and damage from alcohol. Overall consumption refers to either the average volume of alcohol consumed by

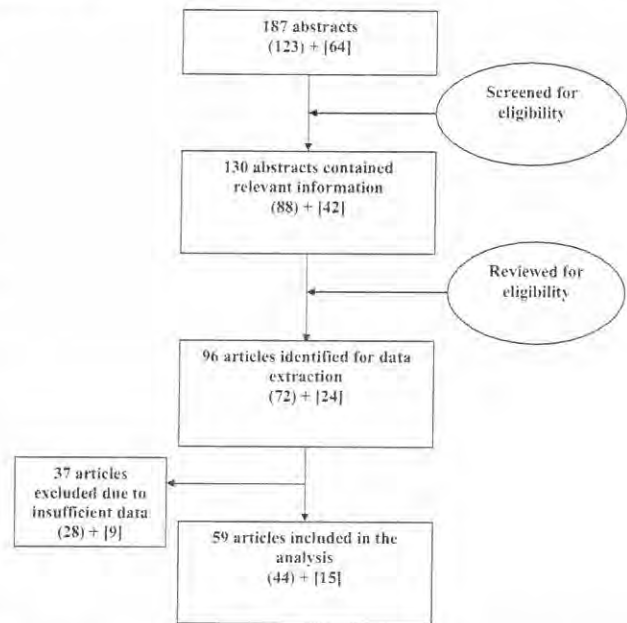


Fig. 1. Flowchart for the literature review on outlets density and hours and days of alcohol sales.

respondents (for example, if it is a survey-based study), or total sales of alcohol. Drinking patterns refer to a combination of variables, for example, how alcohol consumption is distributed over time. Measures of high-risk drinking are as indicated, for example, by blood alcohol levels. How high-risk drinking (such as, 5+ drinks per occasion) is distributed by age group or gender, and whether the percentage of persons at different levels of consumption increased or decreased as a result of the policy change, was also explored.

Finally, damage from alcohol is broadly defined, including both morbidity and mortality, and involving trauma (both intentional and unintentional causes), social problems and chronic disease. There are 45 types of trauma and chronic diseases associated with alcohol consumption (English *et al.*, 1995; Babor *et al.*, 2003). More than 30 ICD-10 three- or four-digit codes include alcohol in their name or definition (WHO, 2007) and over 200 ICD-10 three-digit disease codes in which alcohol is part of a component cause (Rothman *et al.*, 2008).

## RESULTS

The main search identified 187 abstracts, which resulted in 59 articles selected for full review and included in the present analysis (44 studies on AOD and 15 studies on hours and days of sale). The studies were found for the following countries: USA (36 studies), Australia (8), Canada (5), New Zealand (2), UK (2); and one study in each of Brazil, Iceland, Mexico, Norway, Sweden and Switzerland. The results of the systematic review are shown in Fig. 1.

### Density of alcohol outlets

Studies, which examined the AOD, are summarized in Table 1.

A few studies examined both drinking behavior (overall consumption and patterns) and alcohol-related damage



Table 1. Recent studies (2000–2008) on the impact of alcohol outlet density on alcohol consumption, drinking patterns and damage

Study; place and year of study	Design/sample of the study and main indicators	Findings: (A) drinking levels; (B) drinking patterns; (C) damage; and Policy implications and comments
(Troffald, 2005b); Québec, Canada, 1950–2000	Interrupted time-series analysis focusing on Quebec, with rest of Canada as the control area; impact of policy changes—wine in grocery stores in 1978, large grocery chain stores allowed to sell wine in 1984 on liters of pure alcohol per capita aged 15+ (total and by beverage); alcohol prices and disposable income as control variables	(A) 10% increase in wine sales, sales of spirits and beer not significantly affected, and less effect on total sales. For 1983–1984, there was no immediate significant increase in sales of wine The estimated effect of the 1978 policy change was considered modest and likely due to a limited range of wines impacted by this change. Also, it is difficult to untangle impact of these policy changes from concurrent ongoing marketing initiatives by the government retail system
(Troffald, 2005a); Alberta, Canada, 1950–2000	Interrupted time-series analysis focusing on Alberta, with the rest of Canada as the control area; impact of alcohol retail privatization (during 1993–1994) on total and beverage-specific adult per capita drinking (in liters of pure alcohol)—controlling for income and alcohol price—and fatal motor vehicle traffic accidents—controlling for number of motor vehicle registrations	(A) Alcohol retail privatization had a significant permanent effect on the sale of spirits, the effect on wine and beer sales was not significant, and the effect on spirits was not large enough to affect total sales. (C) The effect on the number of fatal motor vehicle traffic accidents was not significant While the privatization had an impact on AOD and hours and days of sale, it is noteworthy that alcohol sales were never allowed in ordinary grocery stores. Sales at the wholesale level continued to be under government monopoly control. The new system restricted the development of liquor store chains
(Norström, 2000); Norway, 1965–1995	Time-series analysis; number of public drinking places per 10,000 inhabitants (aged 15+); crime statistics (violence charges and convictions) per 100,000 inhabitants	(C) Statistically significant positive relationship was found between AOD and violence charges. For convictions, the relationship was positive, but of borderline significance ( $P = 0.06$ )
(Pollack <i>et al.</i> , 2005); CA, USA, 1979–1990	Multi-level analysis using cross-sectional surveys from four north/central California cities ( $n = 8197$ , 82 neighborhoods) linked to neighborhood deprivation variables. Three measures of alcohol access: AOD, closest distance of outlet to respondent's home and number of outlets within 0.5 mile radius of home. Separate analysis: on- and off-premise outlets	Other studies support conclusion, but first to be based on longitudinal data. To test for robustness and cultural specificity, replication studies in other drinking cultures are warranted (A) The most deprived neighborhoods had substantially higher levels of AOD than the least deprived (46% versus 15%). Multi-level analysis showed that the least deprived neighborhoods were associated with the heaviest alcohol consumption even after adjusting for individual-level socio-demographic characteristics. (B) Alcohol availability was not associated with heavy drinking and thus, did not mediate the relationship between neighborhood deprivation and heavy alcohol consumption Mismatch between supply and demand may cause people in the most deprived neighborhoods to disproportionately suffer the negative health consequences of living next to an AO
(Kypri <i>et al.</i> , 2008); New Zealand, 1983	Examined the geographic density of AOs and associations with drinking patterns and problems among University students. 2550 students (mean age = 20.2) at six campuses were surveyed, and counts of outlets within 3 km from each campus were tested for their non-parametric correlation with campus drinking levels and related problems	(A) There were consistent significant associations of outlet densities with all outcomes in student-level-adjusted models. (C) Correlations for campus-level data were 0.77 ( $P = 0.07$ ) for drinking and personal problems and 0.31 ( $P = 0.54$ ) for second-hand effects Increasing AOD, and particularly off-premise licenses, may increase alcohol-related harm among university students
(Cohen <i>et al.</i> , 2006); Los Angeles (LA) County, USA, 1988–1996	Individual growth models to examine the independent effects of AO and damaged buildings on gonorrhea. Prevalence of gonorrhea, licensed AO, properties damaged during civil unrest and destruction of liquor stores, and other businesses in 1992	(C) The individual growth model explained over 90% of the residual variance in census tract gonorrhea rates. After the civil unrest, a unit decrease in the number of AO per mile of roadway was associated with 21 fewer gonorrhea cases per 100,000 (po.01) in tracts affected by the unrest compared to those not affected The findings suggest that efforts to control STDs, including gonorrhea and HIV, should address contextual factors that facilitate high-risk behaviors and disease transmission
(Gorman <i>et al.</i> , 2001); NJ, USA, 1990	Examines the relationship between neighborhood social structure, AODs and violent crimes. Data were collected for 98 block groups and analyzed using bivariate, multivariate and spatial analyses	The strong association was between AO and violent crime. Even after variables were controlled for, areas with higher AO were found to have higher rates of violent crimes (explained about 1/5 of variability in violent crimes) It was found that AO only affects the immediate community and not surrounding areas. Hot spots of crime were not taken into consideration and may have affected the results found (i.e. areas where night time businesses are open, schools, etc.). Also, this study does not examine the mechanisms behind AO that account for the higher rates of crimes observed in such communities

- (Peterson *et al.*, 2000); Columbus, OH, USA, 1990
- Explore whether certain local institutions (i.e. AO) provide a mechanism linking economic deprivation and residential instability to criminal violence; rates of total and individual violent crimes were examined for 177 census tracts
- (Lipton and Gruenewald, 2002); CA, USA, 1990–1991
- A spatial population model of the production of violence used to examine the relationships between population characteristics of target and surrounding areas and violence rates
- (Gyimah-Brempong, 2001); USA, 1990 and 1992
- Investigate the relationship between alcohol availability (measured as alcohol license density) and crime. Census tract data from Detroit was used
- (Escobedo and Ortiz, 2002); New Mexico, USA, 1990–1994
- Ecological design; linear regression model. Assessed the relationship between liquor AOD and alcohol-related health outcomes, including arrests for driving while intoxicated, alcohol-related crashes, crash fatality (adjusted for age, sex and minority status) and alcohol- and drug-related deaths
- (Scribner *et al.*, 2007); Los Angeles, CA, USA, 1990–1996
- Voting rates were analyzed to determine if a decrease on AOD is related to a change in social capital, subsequent to the LA civil unrest of 1992. It was predicted that a loss of AO would result in an increased social network. AO was divided into onsite and offsite locations and civil engagement (social capital) was measured by how many residents voted. They also looked at rates of economic inequality, economic deprivation, crime rates and other features of the neighborhoods. The data were analyzed using descriptive, bivariate and multivariate analyses in cross-sectional and longitudinal analyses
- (Yu *et al.*, 2008); Los Angeles, CA, USA, 1990–1999
- A hierarchical model was used to evaluate the impact of the '1992 Civil Unrest' in LA on crime; civil unrest lead to damaged AO, therefore decreased alcohol sales. A total of 480 census tracts; 144 tracts underwent AO closures, while 336 did not. Measure of assaults was obtained from the LA Police Department
- (Gyimah-Brempong and Racine, 2006); Detroit, MI, USA, 1992
- This study uses census tract data and robust nonparametric estimation methods to investigate the relationship between alcohol availability and crime rates
- Institutional mechanisms, such as bars, did not explain why economic deprivation and residential instability are strongly linked to violent crime  
The findings demonstrate that communities may reduce violent crimes somewhat by preventing some types of local institutions (i.e. bars) and by promoting the development of other types (e.g. recreation centers)
- (C) Bar density was found to be strongly associated with greater rates of assault, while restaurant density was associated with less violence. Both appeared to have the greatest effect in densely populated areas. Local and nearby population characteristics were also found to be related to greater rates of violence  
While limited to cross-sectional data, the current study suggests that AO, in the presence of socio-economic measures, moderate the occurrence of violence in urban areas
- (C) Alcohol availability had a significantly positive effect on the total crime rate, violent crime rate, property crime rate and homicide rate (alcohol elasticity of crime rates: 0.92, 0.82, 0.87, 0.12, respectively)
- (C) Suicide, alcohol-related crash, and alcohol-related crash fatality are significantly associated with AOD. Data also show that, compared with the first tertile, suicide and alcohol-related crash rates increase about 50% and the alcohol-related crash fatality rate increases two-fold with the third tertile of AOD. Greater availability of AO is associated with higher rates of suicide, alcohol-related crash, and alcohol-related crash fatality. With one unit increase in the rate of liquor outlet density, per every 1000 population the rate of suicide increases by 0.23, the rate for alcohol-related crash by 2.4 and the rate for alcohol-related crash fatality by 0.22  
In New Mexico, counties with lower median family income tend to have higher liquor outlet density. Programs to reduce alcohol-related injury by reducing availability of alcohol in communities where many of its residents are of low socio-economic status should be implemented
- Found that after the riots, more AOs were closed down in areas where most damage had occurred as well as communities where the social capital opportunity was higher, where there was a greater proportion of Hispanic, Asian and M residents, and with a greater population between 15 and 44 years of age. They also found that voting rates increased regardless of whether AOs were decreased, but the increase was substantially higher in communities where AOs were surrendered (i.e. licenses surrendered)  
Seems that a decrease in AO acts as a catalyst for increasing social capital through expanding social systems and this held up in spite of economic differences, but not inequalities between communities. Limitations exist in that voting rates may not be an accurate predictor of social capital and migrating effects due to the riot were not taken into consideration
- (C) A positive association between alcohol availability and assault; beginning 1 year after the civil unrest, on average, the census tracts that experienced AO closures experienced more dramatic decreases in assault rates  
This natural experiment proves important in implementing policy changes to reduce alcohol-related assault and crime
- (C) It is found that there is a positive and statistically significant relationship between crime rates and alcohol availability with calculated elasticities of 0.34, 0.37, 0.35 and 0.27 for total crime, violent crime, economic crime and homicide, respectively  
The effects of alcohol availability on crime rates vary with the density of alcohol availability  
Alcohol control policies should be evaluated at different levels of alcohol availability, in contrast to current policies, which are based on the assumption that the effect of alcohol control policies is the same regardless of the level of alcohol availability

(continued overleaf)

Table

Study; place and year of study	Design/sample of the study and main indicators	Findings: (A) drinking levels; (B) drinking patterns; (C) damage; and Policy implications and comments
(LaScala et al., 2001); California communities, USA, 1992–1996	A geostatistical analysis of ecological data to examine the relationships of neighborhood characteristics, including alcohol availability and alcohol consumption patterns to pedestrian injury collisions. Archival and individual-level data from a general population telephone survey were obtained from four California communities. Units of analysis were geographic areas within each community, defined by the spatial clustering of telephone survey respondents. Independent variables: number of cross streets, bars, restaurant and off-premise outlets per km of roadway; dependent variable: pedestrian injury rate	(C) Alcohol-involved pedestrian collisions occurred more often in areas with greater bar densities and greater population, and where the local population reported drinking more alcohol per drinking occasion. Pedestrian collisions not involving alcohol occurred more often in lower income areas with greater population and cross-street densities, and in areas having either younger or older age populations The identification of neighborhood variables associated with pedestrian collisions has important implications for policy formation and targeted prevention efforts
(Treno et al., 2001); CA, USA, 1992–1996	Alcohol availability, both on and off-premise, self-reports of injuries in past 6 months, type of injury, cause, location, demographic characteristics of respondents. Outlets linked with survey respondents through geographic mapping and assigned an availability measure <i>N</i> of outlets within 2 km radius for on and off separately. Telephone survey of 13,441 respondents from four communities	(C) Self-reported injury is related to the density of both on- and off-premise AO, independent of the other predictors in the model. There may be several explanations of this relationship. Outlets may be associated with more drinking, which predisposes individuals to injury. Outlets might influence neighborhood characteristics to put individuals at risk of injury, independent of their drinking. Or AO may, merely, be a surrogate measure for broader community conditions, although this possibility is partially controlled for in this study through the inclusion of individual and community-level covariates in the analysis models These three possible explanations have different policy implications: (1) interventions need to target problematic drinking behavior; (2) interventions may be most profitably targeted toward altering alcohol access, independent of drinking behavior; and (3) targeting either outlets or drinking would be irrelevant to injury
(Gruenewald et al., 2002); CA, USA; 1993–1996	The study examines the degree to which the physical availability of alcohol, as measured by outlet densities, is related to self-reported individual drinking patterns, preferred drinking location, as well as both <i>driving after drinking</i> (DAD) and <i>driving while intoxicated</i> (DWI). <i>N</i> = 7826 drinkers from 1353 zip code areas in California using general-population telephone survey. HLM was used to relate AOD within and surrounding respondents' area of residence to respondents' drinking and their drinking and driving. Measures of individual alcohol consumption: drinking frequency, drinks per occasion and variance in quantities consumed per occasion. Preferred drinking locations included bars, restaurants and homes or friends' homes. DAD was defined as driving a motor vehicle within 4 h of having one or more alcoholic drinks, and DWI was defined as driving after having too much to drink and drive safely. Geographic measures of AOD were obtained for bars, restaurants and off-premise establishments, using zip codes as geographic units of analysis	(A) Whereas restaurant densities were directly related to greater drinking frequencies and DAD, bar densities were inversely related to DAD. (C) Drinking and driving was strongly related to drinking location preference (e.g. bars and restaurants) only when considered simultaneously with individual drinking patterns, particularly drinking frequency. <i>Conclusions:</i> Increased restaurant density is strongly related to a higher rate of both self-reported DAD and drinking frequency. The strongest influence on both DAD and DWI is preferred drinking location, considered together with individual drinking patterns. AOD and preferred drinking location when considered together with individual drinking patterns support DAD and thereby increase the potential for alcohol-related accidents. (B) There were no direct effects of drinking patterns on drinking and driving
(Reid et al., 2003); Kansas City, MO, USA, 1995	Hierarchical regression analysis was used to determine the independent association between AOD and the rate of assaultive violence, socio-demographic factors, AOD and rates of assaultive violence across 89 inner-city census tracts in Kansas City, Missouri	(C) Socio-demographic variables predicted 61% of the variance in assaultive violence, but an additional 9% of the variability was explained by the AOD. AOD contributed significantly to the explained variance of the regression model and was associated with higher rates of assaultive violence in this Midwestern city Inner-city areas may be especially vulnerable to high concentrations of AO, especially when they are characterized by a concentration of deteriorated housing, predatory lending offices and a paucity of full-service supermarkets. In these contexts, even low AOD may function as a tipping point that portends a spiraling crime rate
(Gruenewald and Remer, 2006); CA, USA, 1995–2000	Population-based ecological approach. Longitudinal data from 581 consistently defined zip code areas represented in the California Index Locations Database, a geographic information system that coordinates population and ecological data with spatial attributes for areas across the state. Demographics, hospital discharge data, AO, retail data, violent assaults	(C) Lower median household income and greater percentages of minorities (African American, Hispanic and Asian) were related to increased rates of violence. A 10% increase in the number of off-premise AO and bars were related to 1.67 and 2.06% increases in violence rates across local and lagged spatial areas, respectively. Every six outlets accounted for one additional violent assault that resulted in at least one overnight stay in a hospital. These effects increased with larger M populations, doubling with every 3% increase. Assault rates were most strongly related to median household incomes and minority populations within zip code areas. Controlling for changes in assault rates related to these measures, greater numbers of licensed alcohol retail establishments, especially bars and off-premise outlets, were related to assault rates Failures to regulate the growth in the number of bars will increase rates of violence, especially in urban areas



- (Treno *et al.*, 2007); CA, USA, 1995–2000  
The study examines aggregate-level archival data on population and place characteristics collected for 581 indexed zip code areas. Panel model analysis enabled the examination of temporal effects and changes in AO numbers to population-based rates of alcohol-related motor vehicle accidents. Demographics, number of AO, retail data. The hospital discharge data (HDD) included automobile crashes resulting in at least one overnight stay; Automobile crash data: Statewide Integrated Traffic Record Systems (SWITRS) data included police reports of suspected alcohol-related automobile crashes
- (Nielsen *et al.*, 2005); FL, USA, 1996–1997  
Multivariate regression analyses were used to assess the impact of AOD on aggravated assault and robbery victimization in Latino and black populations. 70 census tracts with 500 or more residents were evaluated
- (Lapham *et al.*, 2004); Albuquerque, NM, USA, 1996–2000  
Investigated the spatial relationship between drive-up liquor window locals and alcohol-related traffic accidents for 2 years before and after New Mexico banned drive-thru alcohol sales. Cross-sectional and longitudinal (time series) regression analyses for two geographical areas: one model for the entire state (including Albuquerque) and a model focusing on the Albuquerque study area
- (Livingston, 2008b); Australia, 1996–2005  
Examined 9 years of data using fixed-effects models to determine the relationship between three types of AOD (using liquor licensing records) and assault (using police records of night time assaults)
- (Treno *et al.*, 2003); CA, USA, 1998–2000  
Investigates the relationship between AOD and self-reported underage drinking and driving, acquired through two telephone surveys. A final sample of 614 individuals, who had complete information on all relevant measures (323 M and 291 W). Hierarchical Linear Modeling Variables: *Drinking and driving (DAD)* and *riding with drinking drivers (RWDD)*
- (C) Changes in outlet densities over time, across 581 stable zip code locations, were directly related to traffic injury rates requiring hospitalization, but which may or may not have involved alcohol (HDD data) and to crash rates reported by police that were suspected to have had alcohol involved (SWITRS data). Local and lagged population characteristics were also related to both outcomes. Importantly, in support of established cross-sectional findings, bar and off-premise outlet densities were related to both measures
- (C) Higher AOD was associated with more Latino aggravated assault and robbery victims
- (C) Out of all NM liquor licenses, 189 (9%) included drive-up sales, which co-occurred with on- or off-premise licenses (94%). The rate of non-pedestrian alcohol-related crashes relative to non-pedestrian total crashes showed an increasing trend prior to the closure and a decreasing trend after the closure. Cross-sectional analyses in Albuquerque revealed that the percentage of alcohol-involved crashes was not related to densities of on- or off-premise AO per km of roadway, or to the percentage of drive-up outlets. Statewide, the percentage of drive-up outlets was not significantly related to the percentage of alcohol-related crashes within census tracts, but was positively associated with the percentage of alcohol-related crashes in surrounding census tracts. A statistically significant relationship did not exist between the number of drive-ups and percentage of alcohol-related crashes in either of the longitudinal models  
Despite the declining rate of alcohol-related crashes following closure of drive-up liquor windows, both in Albuquerque and statewide, regression models using spatial data do not demonstrate, definitively, an association between the decline and the closure of the drive-up liquor windows
- (C) The initial models found overall positive relationships between all three types of AOD and violence. When separate models were developed for different clusters of postcodes, the link between AOD and violence was significant in all neighborhood types, although specific relationships varied substantially  
Changes in the number of AOs in a community are linked to changes in the amount of violence a community experiences. Since the number of licenses for alcohol establishments is increasing, detrimental effects on the community may be expected
- (C) At the aggregate or city level, AO density, as measured by the number of on- and off-premise establishments licensed to sell alcohol, was associated with both DAD and RWDD. These effects were moderated by a number of individual-level effects, with younger respondents and W more likely to be affected by outlet densities. There was a main effect of AOD on DAD ( $P = 0.032$ ) (i.e. higher densities were associated with more frequent DAD). This effect was moderated by a number of individual-level effects, with younger respondents, and W more likely to be affected by outlet densities. The analysis of RWDD found a similar main effect for density, with moderated effects also for age and gender. Prompted by concerns that these effects were specific to either on- or off-premise densities, separate analyses predicting DAD were performed for each. These analyses produced virtually identical results, with the notable exception being one-tailed (as opposed to two-tailed) significance for density ( $P = 0.071$ ) and density  $\times$  age interaction ( $P = 0.093$ ) effects  
The findings provide support for the implementation of policies targeting alcohol AOD reductions. Areas with a large number of such outlets provide ample opportunities to youth for alcohol purchases

(continued overleaf)

Table 1. (continued)

Study: place and year of study	Design/sample of the study and main indicators	Findings: (A) drinking levels; (B) drinking patterns; (C) damage; and Policy implications and comments
(Freisthler and Weiss, 2008); USA, 1998–2001	The current study incorporates three aspects of the substance use environment in a panel study of 58 California counties over 4 years ( $n = 232$ ) to study this relationship for referrals to child protective services (CPS) for child abuse and neglect. The data were analyzed using Bayesian spatio-temporal panel models	Use of welfare, the number of AOs per population and the number of drug-related arrests per population are positively related to referrals while unemployment and admissions to publicly funded alcohol and drug user treatment programs are negatively correlated to referrals. Significant spatial structure and space–time relationships are also found. The findings indicate that supply of alcohol and drugs (as measured by number of alcohol outlets and arrests for drug use and sales) may increase risk for being referred to CPS, but treatment for substance use does not increase the risk for referral
(Freisthler <i>et al.</i> , 2007); CA, USA, 1998–2003	The purpose of the study was to determine how changes in the number of AO is related to rates of referrals, substantiations and foster care entries as a consequence of child maltreatment; examines temporal effects of AOD; data were obtained from the California Department of Social Services and California Department of Alcoholic Beverage Control, respectively. Data were analyzed using spatial random effects panel models, using Spatial Statistical Systems	It was found that areas with a greater amount of bars expressed higher rates of child maltreatment, but areas in which local and lagged bars as well as off premise AOs were increased was correlated with higher rates of foster care placements, but an increase in restaurants decreased child maltreatment
(Weitzman <i>et al.</i> , 2003); Boston, USA, 1999–2000	Designed to determine whether AOD correlated with heavy and frequent drinking and drinking-related problems. AOD, survey measures of drinking using a geographic information system and the Harvard School of Public Health College Alcohol Study ( $n = 3421$ ; site $n = 8$ ). Initial analyses tested rank-order correlations between AOD and drinking among all student drinkers. Next, rank-order correlations between AOD and drinking measures among subgroups of student drinkers were tested	(A) AOD was correlated with heavy drinking, frequent drinking and drinking-related problems. For W: underage students and students who picked up binge drinking in college were affected. (B) Overall, there was a significant correlation between AOD and heavy drinking (i.e. consumed 5+ drinks at an off-campus party) for all drinkers ( $r$ , with several sites tied in rank). This finding was found to hold for multiple subgroups of students, specifically for M and students who picked up binge drinking in college. AOD was correlated with frequent drinking (i.e. drank on 10+ occasions in past 30 days) for all drinkers, with multiple ties in rank, non-Greek affiliated students, underage students, which had multiple ties, and students who picked up binge drinking in college. (C) AOD was correlated with problem drinking (i.e. reporting 5+ problems since the beginning of the school year) among all drinkers, W, underage students, average students and students who reported picking up binge drinking in college
(Britt <i>et al.</i> , 2005); Minneapolis, MN, USA, 2000	Onsite and offsite alcohol establishment rates were compared to incidence of violence (obtained through the police department) in 79 neighborhoods in Minneapolis to determine any relationships present. The relationship between crime and AOD was determined cross-sectionally using Bayesian analytical methods	(C) Found a significant relationship between AOD and crime even in the presence of fixed effects and spatial smoothing. The north and central regions of Minneapolis were found to have both the most AOs and crime rates. It was found that the erection of just one AO can increase crime by five crimes per 1000 individuals per year (only severe crimes were studied) A possible limitation is that daytime employment residents were included in the study and not night time non-residents of the city, which may yield different results
(Freisthler <i>et al.</i> , 2004); USA, 2000	To determine whether neighborhood alcohol access is related to substantiated reports of child physical abuse and neglect. A cross-sectional study was implemented using spatial regression procedures to examine the relationship between number of bars, restaurants and off-premise outlets per population, and rates of child abuse in 940 census tracts	(C) Spatial regression techniques were applied and demonstrated that the number of off-premise outlets per 1000 of the population had a positive effect on the rate of child physical abuse, and the number of bars per 1000 of the population had a positive effect on the occurrence of substantiated neglect
(Freisthler <i>et al.</i> , 2005); California, USA, 2000	To examine neighborhood rates of child maltreatment for 304 block groups in one northern California city. A cross-sectional design	(C) Higher concentration of bars and numbers of incidents of drug possession were positively related to rates of child maltreatment when controlling for neighborhood demographic characteristics
(Gorman <i>et al.</i> , 2005); Houston, TX, USA, 2000	To compare the effects of AOs and drug hot spots on rates of violence. An ecological study design was employed, using a sample of 439 census tracts	It was found that socio-cultural variables accounted for 40% of the variability in violent crimes. In a model where socio-cultural variables and drug-related crimes were present, AOD did not represent a significant account of the variability in violent crimes. The model with drug crime density explained 72% of the variance in violent crimes, whereas the model with AODs explained 46% of the variance in violent crime rates. It was found that off-sale alcohol density was much more strongly correlated with violent crimes than on-sale AOs. Limitations of the study included the fact that information of violent crimes all came from the same place and alcohol-related crime was not looked at specifically as information was unavailable. Furthermore, attractors of violence were not analyzed such as late night businesses. Because a large city was used, a greater rate of violent crime was found and this may not be able to generalize to smaller locations

(Gruenewald *et al.*, 2006); CA, USA, 2000

Cross-sectional data on hospital discharges for violent assaults were obtained for residents of 1637 zip code areas in CA. Assault rates were related to measures of population and place characteristics using spatial statistical models corrected for spatial autocorrelated error

(Scribner *et al.*, 2000); NO, USA

Analyzed 2604 telephone surveys within 24 census tracts stratified by poverty status and AOD. Distance to AO, age, sex, race/ethnicity and level of education were entered as individual level covariates, and their corresponding aggregated means were entered as census tract level covariates (i.e. mean distance to outlets, mean age, percentage M, percentage Black, mean education). HLM alcohol consumption, drinking norms, drinking attitudes, social acceptability, exposure to AO, socio-demographics

(Zhu *et al.*, 2004); TX, USA, 2000.

Using multivariate regression and geospatial analyses, the relationship between AOD and violent crime was investigated. 188 census tracts in Austin, Texas, and 263 in San Antonio, Texas, with information drawn from archival sources

(Scribner *et al.*, 2008); 32 colleges and universities in the USA, 2000–2004

Objective: To examine the relationship between the physical availability of off-campus alcohol and drinking outcomes among college students. A multilevel analysis of students ( $N = 17,051$ ) residing on campus ( $N = 32$ ) was conducted. Four problem-drinking-related outcomes: average number of drinks when partying, frequency of drunkenness in the past 2 weeks, 30-day frequency of drinking and greatest number of drinks in one sitting; individual level covariates of drinking were introduced at the student level. The number of on- and off-premise AO within 3 miles of campus per 1000 enrolled students

(Livingston, 2008a); Australia, 2001

Cross-sectional data on police reported assaults, AO and socio-demographic characteristics were used to construct a series of models to test the relationship between AOD and assault. Four relationships were examined: a normal linear relationship between AOD and assault, a non-linear relationship with potential threshold or saturation densities, a relationship mediated by the socio-economic status of the neighborhood and a relationship that takes into account the effects of outlets in surrounding neighborhoods

(Huckle *et al.*, 2008); New Zealand, 2001–2005

Examined the relationship between physical, socio-economic and social environments and alcohol consumption patterns of drinkers aged 12–17 years. A random telephone survey. Multi-level modeling was used to predict typical-occasion quantity, frequency of drinking and drunkenness, using AOD as a predictive factor. A sample of 1179 teenagers, and AOD determined for 8628 census meshblocks

(C) Rates of assault were related to population and place characteristics within zip code areas, and with characteristics of populations living in adjacent zip code areas. Assault rates were related significantly to local densities of off-premise alcohol retail establishments, not bars. However, densities of bars substantially moderated the effects related to local population characteristics. Bars were related significantly to violence in unstable poor minority areas and in rural middle-income areas of the state

(A) Analysis of variance revealed that 16.2% of the variance in drinking norms and 11.5% of the variance in alcohol consumption were accounted for at the census tract level. In multivariate hierarchical analysis, individual distance to the closest AO was unrelated with drinking norms and alcohol consumption, whereas the mean distance to the closest AO demonstrated a negative relation with drinking norms ( $\beta_p = -5.50 \pm 2.37$ ) and with alcohol consumption ( $\beta_e = -0.477 \pm 0.195$ ); that is, the higher the mean distance to the closest AO, the lower the mean drinking norms score, and mean level of alcohol consumption. The findings suggest that the effect of AOD on alcohol-related outcomes functions through an effect at the neighborhood-level rather than at the individual-level. Problem drinkers tend to be grouped in neighborhoods, an effect predicted by AOD

(C) The final model (with adding AOD) explained 71% of the variance in violent crime in Austin and 56% in San Antonio, after controlling for socio-structural features. The issues of alcohol availability and access are fundamental to the prevention of alcohol-related crimes within communities

(A) Higher densities of on-premise AO strongly related to drinking outcomes, remaining after controlling for individual predictors of college drinking. The association indicated that the campus means for the average number of drinks when partying and the number of drinking occasions in the past 30 days were, respectively, 1.13 drinks and 1.32 occasions greater when the AOD was two SDs higher. Off-campus, on-premise AOD is strongly associated with college-drinking outcomes. Given the limited number of modifiable factors that affect college drinking, on-premise AOD represents a potential modifiable means of addressing the problem

(C) A significant relationship between AOD and assault rates was found. An increasing accelerating effect for the density of hotel (pub) licenses was found, suggesting a plausible upper limit for these licenses. The ongoing liberalization of the liquor licensing policy in Australia has the potential to give rise to increasing public health problems and public order

(A) AOD was associated with typical occasion quantity and approached significance for frequency of drunkenness. Frequency of supply was also a significant predictor of all drinking measures, as was ethnic status. Living within 10 min drive of relatively more outlets was associated with larger quantities of alcohol consumed by underage drinkers, making it an area of considerable importance from a public health perspective

(continued overleaf)



Table 1. (Continued)

Study; place and year of study	Design/sample of the study and main indicators	Findings: (A) drinking levels; (B) drinking patterns; (C) damage; and Policy implications and comments
(Donnelly <i>et al.</i> , 2006); Australia, 2002	A secondary analysis of the National Crime and Safety Survey was conducted using data from 9300 survey participants from New South Wales, to investigate the relationship between AOD and perceptions of alcohol-related problems	(B and C) Multi-level modeling revealed that respondents, who lived closer to alcohol outlets and in high-density areas, were more likely to report problems in their neighborhood from drunkenness to property damage The potential impact of higher concentrations of AO on the well-being of a community should force policy makers to restrict the number of licenses granted
(Kuntsche and Kuendig, 2005); Switzerland, 2002	Aim: to investigate the relationship between AOD, perception of adolescent drinking in public (both assessed at the school level), and adolescent drinking and drunkenness at individual level. Hierarchical linear regression models were calculated based on data from 1194 ninth graders in Switzerland (mean age = 15.3, SD = 0.7) and their schoolmasters ( $n = 61$ ). Frequency of adolescent alcohol use; frequency of lifetime drunkenness; AOD; perception of adolescents drinking in public	(A) Apart from the positive main effects, the results reveal a negative interaction of AOD and the perception of adolescent drinking in public in predicting individual alcohol use among adolescents. In regions with a high AOD, it appears that the schoolmasters' perception reflects the general drinking norm of the surrounding local area rather than the actual adolescent drinking level More research is needed, particularly in Europe and among adolescent populations, in order to reach a better understanding of school-level predictors of adolescent alcohol use
(Truong and Sturm, 2007); USA, 2002–2003	Examined the relationships between alcohol environments and excessive alcohol consumption, heavy episodic drinking, driving after drinking and riding with a driver after drinking. Two surveys were utilized ( $n = 8167$ , $n = 42,044$ ), with the primary explanatory variable being types of outlet locations from the individuals residence	(A) On-sale establishments, particularly minor-restricted establishments, were significantly associated with alcohol consumption and heavy episodic drinking, after controlling for socio-demographics. Off-sale retailers were not found to be related to problem drinking Minor restricted establishments that sell alcohol illustrated the highest risk for heavy episodic drinking when located within 1 mile of individuals' residences, although these establishments account for only 6% of licenses. License regulation must be paired with comprehensive measures to solve alcohol-related problems
(Livingston <i>et al.</i> , 2008); Australia, 2003–2004	Examined individual and community level correlates of regular very high-risk drinking (>20 drinks for M and >11 for W, at least monthly) among young (16–24) drinkers, using a CATI survey of 10,879 participants	(A) One-fifth reported regular high-risk drinking. AOD was seen as a significant community-level correlate, associated with the increased prevalence of high-risk drinking Regulatory management of retail outlets should be a priority, and an ongoing focus on early intervention and prevention of alcohol is required
(Schonlau <i>et al.</i> , 2008); USA, 2004–2005	Alcohol consumption information was collected through a telephone survey of 2881 households geo-coded by neighborhood (both in LA County and Louisiana) and individual and was used to assess the relationship between alcohol availability as measured by the density of off-premise AOs and alcohol consumption	(A) AOD was not associated with the percentage of respondents who were drinkers in either site. AOD was associated with the quantity of consumption among drinkers in Louisiana but not in L.A. AOD within a one-mile buffer of the respondent's home was more strongly associated with alcohol consumption than AOD in the respondent's census tract The relationship between AOD and drinking behaviors is complex and may vary due to differences in the neighborhood design and travel patterns
(Theall <i>et al.</i> , 2008), CA and Louisiana, USA, 2004–2005	A hierarchical model was employed to examine whether AOD is associated with reduced social capital and whether this relationship is mediated by perceived neighborhood safety. $N = 2881$ from 217 census tracts	Neighborhood off-premise AOD was strongly associated with reduced social capital, and the relationship between collective efficacy and AOD appears to be mediated by perceived neighborhood safety AOD may hinder the development of social capital

M, men; W, women; AO, alcohol outlet(s); AOD, alcohol outlet density; HLM, hierarchical linear modeling; STD, sexually transmitted diseases; SD, standard deviation.

Table 2. Recent studies (2000–2008) on the impact of hours and days of sale on alcohol consumption, drinking patterns and damage

Study; place and year of study	Design/sample of study and main indicators; interventions	Findings: (A) drinking levels; (B) drinking patterns; (C) damage; and Policy implications and comments
(Chikritzhs and Stockwell, 2006); Perth, Western Australia, 1990–1997	Examined the impact of later trading hours for licensed hotels on levels of associated impaired driver road crashes and drivers' breath alcohol levels, using police data for impaired drivers involved in road crashes. Time-series analyses using multiple linear regressions were applied to determine the influence of an Extended Trading Permit (ETP); later trading hours for licensed 'hotels'	(C) Later trading levels corresponded with a significant increase in monthly crash rates. No relation was found between drivers' breath alcohol levels and ETPs. The authors found that extended trading hours were consistent with increased levels of impaired driver road crashes and alcohol consumption. This may be an indication of characteristics specific to clientele of hotels who applied for the ETP
(McMillan and Lapham, 2006); NM, USA, 1990–2000	The ARC and ARC fatality data were modeled using the classic decomposition of time series into trend and seasonal components and testing for temporal autocorrelation in the residuals. Generalized linear models and Poisson regression models were used; study determined the relative risk of alcohol-related motor-vehicle accidents and fatalities after New Mexico lifted its ban on Sunday packaged alcohol sales	(C) 29% increase in alcohol-related crashes and a 42% increase in ARC fatalities on Sundays after the ban on Sunday packaged alcohol sales was lifted. There was an estimated excess of 543.1 alcohol-related crashes and 41.6 ARC fatalities on Sundays after the ban was lifted. Repealing the ban on Sunday packaged AS introduced a public health and safety hazard in New Mexico. State legislators should consider these consequences when deciding on a policy that is intended to serve the public well-being
(McMillan <i>et al.</i> , 2007); NM, USA, 1990–2000	The goal of this study was to measure county-level variability in changes in ARC rates, while adjusting for county socio-demographic characteristics, spatial patterns in crash rates and temporal trends in ARC rates. Bayesian hierarchical binomial regression models ARC rate, socio-demographic characteristics; legalized Sunday packaged alcohol sales	(C) Results show marked variability in the impact of legalized Sunday packaged AS on ARC rates. Relative risks of an ARC for the post-repeat versus pre-repeat period vary across counties, from 1.04 to 1.90. Counties with an older population suffered a greater negative impact of legalized Sunday packaged alcohol sales. Counties with communities that quickly passed the local option to re-ban packaged sales on Sundays were able to mitigate most of the deleterious impact that increased alcohol availability had, across the state. The current study shows that this impact varies considerably across counties in New Mexico. Furthermore, the negative impact of legalized Sunday packaged alcohol sales appear to have been mitigated in counties with large communities that quickly held an election to reinstitute the ban
(Chikritzhs and Stockwell, 2002); Perth, Australia, mid-1991 to mid-1997	Examined the impact of later trading hours for licensed hotels ('hotels') on levels of violent assault on or near these premises. Levels of alcohol purchases were also examined. A time-series analysis, employing linear regression assault rates; later trading hours for licensed hotels ('hotels')	(C) There was a significant increase in monthly assault rates for hotels with late trading following the introduction of extended trading permits. This relationship was largely accounted for by higher volumes of high alcohol content beer, wine and distilled spirits purchased by late trading hotels. It is suggested that greater numbers of patrons and increased levels of intoxication contributed to the observed increase in violence and that systematic planning and evaluation of late trading licenses are required
(Vingilis <i>et al.</i> , 2005); Ontario, Canada, New York and Michigan, 1992–1998	The purpose of the study was to evaluate the road safety impact of extended drinking hours in Ontario, with a quasi-experimental design, using interrupted time series with a non-equivalent non-intervention control group to assess changes in the volume of AS in Ontario between 1989 and 1999. Total and alcohol-related monthly traffic fatalities for specific nights of the week for Ontario and compared to neighboring regions of New York and Michigan; on 1 May 1996, Ontario, Canada, amended the Liquor License Act to extend the hours of AS and service in licensed establishments from 1 am to 2 am	(A) The volume of sales in thousands of liters of beer, wine and spirits and per capita 15 years of age and over for Ontario were subjected to time-series analyses. The trends indicate that consumption of beer decreased between 1994 and 1998, while the consumption of wine and spirits decreased in the early 1990s and increased in the late 1990s (C) The blood alcohol concentration positive driver fatality trends reflected downward trends for Sunday–Wednesday 12–2 am and Thursday–Saturday 1–2 am for Ontario and downward trends for Thursday–Saturday 12–1 am and 2–3 am for New York and Michigan after the extended drinking hour policy change. Ontario total fatality data show similar movements in blood alcohol positive trends. The multiple datasets converge in suggesting little impact on BAC positive fatalities with the extension of the closing hours by 1 h. These observations are consistent with other studies of small changes in access to alcohol availability. Also, many licensed establishments choose not to change their hours of closing. It is also possible that drinking and driving rates were deflated during this time due to a number of concurrent road safety initiatives

(continued overleaf)

Table 2. (Continued)

Study; place and year of study	Design/sample of the study and main indicators	Findings: (A) drinking levels; (B) drinking patterns; (C) damage; and Policy implications and comments
(Vingilis <i>et al.</i> , 2006); Windsor, Ontario and Detroit, Michigan, 1992–1999	The design involved a comparison of the city-regions of Windsor, Ontario, and Detroit, Michigan, with a 2 am closing time, and Ontario and Michigan monthly motor vehicle casualties (major injuries and fatalities) occurring between 11 pm and 3 am for 4 years pre- and 3 years post-policy change for two city regions and Ontario and Michigan; on 1 May 1996, Ontario, Canada, amended the Liquor Licence Act to extend the hours of AS and service in licensed establishments from 1 am to 2 am	(C) In the Windsor region, a significant increase was found for alcohol-related motor vehicle casualties after the drinking hours were extended. However, the Detroit region showed a statistically significant decrease in alcohol-related motor vehicle casualties concomitant with Ontario's drinking hour extension. A significant decrease was found for injury collisions involving vehicles with Ontario license plates in the Detroit region. In areas with high densities of licensed establishments, competition may motivate licensed establishments to extend their hours of sale. One aim of the policy to extend the selling hours of licensed premises was to reduce the number of patrons who cross the border when Ontario's bars and restaurants close. This may have been achieved, but this consequence appears to be an increase in alcohol-related motor vehicle casualties in the Windsor area
(Vingilis <i>et al.</i> , 2007); Ontario, Canada, 1992–1999	To evaluate the impact of extended drinking hours in Ontario on motor-vehicle collision (MVC) and other injuries admitted to regional trauma units based on Ontario Trauma Registry data. A quasi-experimental design using interrupted time series. Monthly data on number of admissions from MVC and other causes of injury during the 11 pm–12 am, 12–1 am, 1–2 am, and 2–3 am time windows for 4 years before and 3 years after the policy change (May 1992–April 1999); extended hours of sale for licensed premises in Ontario, from 1 am to 2 am	(C) Increased availability of alcohol as a result of extension of closing hours had an impact on non-MVC injuries presented to Ontario trauma units, but road safety initiatives may have mediated the effects of the extension on MVC injuries. These observations are consistent with those of other studies that have investigated small changes in alcohol availability
(Chikritzhs and Stockwell, 2007); Perth, Australia, 1993–1997	The purpose of the study was to determine if extending trading permits in AO influenced impaired driver breath alcohol levels. Forty-three hotels were allowed later closing hours and 130 continued with the same hours and provided controls for the study. Information was obtained through police records subsequent to the lowering of the legal breath alcohol levels (BAL) limit from 0.08 mg/mL to 0.05 mg/mL in 1993 that may have changed driver consumption. Start dates of when AO were given permits for longer hours were recorded and controls were given random start dates for longer hours to maintain control groups; ETPs for licensed hotels. Control groups were randomly given start dates for extended hours in order to be comparable to hotels in which extended hours were in effect throughout the entire study	(A) Before hours were extended, hotels that were to be extended in hours purchased much less low/mid-strength alcohol content beer, wine and spirits, but similar quantities of regular content. Hotels with extended hours were more likely to have younger crowds and more likely to be W. Having extended hours at a hotel was more likely to lead to lower BAL in W but not M (showed greater levels of breath alcohol) as measured by arrests. It was believed that extended hours in hotels was related to W pacing themselves in drinking and leaving bars at least 1 h before closing time. However, it may be that fewer M were caught because there is less police patrol during the week hours of the morning. A limitation of the study may be reports of where the person last drank may be inaccurate and confound results
(Norström and Skog, 2005); Sweden, 1995–2002	Whether the increased AS spurred by the Saturday opening also led to increased rates of alcohol-related harm. The pre-intervention period covered the time period January 1995–January 2000, phase I of the post-intervention period February 2000–June 2001 (17 months), and phase II July 2001–July 2002 (13 months). Prior to Feb 2000, all alcohol monopoly outlets were closed on Saturdays. After this date, stores in an experimental area (six counties) were open on Saturdays. In the control area (seven counties), the shops remained closed. To prevent biases due to trade leakage, the experimental and control areas were separated by a buffer area (seven counties). Since continuous evaluations of the trial did not reveal any negative consequences, the Saturday opening was implemented in the whole of Sweden after 17 months. The effects of the two phases were estimated through analyses of monthly data depicting how sales and harm rates evolved in the experimental area compared to the control area during phases I and II; the extension of the Saturday opening of the alcohol monopoly shops from an experimental area to the whole of Sweden	(A) Observed: statistically significant increase in alcohol sales of 3.7% during phase I, with approximately the same increase during phase II (3.6%). (C) There were no significant changes in any of the assault indicators, neither during phase I nor during phase II. There was a statistically significant increase in drunk driving (12%) during phase I, but no change during phase II. The analyses suggested that the increase during phase I was mainly due to a change in the surveillance strategy of the police. Authors could not detect any increase in alcohol-related harm due to insufficient statistical power or other methodological complications that were highlighted in the study



- (Duailibi *et al.*, 2007); Diadema, Brazil, 1995–2005
- This study investigated whether limiting the hours of alcoholic beverage sales in bars had an effect on homicides and violence against W in the Brazilian city of Diadema (population 360,000). Log-linear regression analyses; data on homicides (1995–2005), violence against W (2000–2005); the policy to restrict AS was introduced in July 2002 and prohibited on-premise AS after 11 pm.
- (Lange and Voas, 2000); Mexico, 1997–1998
- Anonymous and voluntary breath-test surveys, conducted over a 1-year period, were administered to 5112 boarder crossers; age 18+, between 12 am and 4 am, at the San Diego, CA, and Tijuana, Mexico, boarder; the passage in 1994 of the youth-orientated zero-tolerance driving law in California; accompanied by the weakly enforced age-18 law and low liquor costs.
- (Hough and Hunter, 2008); UK, 2005
- The aim was to liberalize the rigid system while reducing the problems associated with rapid heavy drinking occurring at a standardized closing time. Qualitative interviews were conducted with 105 business owners; The Licensing Act 2003, coming into force in Nov 2005, abolished set licensing hours for pubs and clubs.
- (Newton *et al.*, 2007); London, UK, 2005–2006
- Measured the impact of new licensing laws, which permitted 24 h alcohol trading by assessing any changes in overnight attendances at the emergency department. The authors investigated 2736 patients, 16+ years, who attended in March 2005 (prior to the new licensing laws) and compared these figures to 3135 patients who attended in March 2006 (after the introduction of the new licensing laws). The attendances were examined to determine the extent to which they were related to alcohol intoxication; changes to UK licensing laws, which permitted 24-h alcohol trading.
- (Briscoe and Donnelly, 2003); Sydney, Australia, July 1998–June 2000
- This study examines the distribution of harmful outcomes across licensed premises in three inner-urban areas of NSW. Police-recorded assault incidents on licensed premises in inner Sydney, Newcastle and Wollongong over a 2-year period were analyzed.
- (Ragnarsdottir *et al.*, 2002); Reykjavik, Iceland, 1999–2000
- The city council of Reykjavik decided to initiate an experiment with unrestricted alcohol-serving hours at bars and restaurants. The consequences were evaluated in terms of crowds gathering in streets and bars in the city center and the workload of the police as well as the professionals at the emergency ward during weekend-nights.
- (C) The new restriction on drinking hours led to a decrease of almost nine murders per month. Assaults against W also decreased, but this effect was not significant in models in which underlying trends were controlled
- Restricting access to alcohol can reduce alcohol-related problems. Results did not provide any support to the converse view, that increasing availability will somehow reduce problems
- (A) The percentage of crossers with BACs >0.08 were 36.88% and 48.74%, for crossers between the ages of 18 and 20, and 21 and 25, respectively
- (A) Alcohol consumption showed a slight fall. Customers were reported as coming out later, with peak hours being pushed back. (C) No obvious impact on crime or violence
- While the majority of pubs extended their hours, most of these extensions were short
- (C) Of the overnight attendances in March 2005, 2.9% were classified as alcohol related, while in March 2006, 8.0% were classified as alcohol related. The proportion of alcohol related assaults resulting in overnight hospitalization went from 0.99% of all overnight attendances in 2005 to 1.98% in 2006; alcohol-related injuries increased from 1.61% in 2005 to 4.11% in 2006; and alcohol-related hospital admissions went from 0.88% in 2005 to 2.46% in 2006
- These findings could be used to make representations to liquor licensing authorities concerning applications for extensions of trading hours
- (C) In inner Sydney, 12% of hotels and nightclubs accounted for almost 60% of all assaults at hotels and nightclubs, in inner Newcastle 8% of licensed premises accounted for nearly 80% of all assaults on licensed premises and in inner Wollongong 6% of licensed premises accounted for 67% of all on-premise assaults. The analysis also found that assault incidents on licensed premises were concentrated late at night or early in the morning and on weekends. Licence types identified as being the most problematic for violence on licensed premises were hotels and nightclubs. In particular, hotels with extended or 24-h trading recorded a greater number of assaults compared with those trading standard hours. Of all assaults on licensed premises in inner Sydney, 56% were reported to occur between 12 am–3 am and 3 am–6 am
- The number of calls or work-tasks in the city center rose in number from 251 in 1999 to 286 in 2000 (14%). The total number of cases admitted to ER during the weekend-nights increased by 31%. The number of cases admitted to ER on Saturdays and Sundays rose by 20% but decreased by 2% during other weekdays. The numbers of cases of suspected drunk driving rose remarkably from 29 in 1999 to 52 in 2000 (80%)

ARC, alcohol-related crash; AS, alcohol sales; AO, alcohol outlet; BACs, blood alcohol concentrations; M, men; W, women.

(Gruenewald *et al.*, 2002; Weitzman *et al.*, 2003; Trollidal, 2005a; Kypri *et al.*, 2008), but most examined one or the other. In 13 studies, drinking patterns or consumption was examined and in 36 studies, damage from alcohol was the main focus or indirect focus. This distribution, strongly oriented toward damage variables, might reflect a combination of factors: interest of the investigator, funding, access to data and perception that damage is more conceptually interesting or politically powerful than findings on alcohol density and drinking levels or patterns of drinking. The results on alcohol consumption and drinking patterns are discussed together below.

*Impact on alcohol consumption and drinking patterns.* Most of these studies were cross-sectional in design, with several using time-series methodology—focusing on Norway (Norström, 2000) and Canada (Trollidal, 2005a, 2005b). The setting for most of the studies was the USA, and there were several from other jurisdictions that considered alcohol consumption and/or drinking patterns: Australia (Livingston, 2008b), New Zealand (Huckle *et al.*, 2008) and Switzerland (Kuntsche and Kuendig, 2005).

Several over-arching findings emerged with regard to alcohol consumption and outlet density. AOD was associated with a higher overall consumption in the jurisdiction (Trollidal, 2005b), frequency of drinking (Gruenewald *et al.*, 2002; Weitzman *et al.*, 2003), as well as college campus means for the average number of drinks when partying (Scribner *et al.*, 2008). A study of two US jurisdictions reported that high AOD was associated with the quantity consumed among drinkers in Louisiana, but not in Los Angeles County (Schonlau *et al.*, 2008). One study found that in regions of Switzerland with high AOD, the schoolmasters' perception reflected the general drinking norm of the surrounding area, rather than the actual adolescent drinking level (Kuntsche and Kuendig, 2005).

There is some variation in the findings on drinking patterns. A California-based study (Pollack *et al.*, 2005) reported dramatic differences in that the most deprived neighbourhoods had higher levels of AOD than the least deprived. Nevertheless, alcohol availability was not associated with heavy drinking in this study. In contrast, a US college-based study reported a significant correlation between high AOD and high-risk drinking—consuming 5+ drinks at an off-premise party. This relationship was held for sub-groups of drinkers (Weitzman *et al.*, 2003). Another US campus-based study found that high on-premise AOD was strongly related to the average number of drinks consumed while partying and the number of drinking occasions in the past 30 years (Scribner *et al.*, 2008). A study in New Zealand reported that AOD was associated with a typical quantity and approached significance with regard to frequency of drunkenness (Huckle *et al.*, 2008).

*Impact on alcohol-related problems.* Recent studies of alcohol density have examined a range of dependent variables, including high-risk drinking, problem drinking levels, drinking and driving incidents, traffic crashes, pedestrian casualties, assaults and other types of violence, sexually transmitted disease and suicide. Here also the most common design was cross-sectional. Time-series analysis is reported in two studies (Norström, 2000; Trollidal, 2005a) and several others used panel model analysis (Treno *et al.*, 2007), longitudinal data (Gruenewald and Remer, 2006) or hierarchical model (Yu *et al.*, 2008). The summary details on these 36 studies are found in Table 1, and some illustrative results are presented below, rather

than a study-by-study commentary. A general finding is that whether there are a few studies, or even one, or a number, with focus on a specific 'dependent variable', higher AOD tends to be associated with higher rates of damage, harm or problems.

These problems included, for example, alcohol-involved pedestrian collisions (LaScala *et al.*, 2001), self-reported injuries (Treno *et al.*, 2001) and suicide, alcohol-related crashes and alcohol-related crash fatalities (Escobedo and Oritz, 2002). In a longitudinal study, authors report that changes in outlet densities over time were directly related to traffic injury rates requiring hospitalization and that may or may not involve alcohol, and to crash rates where the incident was suspected by the police to have involved alcohol (Treno *et al.*, 2007).

A natural experiment study by Cohen and colleagues focused on the civil unrest in Los Angeles in 1992 and the destruction of liquor outlets; they found that a decrease in the number of alcohol outlets per mile of roadway was associated with 21 fewer cases of gonorrhoea cases per 100,000 in tracks affected by the civil unrest, compared to those not affected (Cohen *et al.*, 2006). Another focus in this literature is child abuse or neglect: Freisthler and colleagues (Freisthler *et al.*, 2004) report that the number of bars per 1000 was positively related to the rate of physical abuse of children, and that the number of bars per 1000 was positively related with the occurrence of substantial neglect, or higher rates of child maltreatment cases (see Freisthler *et al.*, 2007).

There were a number of studies that focused, specifically, on violence and AOD. For example, Gorman and colleagues found a strong association between alcohol outlets and violent crime (Gorman *et al.*, 2001). A longitudinal study by Yu and colleagues examined the relationship between civil unrest in Los Angeles in 1992, closure of alcohol outlets and crime, and these authors found that on average those census tracts that experienced more alcohol outlet closures experienced more dramatic decreases in assault rates since the closures (Yu *et al.*, 2008). McKinney and colleagues projected that an increase in 10 outlets per 10,000 population increased the risk of male-to-female partner violence by 34% and female-to-male partner violence by 12% (McKinney *et al.*, 2009).

Similar findings were reported in a longitudinal study by Gruenewald and Remer who found that an increase in the number of licensed alcohol retail establishments, especially bars and off-premise outlets, was related to an increase in violent assaults and overnight stays in a hospital (Gruenewald and Remer, 2006). They also reported that a 10% increase in the number of off-premise outlets and bars was related to increases of 1.67% and 2.06% in violence rates across local and lagged spatial areas, respectively. Every six outlets accounted for one additional violent assault that resulted in at least one overnight stay at a hospital. These effects increased with larger male populations, and were, specifically, found to double with every 3% increase in the percentage of males.

Violence was a central focus of a longitudinal study by Norström that considered 30 years of data from Norway, 1960–1995, and used police data on crimes of violence and AOD as the number of public drinking places per 10,000 inhabitants aged 15 and older, and time-series analysis techniques (Norström, 2000). This study found a positive relationship with borderline significance, between AOD and crimes of violence investigated by the police, and thus replicated findings that were reported in a number of cross-sectional studies.



Finally, a recent review complements the main aforementioned findings by expanding on some of the implications and proceeds to offer topics for future research (Livingston *et al.*, 2007). These authors hypothesize that the effects of AOD can be separated conceptually into: '(i) a proximity effect (how easily one can access alcohol); and (ii) an amenity effect (how outlets influence the quality and characteristics of surrounds within the local community)' (Livingston *et al.*, 2007, p. 561).

While both have implications for alcohol-related damage and prevention of the same, the authors point out that much of the outcome focus of the research on density has been on the first effect. They note that increased AOD has been shown to increase consumption and alcohol-related problems, and may also have a second effect; 'each new outlet potentially increases the competitive pressures on existing outlets, which may result in price reductions that tend to lead to increased levels of consumption' (Livingston *et al.*, 2007, p. 561; see also Babor *et al.* (2003)).

The amenity effects relate to the negative impacts of licensed premises on their neighbourhood. The negative consequences can include violence, street disturbances and other social problems. Licensed premises may be seen as attractors of trouble, and a bunch of alcohol outlets in the same district 'often results from crowds of young people, in various stages of intoxication, moving between outlets or spilling out onto the streets at closing time' (Livingston *et al.*, 2007, p. 561). Even if there is not a substantial increase in the density of outlets in an area, alcohol outlets can be linked to a high level or an increase in alcohol-related problems. For example, this may be the case if the licensed premises are bunched together, practice ineffective screening for legal age and level of intoxication of patrons when they enter, or are served, encourage over-service or heavy consumption through lax server intervention practices, using discount pricing to stay competitive, and are attractive to those who wish to participate in violent and other disruptive behaviors.

#### Hours and days of sale

The 15 studies that examined the impact of hours and days of sale are summarized in Table 2.

The majority focuses on damage from alcohol, and also commonly includes information on overall consumption. Within the scope of our systematic review, there are currently no studies that provide information on drinking patterns. While all of the studies did not necessarily focus exclusively on licensed premises, the economic and availability principles that underlie these general findings apply to a wide range of types of outlets, including licensed premises.

*Impact on overall alcohol consumption.* An Australian study (Chikritzhs and Stockwell, 2002) found that higher volumes of high alcohol content beer, wine and distilled spirits were purchased in the licensed hotels during late trading hours. Extended hours were also associated with young crowds, more likely to be women, and lower blood alcohol levels among women but not men (Chikritzhs and Stockwell, 2007).

A study based in Sweden examined the impact of two changes in trading days, from an experimental area to the whole of Sweden, between 1995 and 2002 (Norström and Skog, 2005). This involved Saturday openings of alcohol monopoly outlets. The authors found a statistically significant increase in alcohol

sales in both phases, 3.7% during phase I and 3.6% during phase II—the two post-intervention periods.

*Impact on damage from alcohol.* Several studies, based on natural experiments, have assessed the impact of changes in either the days of sale or the hours of sale on drinking-related damage. Those studies that focused on days of sale are examined first.

An Ontario study examined the impact of the Liquor Licence Act to extend the hours of alcohol sales and services in licensed establishments from 1 am to 2 am, and focused on the period 1992–1999 (e.g. Vingilis *et al.*, 2007). Their analyses include provincial-to-state and city-to-city comparisons, from which several findings emerged. The authors found that the extension of closing hours had an impact on non-motor vehicle injuries presented at Ontario trauma units, but road safety initiatives occurring at approximately the same time may have mediated the effects of the extension on motor vehicle collision injuries (Vingilis *et al.*, 2007). Also, an analysis of several converging data sets suggested that there was little impact on the blood alcohol concentration (BAC)-positive fatalities with the extension of closing hours, a finding that they found was consistent with other studies of small changes in alcohol availability (Vingilis *et al.*, 2005). However, when the authors looked at the adjacent cities of Windsor and Detroit, they detected a cross-border impact. A significant increase in alcohol-related motor casualties was found in the Windsor region and concurrently, significant decreases in the total and alcohol-related motor vehicle casualties were found in the Detroit region, after the closing hours of licensed premises were extended in Ontario, which includes the City of Windsor. A significant decrease was found for collisions involving vehicles with Ontario license plates in the Detroit region (Vingilis *et al.*, 2006). A reasonable explanation is that prior to the change in policy, some of the drinkers who would go to Detroit after the licensed premises closed in Windsor were now staying in the Windsor area. Thus, it appears that for some parts of Ontario, the increase in access to alcohol contributed to an increase in drinking-related problems.

The Australian study presented above found that following the introduction of extended trading hour permits, there was a significant increase in monthly assault rates for hotels with late trading hours and this relationship was largely accounted for by the higher volumes of alcohol sales (Chikritzhs and Stockwell, 2002). A subsequent study found that later trading hours corresponded with a significant increase in monthly crash rates (Chikritzhs and Stockwell, 2006).

Two studies focusing on changes in closing time in the UK were found. The Licensing Act of 2003, which came into effect in November 2005, abolished closing hours for alcohol pubs and clubs, and also permitted 24 h trading—including off-premise or package venues. Focusing on pubs, Hough and Hunter reported on the results of qualitative interviews with 105 business owners: a slight fall in alcohol consumption was reported by respondents, and they indicated that customers were coming out later with peak hours being pushed back, but no obvious impact on crime or violence was noted (Hough and Hunter, 2008).

In contrast, Newton reports on a cohort study, focusing on an increase in alcohol-related hospital attendees between 2005 and 2006 (before and after implementation of the licensing act) (Newton *et al.*, 2007). The proportion of alcohol-related assaults, which resulted in overnight hospitalization went from



a total of 0.99% to 1.98%, alcohol-related injuries went from 1.6% to 4.1% and alcohol-related hospital admissions went from 0.88% to 2.46%.

Several studies examine days of sale. In their investigation of the phased introduction of Saturday openings of government liquor stores in Sweden, Norström and Skog did not find significant changes in assault indicators during either of the two post-intervention phases. However, a significant increase in drunk driving (by 12%) was detected during phase I, with no change during the second phase (Norström and Skog, 2005).

A study based on the state of New Mexico examined the impact of allowing package sales (off-premise) on Sundays, focusing on 1990 to 2000 (McMillan and Lapham, 2006; McMillan *et al.*, 2007). Several findings emerged from this analysis. Specifically, there was an estimated excess of ~543 alcohol-related crashes and 42 alcohol-related crash fatalities per year, after the ban was lifted. There was marked variability in the impact of legalized Sunday packaged alcohol sales on alcohol-related crash rates. For example, the relative risks vary across counties, ranging from 1.04 to 1.90. Counties and communities that quickly passed the local option to re-ban packaged sales on Sundays were able to mitigate most of the deleterious impact that was associated with the increase in alcohol availability, which was observed across the state.

Finally, a study focusing on the Brazilian city of Diadema, investigated whether limiting the hours of alcoholic beverage sales in bars had an effect on homicides and violence (Duailibi *et al.*, 2007). Using the time-series analysis, the investigators found that restrictions on drinking hours led to a dramatic decrease in murders and assaults against women, specifically (Duailibi *et al.*, 2007).

## INTERPRETATIONS AND IMPLICATIONS

The studies summarized in this paper reflect a range of methods and data resources, including archival data on alcohol sales and AOD, mortality and morbidity statistics, and survey data. In some studies, a cross-sectional design is evident, while others employ a longitudinal design. There are some that involve a quasi-experimental design, such as data collected before and after an intervention, or use a comparison site or population.

Several caveats should be noted. Those with a cross-sectional design provide noteworthy findings with regard to associations between key variables, but they cannot provide a clear answer about the causal linkage or causal direction. For example, if in a cross-sectional study, alcohol consumption rates or prevalence of drinking-related problems are found to be higher in jurisdiction with a higher density of outlets, compared to those areas with a lower density, it could be that higher density stimulated an increase in alcohol consumption, or that high consumption stimulated a receptivity to more alcohol outlets and subsequent growth in density, or that both alcohol consumption and density of outlets are influenced by other factors. However, as noted in the study by Weitzman and colleagues (2003), summarized above, although it is difficult to determine the chronological order of supply and demand patterns, it is unlikely that supply, e.g. higher density of outlets, fully followed demand. In their case, both high levels of heavy episodic or binge drinking and patterns of bar and AOD had been in place for several years.

Second, the majority of these studies focus on one intervention or 'independent' variable. However, in reality, modifications in how alcohol is managed may involve concurrent or partially overlapping changes—increased marketing, lower real prices, longer hours and so on. This creates complications for isolating the impact of specific variables and interpreting the results. For example, the privatization of alcohol retailing in the province of Alberta in 1993 (Trolldal, 2005a) involved a number of concurrent or overlapping changes, such as an increase in the density of outlets, longer hours of sale, increase in the average price of higher-volume lower-priced brands and decrease in the price of higher-priced brands.

Our analysis focused on publications between 2000 and 2008. The over-arching findings are in line with earlier work on these topics as summarized in Edwards *et al.* (1994), Holder and Edwards (1995) and Babor *et al.* (2003). Furthermore, two recent publications found associations between availability of alcohol and violence among US partners (McKinney *et al.*, 2009) and between AOD and adolescent deviance (Freisthler *et al.*, 2009), which is not unexpected given the main findings from the research literature analysed in this paper. A recent publication by Stockwell and Chikritzhs (2009) noted that 11 of 14 peer reviewed papers with baseline and control measures found adverse effects from increased hours or benefits from reduced hours.

The studies from 2000 to 2008, summarized above, generally support the conclusions drawn by Babor and colleagues (2003) and Stockwell (2006) and also earlier work (Edwards *et al.*, 1994; Holder and Edwards, 1995). Babor and colleagues classified price and taxation controls, controls on hours and days of sale, and controls on AOD as being shown to be effective (Babor *et al.*, 2003). Their conclusions were based on more than a few studies and on research in several cultural settings. These interventions were among the 'top 10' interventions identified by Babor and colleagues (2003) and the findings summarized in this paper support this conclusion.

**It is noteworthy that density of outlets variable and changes in hours or days in the sale of alcohol are related to drinking levels and also drinking-related harm. As reflected in the literature in this systematic review, the impact involves a wide range of variables, populations and dimensions, including pedestrians, young children, drivers, assaults, hospitalizations and chronic problems.**

**It is clear that alcohol management has real consequences; it can stimulate consumption and contribute to an increase in alcohol-related problems or reduce alcohol-related harm. Many problems can be reduced, or partially avoided, through careful planning and a precautionary approach. It is feasible to curtail the rise in alcohol consumption and high-risk drinking, and reduce the damage from alcohol. This will require, at a minimum, three actions: that there be no further initiatives to increase access to alcohol; that the most effective interventions be implemented, reinforced and evaluated; and that health and safety experts become central contributors to policy decisions that impact alcohol management.**

In conclusion, the evidence summarized above informs the current deliberations on alcohol policy in many jurisdictions. These include those at the Canadian national level (Canadian Centre on Substance Abuse, 2007), as well as in Nova Scotia (Department of Health Promotion and Protection, 2007) and in British Columbia (Office of the Provincial Health Officer,



2008). The findings of this study are in line with the recommended actions by the WHO (2009), a document that addresses the availability of alcohol, including limits on hours and day of sale and regulations on vendor and alcohol outlet density.

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# Recommendations for Reducing Excessive Alcohol Consumption and Alcohol-Related Harms by Limiting Alcohol Outlet Density

The Task Force on Community Preventive Services

The serious toll that alcohol imposes on the population of the U.S. led the Task Force on Community Preventive Services (Task Force) to include the reduction of excessive alcohol consumption and related harms as a priority topic in its earliest planning sessions.<sup>1</sup> As the third-leading cause of preventable death in the nation,<sup>2</sup> excessive use of alcohol is a public health challenge that can be approached from many directions. The Task Force first studied and made recommendations on several ways to reduce alcohol-impaired driving.<sup>3–7</sup> It next assessed ways to reduce excessive alcohol consumption,<sup>8</sup> exploring the effectiveness of interventions to maintain limits on the days on which alcohol can be sold (recommended); increase taxes on alcoholic beverages (recommended); limit privatization of alcohol sales (insufficient evidence to determine effectiveness); enhance enforcement of laws prohibiting sales to minors (recommended); and regulate alcohol outlet density, reviewed in the accompanying article.<sup>9</sup>

## Intervention Recommendation

On the basis of the reviewed evidence, the Task Force found sufficient evidence of a positive association between outlet density and excessive alcohol consumption and related harms to recommend limiting alcohol outlet density through the use of regulatory authority (e.g., licensing and zoning) as a means of reducing or controlling excessive alcohol consumption and related harms.

A diverse group of studies of the association of outlet density with alcohol consumption and related harms indicates that when the density of on- or off-premises alcohol outlets is high or increases, the level of alcohol consumption is correspondingly high or increases, and excessive consumption and its diverse related harms occur. A smaller number of studies indicates the converse association. The validity of the causal link between outlet density and excessive alcohol consumption and its related harms is further supported by evidence from evaluations of related interventions that affect outlet density (e.g., bans or privatization of alcohol sales). On the basis of this evidence, the Task Force concludes that limiting on- and off-premises alcoholic beverage outlet density—either by reducing current density levels or limiting density growth—can be an effective means of

reducing the harms associated with excessive alcohol consumption. It may also provide additional benefits for quality of life by reducing community problems such as loitering, public disturbances, and vandalism.

## Information from Other Advisory Groups Healthy People 2010 goals and objectives

The intervention reviewed here may be useful in reaching objectives specified in *Healthy People 2010*,<sup>10</sup> the disease prevention and health promotion agenda for the U.S. The objectives most directly relevant to this review are those to reduce excessive alcohol consumption (26–11 and 26–12); reduce average annual alcohol consumption (26–12); and reduce key adverse consequences of excessive alcohol consumption (26–1, 26–2, and 26–5 through 26–8). *Healthy People 2010* also notes that excessive alcohol consumption is related to several other public health priorities, including cancer, educational achievement, injuries, risky sexual activity, and mental health.

## Surgeon General's Workshop on Drunk Driving

This workshop, held in 1988, was a multi-agency effort to address the problem of drunk driving. Recommendations were made in several areas. To reduce availability of alcoholic beverages, workshop participants included a recommendation to strengthen laws concerning hours of sale, characteristics and density of outlets, and other factors relating to retail availability of alcoholic beverages.<sup>11</sup> The workshop also recommended future research to document the contribution of location, density, and hours of sale of alcohol outlets to alcohol-impaired driving and resulting injuries and fatalities.

## Interpreting and Using the Recommendation

This recommendation can be used to support efforts by community-based and grassroots organizations to limit the density of alcohol outlets in their communities. State and local officials can use this recommendation to help enact or reform laws concerning density of outlets where alcohol is available.

Implementers may encounter barriers, including preemption laws at higher levels of government (a state law that takes precedence over and thus allows what a local law is trying to restrict) and opposition by groups whose commercial interests may be affected.

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# State Pre-Emption, Local Control, and Alcohol Retail Outlet Density Regulation

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**Abstract:** The substantial health and economic costs of excessive alcohol consumption make its reduction a major public health and economic concern. The Community Preventive Services Task Force, based on a systematic review of the research literature, concluded that restricting alcohol retail outlet density through local land use and zoning regulations is an effective strategy for reducing these costs. Yet the implementation of the Task Force's recommendation is limited by state pre-emption, which determines the extent to which states allow local government to adopt policies and enact legislation. This article summarizes the state pre-emption doctrine, its status in the 50 states pertaining to alcohol retail outlet density regulation, and findings from state legal analyses conducted in six states. Data reflect state laws in effect as of January 1, 2012. Analyses were conducted during the 2012 calendar year.

An examination of relevant state laws found five distinct pre-emption categories: exclusive state licensing, exclusive state licensing and concurrent local zoning, joint licensing, exclusive local licensing, and a mixed system. The analysis demonstrated wide variability across the states, ranging from exclusive state pre-emption to broad state delegation of authority to local governments. Pre-emption is applied differentially in many states based on retail outlet characteristics. In many cases, state pre-emption laws are ambiguous in terms of their application, leading to inconsistent and confusing court interpretations. Reforms targeting the adverse impact of state pre-emption on alcohol retail outlet density have the potential for reducing the harm associated with excessive alcohol consumption. State and local public health departments can support such reforms by implementing educational, analytic, monitoring, and technical assistance activities.

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## Introduction

Excessive alcohol consumption, including binge drinking and underage drinking, is responsible for approximately 80,000 deaths and 2.3 million years of potential life lost (YPLL) in the U.S. each year, and resulted in \$223.5 billion in economic costs in 2006, or about \$1.90 per drink, 42% of which was paid by government.<sup>1,2</sup> Reduction of excessive alcohol consumption is therefore a major public health and economic concern.<sup>3,4</sup>

One resource for addressing excessive consumption comes from the Community Preventive Services Task Force (Task Force), an independent, nonfederal, unpaid group of public health and prevention experts appointed by the director of the CDC. It conducts comprehensive, rigorous reviews of research evidence regarding the effectiveness of prevention intervention strategies.<sup>5</sup> The Task Force has recommended numerous alcohol policy

strategies for reducing excessive alcohol consumption and related harm, including the regulation of alcohol retail outlet density.<sup>6–8</sup> However, the ability of local communities to implement these *Community Guide* recommendations may be dependent on whether the state delegates the authority to regulate the sales and distribution of alcoholic beverages to local governments.

State pre-emption is the legal doctrine that determines the extent to which states allow local governments to adopt policies and enact legislation. Its complexity often creates confusion and doubt among public health practitioners and community leaders regarding implementation efforts at the state or local levels. This article (1) provides an overview of the state pre-emption doctrine; (2) reports on the status of the doctrine in the 50 states, focusing on alcohol retail outlet density regulation; and (3) summarizes the results of in-depth state legal analyses conducted in six states to analyze the variability and application of state pre-emption in specific circumstances.

## The State Pre-Emption Doctrine

The state and federal pre-emption doctrine refers to the authority of higher levels of government to

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mandate the practices of lower levels of government.<sup>9,10</sup> Local and state governments must adhere to the policies mandated at the higher levels of government and are precluded from deviating from these policies. The federal government's ability to pre-empt state and local action is limited by the U.S. Constitution, under the 10th Amendment: all authority not expressly granted to the federal government nor forbidden to the states is delegated to the states.<sup>11</sup> This includes the regulation of alcohol retail availability; the 21st Amendment, which repealed Prohibition, explicitly grants states this authority.<sup>12</sup>

States in turn can delegate some of their authority to regulate alcohol sales to local governments.<sup>13</sup> State pre-emption is the term used to describe state policies that limit this delegation of authority by prohibiting local governments from enacting controls that are stricter than state law. For example, a state law that permits alcohol retail outlets within 300 feet of a school applies the state pre-emption doctrine if the law prohibits local governments from enacting a broader distance requirement.

Pre-emption can be "express" or "implied." Express pre-emption exists when the state legislature is explicit regarding its intent to pre-empt local government action. Implied pre-emption is an imprecise concept that involves a determination of whether the state legislature's intent is to limit local action without an explicit statement to that effect. Legal commentaries and courts describe three types of implied state pre-emption: (1) "field" pre-emption, when the state legislature's statutory scheme is so comprehensive as to preclude local variation; (2) "obstacle" pre-emption, when the local law frustrates the purpose or implementation of the state law; and (3) "conflict" pre-emption, when adhering to both the state and local provisions is impossible.<sup>13–15</sup> State courts are responsible for determining legislative intent. Because of the subjective nature of the first two implied pre-emption categories, courts often reach inconsistent or contradictory conclusions, creating further confusion for public health practitioners and community coalitions.<sup>9,16,17</sup>

State pre-emption is often a barrier to public health policy and practice, particularly when the regulation of potentially dangerous products is involved.<sup>9,10,18</sup> To illustrate, many tobacco control initiatives began at the local level, including restrictions on cigarette vending machines and mandates for smokefree workplaces. In response, the tobacco industry sought state legislation to pre-empt and nullify such local initiatives.<sup>9,17,18</sup> This strategy reflects the industry's ability to influence state

legislative decisions, where their lobbying strategies are more likely to be effective than at the local level.<sup>9,16,17</sup>

### Alcohol Retail Outlet Density Regulation: An Overview

All states have developed comprehensive legal structures for regulating retail alcohol outlets. Retailers typically must obtain a license to open an alcohol retail business. Licensing laws may set conditions on the operation, location, and number of outlets and establish minimum operational standards and practices.<sup>19</sup> Some states (control states) directly operate retail stores that sell alcoholic beverages for consumption off the premises in addition to issuing licenses for privately run establishments.<sup>20</sup>

State law determines whether the state government, local governments, or both state and local governments have licensing authority. In addition, states may permit local governments to use their zoning authority to regulate alcohol retail outlets. Local zoning addresses permissible land uses and may require a land owner to obtain a use permit before engaging in specified activities on the land in question, including selling alcoholic beverages.<sup>21</sup> This is usually a local function because it requires an understanding of local conditions (e.g., will a proposed land use be compatible with surrounding land uses, create law enforcement problems, or cause undue strain on other municipal resources?).<sup>22</sup> It therefore complements state and local licensing authority but is conceptually distinct. As stated by a California court:

See  
related  
Commentary by  
Scutchfield and  
Costich in this  
issue.

The essence of zoning lies in metropolitan and regional planning; it is the use and treatment of public and private land and its appurtenances in the interest of the community as a whole. The factors and reasons that determine the imposition of metropolitan zoning are entirely different from those which control the regulation of the [production, distribution, sale and] consumption of liquor.<sup>23</sup>

Licensing and zoning authority can both be used to regulate land use and to determine the number and location of alcohol outlets in given geographic regions, referred to as alcohol retail outlet density. In general, local licensing is a more powerful tool than local zoning because it deals directly with alcohol retail outlets and evidences a state legislative intent that the state licensing scheme is not pre-emptive of local authority. Local zoning is an indirect means to regulate alcohol retail outlets and is more likely to be subject to implied "field" or "obstacle" pre-emption challenges based on state licensing statutes.<sup>16</sup>

The Task Force systematically reviewed the scientific evidence on the effectiveness of limiting alcohol retail outlet density for preventing excessive alcohol consumption and related harm.<sup>24</sup> It concluded:

On the basis of the reviewed evidence, the Task Force found sufficient evidence of a positive association between outlet density and excessive alcohol consumption and related harms to recommend limiting alcohol outlet density through the use of regulatory authority (e.g., licensing and zoning) as a means of reducing or controlling excessive alcohol consumption and related harms.<sup>7</sup>

The Task Force anticipated both state and local action to implement its recommendation. As noted above, critical to a state's alcohol retail statutory scheme is the extent to which it allows local governments to use licensing and zoning powers to regulate alcohol outlets. The state has an important role, including establishing broad guidelines and procedures that local governments must follow and coordinating enforcement efforts, but the state is not in a good position to determine whether a particular land use is appropriate for a particular location.<sup>9,10</sup> Despite the Task Force's recommendation and the importance of local authority in determining alcohol outlet density, many states have substantially restricted local control of alcohol outlet density, as discussed below.

## Legal Research Procedures

### **Scan of Pre-emption Policies and Selection of States for In-Depth Analysis**

A scan of state pre-emption policies related to the local licensing and zoning regulation of alcohol retail outlet density was conducted as of January 2011 in all 50 states using standard legal research tools and procedures.<sup>25</sup> The scan included a review of state statutes and regulations addressing local licensing and zoning authority as well as case law interpreting relevant legal provisions and local ordinances. A preliminary set of four state pre-emption categories was then developed, and states were grouped by category based on their existing pre-emption policies. (As discussed below, a fifth category was added when it was determined in subsequent analyses that some states use a mixed system of regulation.)

One state from each of the four preliminary categories was then selected on a nonrandom basis for an in-depth analysis. Nebraska was added because of the complexity and wide variation in local authority evidenced in its category. Wisconsin was added when it was determined after further analysis that Maryland did not represent the category for which it was selected. The final six states selected were California,<sup>26</sup> Georgia,<sup>27</sup> Maryland,<sup>28</sup> Nebraska,<sup>29</sup> New York,<sup>30</sup> and Wisconsin.<sup>31</sup>

The legal analyses of state pre-emption focused on the regulation of alcohol retail outlet density and included the following components: an overview of the state's pre-emption policy; detailed descriptions of state constitutional and legislative provisions regarding pre-emption; review of state court opinions determining the application of state pre-emption in particular circumstances; strategies used by community coalitions and local governments to enact alcohol retail outlet density policies at the local level that conform to state pre-emption requirements; identification and analysis of the key components of state pre-emption and its impact on local authority; and assessment of potential strategies for enhancing local control in light of the doctrine's impact in the state.

### **Survey of 50 States**

The preliminary state pre-emption categories were revised based on findings from the six-state legal analyses. Legal research was conducted in each state using the methodology described below to determine the degree of pre-emption that existed as of January 1, 2012. A lead research attorney first reviewed relevant sections of the *Liquor Control Law Reporter* (LCLR),<sup>32</sup> a summary of state and local licensing authority and local zoning powers accompanied with legal citations. Westlaw, an online legal research tool, was then used to locate laws identified by LCLR and conduct additional searches of relevant statutes, regulations, and case law.

The websites of state agencies that oversee alcohol regulation were also reviewed to clarify any outstanding issues. Following the completion of legal research by the lead research attorney, a second legal researcher reviewed the findings and categorization. In the small number of cases with divergent interpretations of the legal materials relevant to a particular state, additional research was conducted or key informants were consulted. Consensus on coding was reached in all cases.

### **Categories of State Pre-emption**

The 50-state survey resulted in a refinement of the preliminary four categories, which provide a continuum from extensive state pre-emption (Category 1) to extensive local control (Category 4). Category 5, mixed systems, was added for states that use two or more of the four categories for differing aspects of their alcohol retail outlet structure. It therefore falls out of this continuum. The categories were defined as follows:

**Category 1: exclusive or near-exclusive state pre-emption.** States in this category exclude local governments from the retail licensing process and strictly limit or prohibit the use of local land use zoning restrictions. Local governments often serve in an advisory capacity in



the state licensing process. The state does not have to accept that advice, and it prohibits local governments from imposing additional restrictions on alcohol retail outlet density through either licensing or zoning authority beyond those imposed through the state licensing process except in very limited circumstances.

**Category 2: exclusive state licensing authority, concurrent local regulatory authority.** States in this category retain exclusive authority to license alcohol outlets but allow local governments to use their local zoning and police powers to restrict certain state licensing decisions, including the imposition of substantial restrictions on the number and location of new alcohol outlets.

Additional legal research was required in most cases to differentiate states in Category 1 versus Category 2. Statutory provisions were often unclear and extensive case law research was required to determine whether implied pre-emption existed and, if so, to what extent. States with unclear statutory language and no relevant case law were placed in Category 2. **This categorization recognizes the fact that local zoning is generally considered a local prerogative independent of state alcohol licensing authority absent a clear legislative statement to the contrary.**

This category can be divided conceptually into two subcategories. In some states, local zoning powers are limited to allowing a local government to restrict where new alcohol retailers can be physically located in a city or county, an important tool for addressing alcohol retail outlet density. In other states, the zoning authority extends to regulating pre-existing retail outlets (i.e., those in existence at the time a zoning restriction is enacted, often referred to as “grandfathered” retail outlets). Restrictions on grandfathered retailers can include imposing restrictions on licensee operations (e.g., hours of operation, selling practices, nuisance abatement standards). This may be critical to reducing alcohol density because violations of the operation restrictions can lead to the closing of problem outlets. The initial coding attempted to code these two subcategories. However, the legal research was found to be too complex to accomplish this task in a reliable manner. The subcategories are therefore combined in the current analysis.

**Category 3: joint local/state licensing and regulatory powers.** In these states, alcohol retailers must obtain one license from the state and another from the municipality where they are located. This gives the primary responsibility for determining alcohol availability to local governments, subject to minimum standards established by the state. Local jurisdictions can rely on their licensing authority to regulate alcohol outlet density and may impose restrictions on both new and existing alcohol outlets. Excluded from this category are states that maintain

substantial control over the local licensing process or dictate when a municipality must issue a license. To be included in this category, states must be largely bound by the decision of a local government to refuse to issue a new license or renewal. If the local licensing authority is not autonomous in its decision making or the state can ignore local licensing decisions, then the pre-emption for that state is reported in one of the more restrictive categories.

**Category 4: exclusive local licensing with state minimum standards.** States in this category delegate licensing authority entirely to local governments and do not issue state licenses. Instead, the state establishes limitations on how that licensing authority is exercised. Excluded from this category are states that maintain substantial control over the local licensing process or dictate when a municipality must issue a license. If the local licensing authority is not autonomous in its decision making, the pre-emption for that state will be reported in one of the more restrictive categories. Maryland, for example, has local boards that issue licenses, but in most cases the boards’ decisions are strictly limited by state requirements.<sup>28</sup>

**Category 5: mixed.** The remaining states use a combination of one or more of the four categories based on types of alcoholic beverages (e.g., joint licensing for beer and wine and state exclusive authority for distilled spirits) or type of alcohol outlet (e.g., one category for on-premises establishments and another for off-premises establishments).

The classification of states into pre-emption categories was based on how the states approach the licensing of major categories of alcohol retail outlets. Licensing provisions related to specialized establishments (e.g., special licenses for airplanes and trains, businesses in tourist areas that operate only during tourist seasons, clubs, and tasting rooms) were not considered for the analysis. In some cases, states differentiate between types of local jurisdictions (e.g., cities versus counties) or provide differing rules based on the size of the population within the local jurisdictions. For these states, the classification was based on the licensing rules that affected the largest portion of a state’s population.

## Results of Survey

### Variation in Application of State Pre-Emption Doctrine

There is substantial variation in the degree to which states authorize local governments to regulate alcohol retail outlet density. Eight states are included in Category 1 and have exclusive or near-exclusive state pre-emption, and 16 states have exclusive state licensing but allow local governments at least some zoning authority and



**Table 1.** State pre-emption categories by state,<sup>a</sup> as of January 2012

<b>Category 1: Exclusive/near exclusive pre-emption (8 states)</b>	
Arizona, Delaware, Kentucky, New Hampshire, New York, North Carolina, <sup>b</sup> Oregon, <sup>c</sup> and Washington	
<b>Category 2: Exclusive state licensing and concurrent local zoning (16 states)</b>	
Alaska, California, Connecticut, Florida, Indiana, Iowa, Kansas, Maryland, <sup>d</sup> Montana, Nebraska, New Mexico, Ohio, Oklahoma, Pennsylvania, South Carolina, and Virginia	
<b>Category 3: Joint local and state licensing (9 states)</b>	
Arkansas, Colorado, Georgia, Idaho, Illinois, Louisiana, Massachusetts, North Dakota, and Utah	
<b>Category 4: Exclusive local licensing (8 states)</b>	
Hawaii, Minnesota, <sup>e</sup> Nevada, New Jersey, Rhode Island, South Dakota, Wisconsin, and Wyoming	
<b>Category 5: Mixed (9 states)</b>	
Alabama . . . .	Beer, wine: Concurrent local zoning. Spirits: Joint licensing.
Maine . . . . .	Off-premises: Exclusive state licensing. On-premises: Joint licensing.
Michigan . . . .	Off-premises: Exclusive state licensing. On-premises: Joint licensing.
Mississippi . .	Spirits, wine: Exclusive state pre-emption. Beer: Concurrent local zoning.
Missouri . . . .	Off-premises: Exclusive state licensing. On-premises: Joint licensing.
Tennessee . .	Spirits, wine: Joint licensing. Beer: Local licensing.
Texas . . . . .	Off-sale and on-sale restaurants: Exclusive state licensing. On-sale bars (75% or more revenue from alcohol): Concurrent local zoning.
Vermont . . . .	On- and off-sale beer and wine: Joint licensing. On-sale spirits: Concurrent local zoning. (Off-sale spirits: State operated)
West Virginia	Spirits, wine: Exclusive state licensing. Beer: Joint licensing.

<sup>a</sup>Legal citations provided on request to the corresponding author

<sup>b</sup>Local boards may operate municipally operated off-premises retail outlets.

<sup>c</sup>Local governments may regulate “nuisance aspects” of alcohol retail outlets.

<sup>d</sup>Local boards have licensing authority; however, the state appoints local board members in most cases.

<sup>e</sup>State commissioner approves issuance of licenses.

therefore fall into Category 2. Seventeen states grant local governments licensing authority: Nine states have joint state and local licensing (Category 3), and Eight states have exclusive local licensing (Category 4). The remaining nine states have mixed systems (Category 5; Table 1.)

Each state has its own particular mix of local/state powers that operate within this broader categorization. States frequently establish narrow exceptions to otherwise broad local authority. Although Wisconsin has exclusive local licensing, it pre-empts local governments from regulating various practices, including hours of sale of certain retail outlets, the age of servers at grocery stores, and beer tastings at gas stations.<sup>31</sup> Georgia, which has joint state and local licensing, prohibits local governments from regulating the age of adult entertainers or security staff in licensed establishments.<sup>27</sup> In California, which has exclusive state licensing, localities can regulate the location, number, and operating practices of new retail outlets through local zoning ordinances.<sup>26</sup> The authority to regulate new outlets through local zoning ordinances, however, does not extend to the regulation of concurrent

sales of alcohol and gasoline. New York, with its broad pre-emption provisions, still allows localities to regulate the location of retail outlets with adult entertainment.<sup>30</sup>

### The threat of litigation based on state pre-emption issues can be a substantial barrier to the implementation of effective alcohol retail density regulations

The uncertainty and ambiguity inherent in the state pre-emption doctrine can pose a legal barrier: the threat of pre-emption-based legal challenges by retail licensees, which can undermine the development of local alcohol retail outlet density regulations. The Nebraska legal analysis provided the clearest example of this general phenomenon. Prospective retail licensees successfully challenged local regulation of concurrent alcohol and gasoline sales, which convinced local governments to largely abandon their local land use authority over alcohol outlet retail density. The cities of Omaha and Lincoln in Nebraska recently revisited this

issue, and a legal report analyzing local powers over land use is prompting them to consider new land use controls that might facilitate more local control over alcohol outlet density.<sup>29</sup>

### Important new local land use powers can be developed without state legislation even in states with broad state pre-emption

The California legal analysis illustrates this critical finding. Until 1992, it was broadly accepted that “grandfathered” alcohol retail outlets were beyond the reach of local regulation. Oakland challenged this assumption, and proposed an ordinance that regulated public nuisance activities associated with alcohol sales.<sup>26</sup> The city required retailers to obtain a “deemed approved” permit. If the public nuisance provisions were violated, the city could fine the retailer, suspend the permit, or revoke it and force the business to close. Oakland imposed a fee on alcohol retailers to defray the costs of implementing and enforcing the ordinance.

Retailers challenged the ordinance, arguing that the state constitution vests exclusive power at the state level to regulate the sale and distribution of alcohol. The court disagreed, reasoning that the ordinance did not regulate the sale of alcohol but only the public nuisance activities associated with it, a proper role for local land use and safety regulation.<sup>33</sup> At least 11 cities have followed Oakland’s lead, with Omaha NE considering a similar ordinance based on the same principles.<sup>26</sup>

### Legal technical assistance is critical to addressing state pre-emption issues and promoting effective local regulation of alcohol outlet retail density

As illustrated in the Nebraska legal analysis, city attorneys tend to be conservative in their assessment of local powers, in part because they need to limit their cities’ risk of litigation.<sup>29</sup> By contrast, the retail industry’s legal stance is likely to be well communicated, and be accompanied by the threat of litigation. Community coalitions and public health departments must be prepared to counter these arguments with credible legal analyses.

## Discussion

As documented in the 50-state survey, states differ substantially in their approach to state pre-emption as it applies to alcohol retail outlet density regulation. Some states delegate substantial authority to local governments through local licensing and/or zoning powers, whereas others exclude them from the regulatory process. Only nine states have joint state and local licensing, the

structure that explicitly provides minimum state standards while allowing for substantial local control.

To our knowledge, the four primary categories of state pre-emption, ranging from exclusive or near-exclusive state pre-emption to exclusive local licensing with state minimum standards, which developed out of the state legal analyses, have not been previously reported. They should serve as a useful starting point for informing public health practitioners and community coalitions about the legal environment that exists within their state pertaining to the regulation of alcohol outlet density. The state legal analyses reveal that states may apply the doctrine differentially based on the type of alcohol outlet and retail practice, emphasizing the need for public health agencies and community coalitions to obtain legal technical assistance to assess how state pre-emption is applied in practice.

The state legal analyses demonstrate the adverse effect that state pre-emption can have on efforts to implement *Community Guide* recommendations regarding alcohol retail outlet density. Local governments are critical players in the implementation process, yet many states relegate them to an advisory role. Even in states that delegate alcohol licensing and zoning authority to local authorities, state pre-emption can be used to undo local regulatory reforms.

The doctrine’s complexity serves as an additional barrier to regulating alcohol outlet density. City attorneys and retailers may argue that a proposed local reform is pre-empted even when a strong case can be made to the contrary. This phenomenon has been well documented in the context of tobacco control.<sup>17</sup> The state legal analyses suggest that state and local public health departments and community coalitions not familiar with state pre-emption may be deterred from supporting reforms when faced with a state pre-emption challenge.

State and local public health departments can play an important role in informing discussions regarding the public health impact of excessive alcohol consumption, the *Community Guide* recommendations to address it, and the role of local land use powers to implement those recommendations. The findings here suggest that the departments should include a focus on the state pre-emption doctrine as part of its educational and technical assistance efforts. This should include (1) monitoring state policies and new legislation related to state pre-emption, and informing the public about the potential impact of state pre-emption on local alcohol control policies involving the prevention of excessive drinking; and (2) establishing clearinghouses or legal technical assistance centers at state and local levels to assist practitioners in understanding the topic in their jurisdictions.



State pre-emption can be a formidable barrier to the implementation of the *Community Guide* recommendation on regulating alcohol retail outlet density. Public health constituencies need to become familiar with this complex legal topic to ensure that their efforts to implement this recommendation operate within the legal parameters that are established by state laws, while also continuing to monitor the impact of changes in this legal structure on the implementation of this and other *Community Guide* recommendations over time. Research is also needed to assess the impact of differential levels of state pre-emption across the states on public health outcomes, including rates of alcohol-related trauma, violence, and neighborhood disruption.

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# STRATEGIZER 55



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## Regulating Alcohol Outlet Density

*An Action Guide*

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## INTRODUCTION

*Excessive alcohol consumption is a major public health problem, which is significantly affected by the physical availability and cost of alcoholic beverages.*



One of the most effective approaches for reducing excessive drinking and its many health and social consequences is to limit the physical availability of alcohol.

One approach to doing so is regulating alcohol outlet density, or the concentration of retail alcohol establishments, including bars and restaurants and liquor or package stores, in a given geographic area. A high concentration of alcohol outlets leads to a variety of serious health and social consequences, including violence, alcohol-impaired driving, neighborhood disruption, and public nuisance activities. Fortunately, there are strategies proven to work to regulate the number of places that sell or serve alcohol, and many states and communities across the country are mobilizing to address this public health issue. This Action Guide provides public health departments, community coalitions, and other organizations with an introduction to the health and social problems associated with alcohol outlet density and an overview of available evidence-based community prevention strategies for addressing this environmental risk factor. State and local public health departments, in particular, have an important opportunity to demonstrate leadership in reducing the consequences resulting from alcohol outlet density and thus improve community health and well-being.

### BACKGROUND AND PURPOSE

*Excessive Alcohol Consumption is a Public Health Issue*

Excessive alcohol consumption includes both binge drinking, defined by the National Institute on Alcohol Abuse and Alcoholism as five or more drinks on one or more occasions for men and

### CASE STUDY

*Improving Community Health by Reducing Alcohol Outlet Density in Vallejo, California*

In the mid-1990's the city of Vallejo, in Northern California, determined there were significant alcohol outlet-related health and safety issues occurring in the community. Vallejo at this time had a population of nearly 110,000 and just over 200 total alcohol outlets, including both on- and off-premise locations. An analysis using Geographic Information System (GIS) mapping of police calls for service data and State Alcoholic Beverage Control licensee data conducted by an outside evaluator revealed greater calls for service including fights, sexual assaults, public intoxication, drinking and driving, loitering, and other nuisance problems in areas of higher alcohol outlet density.

Adoption of new land use and nuisance abatement policies produced two significant outcomes:

- Between 1994 and 2004 the total number of alcohol outlets declined from 205 to 170 – an 18% decline.
- From March through December of 1998 there were 2373 alcohol outlet related nuisance police calls for service. From January to October of 1999, the number fell to 1139 – a 53% reduction.

(Unpublished data from Vallejo Fighting Back Partnership.)



four or more drinks on one or more occasions for women, and any drinking among underage youth or women who are pregnant. Excessive drinking causes approximately 79,000 deaths per year in the United States, making it the third-leading cause of preventable death in the nation.<sup>1</sup> More than half of the alcohol consumed by adults in the United States and about 90% of the alcohol consumed by youth under the age of 21 is in the form of binge drinks.<sup>1</sup> <sup>2</sup> Although many think binge drinking is limited to underage youth and college students, 70% of binge drinking episodes involve adults aged 26 years and older. Binge drinking is also most common among men, whites, 18-34 year olds, and people with household incomes greater than \$50,000.<sup>1</sup>

...alcohol outlet density is the concentration of retail alcohol establishments, including bars and restaurants and liquor or package stores, in a given geographic area.

This dangerous behavior can lead to a range of health and social problems, including unintentional injuries (e.g., automobile crashes and drowning), interpersonal violence, HIV infection, unplanned pregnancy, alcohol poisoning, and Fetal Alcohol Spectrum Disorders.<sup>3</sup> Over time, excessive alcohol consumption increases the risk of alcohol dependence, cancer, and high blood pressure, among other chronic conditions.<sup>4</sup> Underage youth who binge drink are also at additional risk of poor school performance and interrupted brain development.<sup>5</sup>

Alcohol use at younger ages is also associated with increased risks of alcohol problems including alcohol dependence later in life.<sup>6</sup> However, over 80% of adult binge drinkers are not alcohol dependent.<sup>7</sup>

Taken together, problems resulting from excessive alcohol consumption constitute a major public health problem for individuals, families, communities, and society at large. They also create huge economic costs—the direct and indirect costs of excessive alcohol consumption in 1998 were estimated to be \$184.6 billion.<sup>8</sup> The reduction of excessive alcohol consumption is therefore a matter of major public health and economic concern.

*The Guide to Community Preventive Services (The Community Guide)*

Reducing excessive alcohol consumption requires implementation of effective public health solutions. To strengthen the scientific basis for the prevention of excessive alcohol consumption, including binge drinking, the Alcohol Program in the Centers for Disease Control and Prevention (CDC) has been working with the Guide to Community Preventive Services (the Community Guide) to review systematically all available scientific evidence on the effectiveness of public health strategies for preventing excessive alcohol consumption and related harms. Several policy interventions—including increasing alcohol excise taxes, regulating alcohol outlet density, and dram shop liability—have been reviewed and were subsequently recommended by the independent, non-federal Task Force for Community Preventive Services (Table 1). Summaries of these reviews can be found on the Excessive Alcohol Consumption topic page on the Community Guide website ([www.thecommunityguide.org/alcohol](http://www.thecommunityguide.org/alcohol)).



**TABLE 1:**  
**Community Guide-Recommended Strategies for**  
**Preventing Excessive Alcohol Consumption and Related Harms, April 2011**

Regulation of alcohol outlet density	RECOMMENDED
Increasing alcohol taxes	RECOMMENDED
Dram shop liability	RECOMMENDED
Maintaining minimum legal drinking age (MLDA) Laws	RECOMMENDED
Maintaining limits on hours of sale	RECOMMENDED
Maintaining limits on days of sale	RECOMMENDED
Enhanced enforcement of laws prohibiting sales to minors	RECOMMENDED
Privatization of retail alcohol sales	RECOMMENDED AGAINST

*The Role of State and Local Public Health Agencies in Implementing Strategies Recommended by the Community Guide*

State and local health departments are uniquely positioned to take a leadership role in implementing the Community Guide recommendations on the prevention of excessive alcohol consumption and related harms, including regulation of alcohol outlet density, the topic of this Action Guide. For example, health departments generally focus on health in populations, and are thus familiar with prevention strategies that may involve policy change. They also have specific expertise relevant to the implementation process, including:

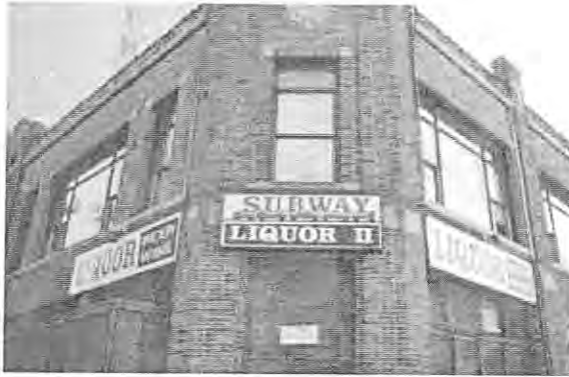
- Expertise in public health surveillance and evaluation methods;
- Experience working on related issues (e.g., tobacco control and injury prevention);
- Ability to develop multi-sector efforts that effectively

network, convene, and provide technical assistance to other organizations;

- Ability to oversee a strategic planning, implementation, and evaluation process; and
- Ability to develop and implement policy-based initiatives.

As discussed later in this Action Guide, implementing alcohol outlet density regulations requires active public health surveillance, including the systematic collection, analysis and interpretation of data documenting the number, location, and concentration of alcohol outlets; and the connection between alcohol outlet density, alcohol-related behaviors, and the health of communities and their residents. State and local health departments employ epidemiologists with expertise in public health surveillance, and a growing number of states are specifically hiring alcohol epidemiologists with the subject matter expertise to work with public health programs and community coalitions to perform these assessments.





State and local public health departments are also well-positioned to coordinate and convene state and local efforts to address excessive alcohol consumption, including strategic planning and program planning, implementation, and evaluation relative to the regulation of alcohol outlet density.

They also have experience leading other community health promotion initiatives on tobacco control and promoting healthy eating and active living, while collaborating with state and local coalitions. For example, hundreds of Healthy Community coalitions have formed across the United States, and are helping to create community environments that help people make healthy choices. The public health sector has a similar role to play in changing the environment in which people make their drinking decisions. By working with community coalitions and other partners, health departments can support the implementation of Community Guide-recommended strategies for preventing excessive alcohol consumption, including regulating alcohol outlet density, and thus help to transform communities so that excessive drinking is the exception, not the rule. This Action Guide is designed to facilitate the active engagement of health departments in this community transformation process, so that they can, in turn, help empower communities to determine the number of retail alcohol outlets that operate within their borders.



### *Purpose of the Action Guides and Intended Audiences*

CADCA and the Center on Alcohol Marketing and Youth (CAMY) at the Johns Hopkins Bloomberg School of Public Health have developed “Action Guides” (“tools for community action”) as a resource to assist state and local public health departments and communities in planning, implementing, and evaluating prevention strategies recommended by the Community Guide. In so doing, they support evidence-based public health practice and promote collaboration between state and local public health departments, community coalitions, and other key partners at the state and local levels.

This Action Guide supports community efforts to reduce the number of places that sell and serve alcohol by providing information and guidance on implementing public health and legal strategies. Although state and local public health departments are the primary audience for this Action Guide, it is also intended to support the work of community coalitions on the prevention of excessive alcohol consumption, and to help build collaboration between these coalitions and public health agencies in achieving this shared objective. There are more than 5,000 community anti-drug coalitions across the country, many of which focus on the prevention of excessive alcohol consumption, including underage drinking and binge drinking. Community coalitions primarily operate at the local level and thus can actively support regulations addressing alcohol outlet density. Furthermore, a number of community coalitions are already working closely with public health departments, applying their expertise in community organizing to support the implementation of evidence-based alcohol control strategies.

## PART TWO

### *Community Guide Findings on Alcohol Outlet Density*



Based upon a systematic review of more than 88 scientific papers, the Task Force on Community Preventive Services concluded that “greater outlet density is associated with increased alcohol consumption and related harms.”<sup>9</sup> Specific findings included:

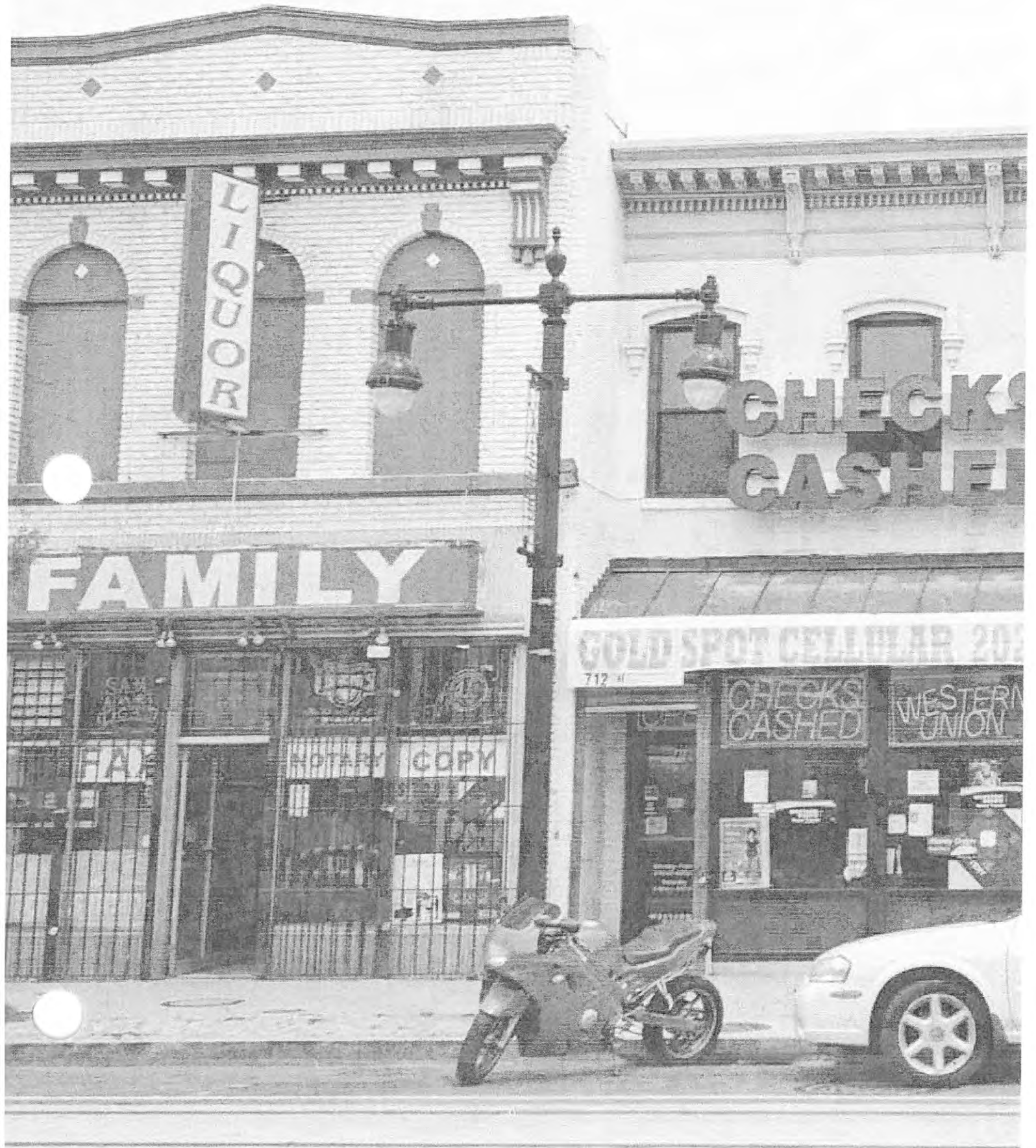
- State and local alcohol outlet density-related policy changes that increase alcohol outlet density and alcohol availability (including allowing sales of new beverages) can significantly increase alcohol consumption and related problems;
- Privatizing alcohol sales in Control States (additional description of Control States can be found in the section on “off-premise locations” below) increases the number of retail alcohol establishments;

- Re-monopolization, or when governments regain monopoly control over the retail sale of alcohol, decreases alcohol availability by reducing the number of alcohol outlets;
- Bans on alcohol sales (e.g., studies of dry counties) can substantially reduce excessive alcohol consumption and related harms, although their effectiveness is dependent on the availability of alcohol in surrounding areas.

Based on these findings, the Task Force made the following formal recommendation:<sup>10</sup>

“...the Task Force found sufficient evidence of a positive association between outlet density and excessive alcohol consumption and related harms to recommend limiting alcohol outlet density through the use of regulatory authority (e.g., licensing and zoning) as a means of reducing or controlling excessive alcohol consumption and related harms.”

“...the Task Force on Community Preventive Services found sufficient evidence of a positive association between outlet density and excessive alcohol consumption and related harms to recommend limiting alcohol outlet density through the use of regulatory authority (e.g., licensing and zoning) as a means of reducing or controlling excessive alcohol consumption and related harms.”



LIQUOR

FAMILY

SALE

FAX

NOTARY

COPY

CHECKS CASHED

WESTERN UNION

GOLD SPOT CELLULAR 200

712



## PART THREE

### *Building the Case for Regulating Alcohol Outlet Density*



#### A. WHAT IS ALCOHOL OUTLET DENSITY?

The Guide to Community Preventive Services defines alcohol outlet density as “the number of physical locations in which alcoholic beverages are available for purchase either per area or per population.”<sup>9</sup> “Alcohol outlets” includes all commercial businesses that sell and serve alcohol.

“On-premise locations,” or as some states refer to them, “on-sale outlets” are establishments where the consumption occurs on the premises. They include:

- **Bars.** Establishments where alcohol may be consumed on-premises, and whose primary function is the sale of alcohol with little or no food service. Some states also allow bars to sell alcohol for consumption off-premises.
- **Restaurants.** Establishments where alcohol may be consumed on-premises, and whose primary function is the sale of food with alcohol as a secondary product.
- **Clubs.** Establishments that serve alcohol and food for consumption on-premises to members, but which are not open to the public.

Although conceptually distinct, in practice, these establishments may share some common characteristics. For example, many restaurants have free-standing bars, and in fact, may transform into a bar during late hours. Some clubs have membership rules that promote easy access to the general public.

Off-premise locations, or “off-sale outlets,” sell alcohol for consumption off the premises. They include:

- **Liquor stores.** Retail outlets where alcohol is the primary product for sale. Some states refer to them as package stores.

- **Grocery stores.** Large markets that are primarily in the business of selling food, but often devote substantial floor space to selling alcohol.
- **Convenience stores/mini-marts/gas stations.** Small stores often located in or near residential areas. They have less floor space for alcohol than grocery stores, but alcohol typically accounts for a much larger share of their overall sales.
- **Big box/warehouse/discount stores.** Very large, multi-product, discount retail stores that often have substantial floor space for alcohol.

State laws will dictate which specific types of alcoholic beverages may be sold in which types of alcohol outlets, but beer and wine are usually the most widely sold alcoholic beverages. In contrast, distilled spirits are usually sold by a relatively small subset of alcohol retailers, such as bars and liquor stores.

#### Control States

There are 18 **Control States**, where the state itself sells alcoholic beverages in off-premises, retail or wholesale settings. All of these 18 Control States were organized after Prohibition and all originally operated off-sale retail “state stores,” in some cases to the exclusion of private retailers. (No Control State operates on-sale premises.) There has been



*18 states have state-run alcohol retail or wholesale operations*



a gradual trend to privatize alcohol sales in these states, and privatization often leads to higher alcohol outlet density.<sup>9,11</sup> Some states have entirely divested themselves of their state stores, while others have turned over at least some sales to private vendors, particularly beer and wine sales. Distilled spirits are most likely to be found in state stores. The extent to which states retain control of various aspects of the retail sale of alcohol determines, at least in part, the level of alcohol outlet density. When a state creates systems that allow private market-driven structures of retail availability, communities experience higher levels of alcohol outlet density.

States vary widely in the specific mix of alcohol outlets. All states use licensing as a means of regulating the specific mix and number of each type of alcohol outlet. The alcohol retail environment is constantly changing, and there is ongoing economic pressure to expand the types and numbers of locations where alcohol is sold and served. These economic factors, coupled with each state's licensing structure and the extent to which cities and counties may exercise local regulatory authority over on- and off-premise outlets, help shape the alcohol outlet density landscape in a given community. These governmental control mechanisms are described in more detail later in the guide.

## **B. FACTORS THAT MAY AFFECT ALCOHOL OUTLET DENSITY LEVELS AND CONTRIBUTE TO RELATED HEALTH AND SOCIAL PROBLEMS**

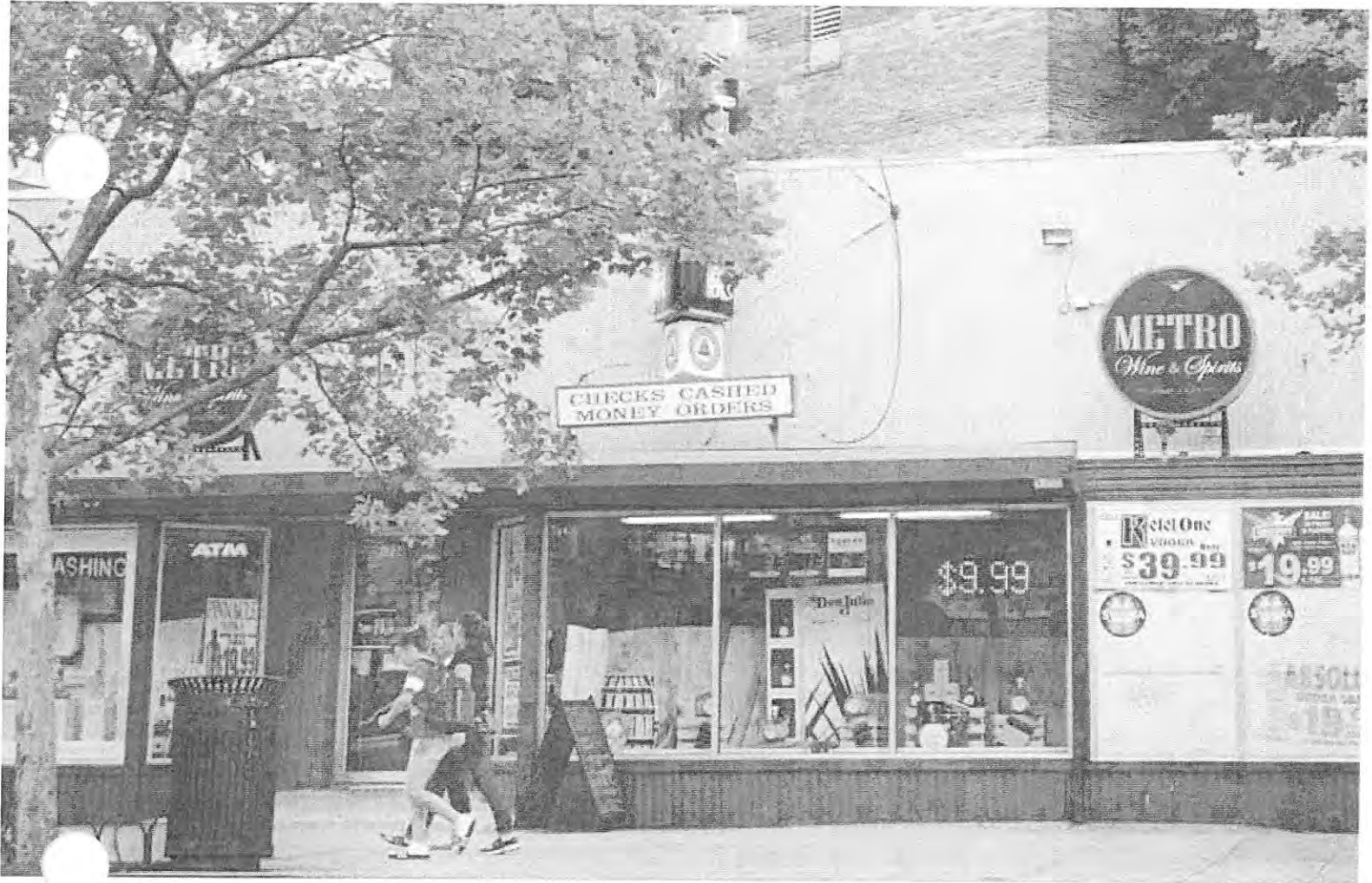
The Task Force recommendation provides a starting point for public health departments and community coalitions seeking to reduce excessive alcohol consumption and related harms by regulating alcohol outlet density. However, the Community Guide

### **7 FACTORS THAT MAY AFFECT ALCOHOL OUTLET DENSITY**

- 1. Outlet size/sales volume**
- 2. Clustering**
- 3. Location**
- 4. Neighborhood environmental factors**
- 5. Size of the community**
- 6. Number and types of alcohol outlets**
- 7. Illegal behavior**

review identified at least seven factors that may influence the impact that alcohol outlet density has on alcohol consumption and harms:<sup>9</sup>

- 1. Outlet size/sales volume:** The physical size of a retail premise or the volume of its sales.
- 2. Clustering:** Geographic areas with numerous alcohol outlets located in close proximity to one another may pose greater community risks than having outlets more geographically dispersed. For example, many cities have tried to revitalize dying downtown areas by creating "entertainment districts" that include a high concentration of bars and restaurants. These may devolve into areas with high levels of alcohol-involved violence, public intoxication, and other nuisance behaviors.
- 3. Location:** Placing alcohol outlets close to "sensitive land uses" including parks, places of worship, schools, and other locations where young people are may pose significant risks.
- 4. Neighborhood environmental factors:** The specific characteristics of the communities where alcohol outlets are located can influence the risk of excessive alcohol consumption and related harms.



For example, college communities with high numbers of young adults and large numbers of alcohol outlets may create unusually high risks of public health problems. Low income communities often have an overconcentration of off- and on-premise outlets and a scarcity of grocery stores and other important retail businesses. Complex economic, social, and political factors contribute to this phenomenon, which may engender community crime and disruption,<sup>13</sup> as well as problematic alcohol consumption among residents.<sup>14</sup>

**5. Size of the community:** The physical size of a community may affect the total number of alcohol outlets and their proximity to one another. For example, in large rural areas where alcohol outlets are spaced far apart, alcohol outlet density may be better considered in terms of total outlets per population than how closely they are located to one another.

**6. Number and types of alcohol outlets:** As suggested in the previous section, there is an array of alcohol outlet types and they may pose differing levels of risk.<sup>15</sup> For example, many cities treat small restaurants without stand-alone bars differently from those with full service bars, based on their experience that the former create fewer problems than the latter.

**7. Illegal behavior:** Some alcohol outlets serve as magnets for crime and violence. For example, community members in inner city communities have expressed concern that high concentrations of off-premise outlets are associated with crimes such as loitering, street-level drug dealing, gambling and sales to minors.

In addition, local regulation of the hours and days when alcohol outlets may be open can also influence the degree of problems a community faces due to alcohol outlet concentration.<sup>16</sup>





## C. USING DATA TO MAKE YOUR CASE

State and community efforts to regulate alcohol outlet density should begin with robust public health surveillance on excessive alcohol consumption and related harms. These surveillance activities would also include measurement of alcohol outlet density in local communities. As previously noted, state and local health departments are well-positioned to lead these measurement activities because of their expertise in epidemiology, including the development of measurement tools for assessing population health status, and their expertise in assessing environmental factors, such as alcohol outlet density. A growing number of states are also specifically hiring alcohol epidemiologists with expertise in the assessment of excessive alcohol consumption and related harms, who can work with public health programs and community coalitions to measure excessive alcohol consumption and the community factors and policy environments that contribute to it, such as alcohol outlet density.

### *Measuring Excessive Alcohol Consumption*

Working in collaboration with the Council of State and Territorial Epidemiologists (CSTE) and the National Association of Chronic Disease Directors (NACDD), CDC has developed a cross-cutting set of Chronic Disease Indicators (CDIs) to help guide state and local public health surveillance on a number of chronic conditions and their risk factors, including excessive alcohol consumption, which

### Examples of Geographic Units

- Census Tracts
- Block Groups
- Police Beats
- Zoning Districts
- ZIP Codes
- Downtowns
- Redevelopment Areas
- City/County Boundaries

are available at: [www.cdc.gov/nccdphp/cdi](http://www.cdc.gov/nccdphp/cdi). The alcohol-related measures, including binge drinking among adults and among youth, provide a good starting point for public health surveillance on excessive alcohol consumption and related harms. More specific measures of binge drinking, such as the frequency (i.e., number of binge drinking occasions) and intensity (i.e., number of drinks per binge) of binge drinking episodes, can also help define the public health

problem of excessive alcohol use in states and communities. These data can be used to communicate the need for evidence-based prevention strategies, including regulating alcohol outlet density, and they provide valuable information for evaluating the effectiveness of strategies to reduce alcohol outlet density.

### *Measuring Alcohol Outlet Density*

Although there is great diversity in the types of alcohol outlets and the products they sell, all are part of the alcohol outlet density mix. Measuring alcohol outlet density involves analyzing the number and location of the outlets, which can be expressed in terms of a reference measure that can include a land area; the population of a given area; or a linear measure, such as highway miles. Geographic units commonly used to measure alcohol outlet density include those listed in the box above. There is no standard land area in which density is measured.

There are a number of methods that can be used to assess alcohol outlet density by geographic area,



total population or by using some combination of the two. Examples of possible measures for alcohol outlet density are in the box to the right. The challenge for public health departments and others seeking to describe and analyze a alcohol community's outlet density is to select the appropriate measure for a particular geographic region. This is best done in consultation with an alcohol epidemiologist and someone with expertise in mapping and spatial analysis techniques, including the use of geographic information systems (GIS).

For example, assume that a suburban community of 15 square miles and a population of 50,000 has 150 alcohol outlets, with 30 of the outlets located in its eight-block downtown area and the remainder scattered throughout the rest of the community's geographic area. One appropriate alcohol outlet density measure in this case is the number of alcohol outlets per block group. The "per block group" measurement might be augmented with an examination of the number of alcohol outlets per police beat. Density can also be described by the number of alcohol outlets per population. In this example, the alcohol outlet density would be one outlet per 333 people. In general, this is a less precise and useful measurement. A rural community would need to develop a different set of measures from those used by a large city because population distributions in rural communities may have to take into account large unpopulated areas. A third method is to compute the number of alcohol outlets per road mile, either for the entire community as a whole, or for each sub-area within the community (e.g., for each block group). The important point is that measuring alcohol outlet density must take

into account the particular circumstances of each geographic region.

In addition to assessing alcohol outlet density, states and communities may also want to assess alcohol-related harms that may be associated with alcohol outlet density, particularly at higher levels. These harms can include alcohol-impaired driving, alcohol-related motor vehicle crashes, and alcohol-related crash injuries as well as alcohol-related crime and violence, including, but not limited to, fights, intimate partner violence, sexual assaults, and child maltreatment. Police calls for service and place of last drink

### Examples of Alcohol Outlet Density Measures

- Outlets per population
- Outlets per land area
- Outlets per road mile

data can also be useful measures for making a case for action in a particular geographic area. Alcohol epidemiologists in health departments can also help community leaders to assess the availability of data on these alcohol-related outcomes, and identify ways to assess the potential link between alcohol outlet density and related harms.

It is also worth noting that there may be incidents of illegal alcohol sales to minors and illegal service to intoxicated patrons that are associated with "hot spots" or entertainment districts. Measurement issues related to the assessment of harms associated with illegal beverage service will be addressed in a subsequent Action Guide on Dram Shop Liability.

### *Using GIS Mapping*

Geographic Information System (GIS) mapping enables researchers to understand, manage, question, interpret, and visualize data in many ways that reveal relationships, patterns, and trends. GIS maps, reports, and charts have become an indispensable

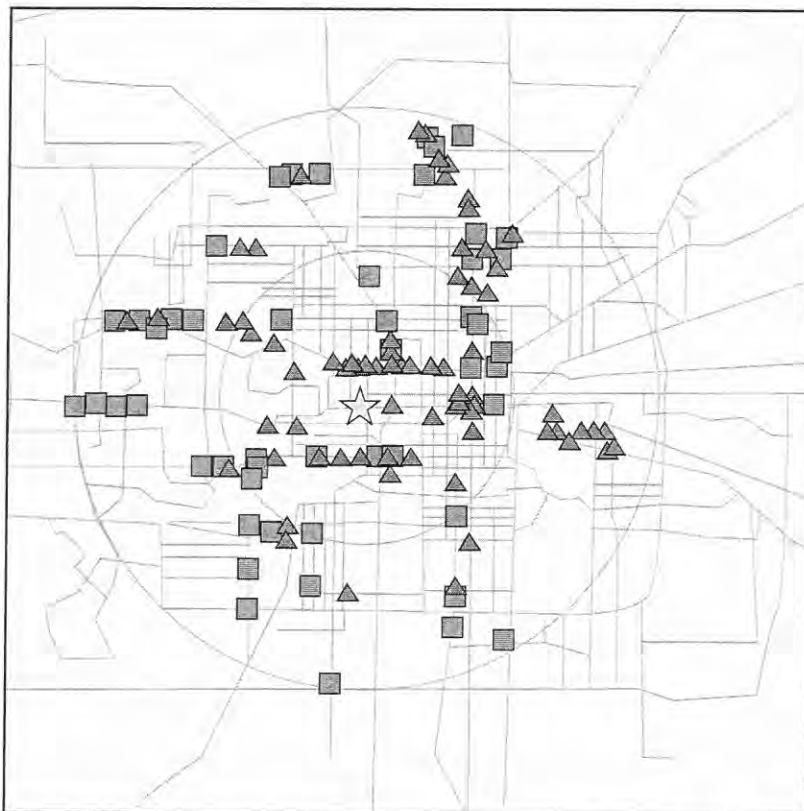


tool to tell visually the story of how alcohol outlet density is spatially connected to individual and community problems. GIS mapping is also instrumental in geocoding, that is determining the geographic coordinates, of each alcohol outlet from a list of street addresses. It is also the primary means of computing numbers of alcohol outlets per given area and calculating alcohol outlet density measures. GIS maps convey information in a manner that facilitates understanding of the connection between community environments and public health problems among community members and policy makers.

GIS mapping is a particularly useful tool in a community campaign to implement the Task Force recommendation for regulating alcohol outlet density.

For example, the accompanying map shows the location of on- and off-premise outlets in proximity to a central point on a college campus.<sup>12</sup>

The map could be augmented by creating overlays to illustrate particular features of the alcohol outlet density problem. For example, a map can show the relationships between police calls for service and incident reports for aggravated assaults, thus illustrating the link between alcohol outlet density and crime or violence. Overlays showing the location of sensitive land uses such as schools, parks, and other youth-oriented environments, can illustrate the proximity of particularly problematic alcohol outlet locations that may expose underage youth to excessive alcohol-related availability and marketing.



#### Mapping Alcohol Outlet Density in a College Community

*Alcohol outlets within a two-mile radius of a central location point (student union, administrative location or major intersection) on a college campus.*

#### KEY

- Central Location Point
- ▲ Both on & off site
- off site

Reprinted from *Health & Place*, 9/1, Weitzman ER, Folkman A, Folkman KL, The relationship of alcohol outlet density to heavy and frequent drinking and drinking-related problems among college students at eight universities, Pages 1-6, 2003, with permission from Elsevier.





### *Using Qualitative Data*

Survey and archival data do not tell the whole story about the effects of alcohol outlet density on communities.

Putting a face to the harms associated with alcohol outlet density helps deepen an understanding of the consequences and can help with advocacy efforts often required to make the case. This is accomplished through the collection of qualitative data, including the compilation of particular incidents and their effects on individual citizens. Qualitative information makes problems concrete, understandable and fuels motivation to “fix the problem.”

Qualitative data can be collected systematically, through structured interviews, focus groups and case study methodologies, or more informally, by collecting individual stories that illustrate particular problems associated with alcohol outlet density. Photovoice is another tool for using photographs to tell a story. Photos can be a valuable community

tool to visually reflect the local issues related to alcohol outlet density. Sources can include:

- Residents who live near alcohol outlets;
- Law enforcement personnel who respond to problems occurring at alcohol establishments;
- Emergency room staff or emergency medical services staff who respond to alcohol-related injuries, including poisoning;
- Parents, teachers, school administrators, and others who can speak to the impact of alcohol outlet density on young people;
- Young people, who themselves are a particularly powerful change agent on alcohol outlet density issues who often see the community in a way that is compelling to policy makers and can demonstrate this through the use of tools like photovoice; and
- Non-alcohol merchants adversely affected by alcohol outlet density in the vicinity of their business.



## PART FOUR

### *Approaches to Regulating Alcohol Outlets*



#### LEGAL ISSUES RELATED TO THE REGULATION OF ALCOHOL OUTLET DENSITY

The 21st Amendment to the U.S. Constitution grants the states primary responsibility for making licensing decisions that affect alcohol outlet density decisions. As noted above, all states require private alcohol retailers to obtain licenses as a condition of operation. Licenses issued by the local jurisdiction where the alcohol outlet is located are sometimes required in addition to a state license. State licensing can facilitate local control of alcohol outlet density by establishing minimum standards that apply across the states (e.g. requirements that alcohol outlets be a certain distance from sensitive locations such as schools, minimum distances between alcohol outlets, and maximum number of licenses in a given geographic area or maximum license/population ratio).

In states that grant local licensing powers, local jurisdictions can impose stricter limitations and take into account the circumstances and characteristics of particular neighborhoods and commercial sites. Local governments that do not have formal licensing authority may still be able to exercise similar powers and have a substantial say in the state's licensing decisions by using their land use and police powers, including tools known as conditional use permits. These issues will be discussed in further detail below.

#### *State Preemption*

State preemption is the legal doctrine that determines the level of local control over licensing decisions that impact alcohol outlet density decisions in a given state. Local governments have authority to regulate alcohol outlet density only to the extent that the state grants that authority. States fall into one of four categories of state preemption:

- **Exclusive or near exclusive state preemption:** Many states exclude local governments from the retail alcohol outlet licensing and regulation process. States in this category do not recognize local zoning authority, even as to land use decisions.
- **Exclusive state licensing authority, concurrent local regulatory authority:** Many states retain exclusive authority to license alcohol outlets, but allow local governments to use their local zoning and police powers to restrict certain aspects of the state's licensing decisions. States vary widely in the degree to which they recognize and defer to local authority.
- **Joint local/state licensing and regulatory powers:** In these states, alcohol retailers must obtain two licenses, one from the state and one from the municipality where they are located. In most cases, this gives the primary responsibility for determining alcohol availability to local governments, subject to minimum standards established by the state.
- **Exclusive local licensing, with state minimum standards:** The remaining states delegate licensing authority entirely to local governments and do not issue state licenses at all. Instead, the state establishes limitations on how that licensing authority is exercised.

In general, state preemption undermines effective alcohol outlet density decisions. Both state and local governments play important roles in the process. Ideally, the state would set basic guidelines and minimum standards (e.g., establish minimum distance requirements from sensitive locations), and localities should have primary responsibility for regulating alcohol outlets within their boundaries, building on the state's minimum standards and using their land use and policing expertise to ensure that the level of



alcohol outlet density does not create community problems and is compatible with other land uses.

State and local health departments can play a vital role in demystifying the complexities of state preemption. Clarifying the jurisdictional authority to regulate alcohol outlets goes beyond a simple review of state laws. It also requires a careful analysis of relevant court decisions and interpretation of the findings. The development of issue briefs delineating state and local powers to regulate alcohol outlet density and the corresponding policy options is needed in every state in the U.S., and public health departments are uniquely positioned to provide the legal foundation that supports community level action.

#### *Alcohol Outlet Density Regulatory Options*

Central to all alcohol outlet density regulatory

tools is the goal of changing physical access to alcohol. Changing access occurs by either increasing or decreasing proximity to alcohol outlets. Decreasing alcohol outlet density creates greater separation between outlets and is expected to enhance the following community-level protective factors:<sup>9</sup>

- Increase the distance one has to travel to obtain alcohol, thereby decreasing ease of access and consumption rates;
- Increase the price of alcohol by decreasing competition; and
- Decrease exposure to point of purchase and exterior-facing window alcohol marketing.

There are at least four types of alcohol outlet density regulations:

## CASE STUDY

### *A Tale of Two Cities in Nebraska*

The experiences in Omaha and Lincoln, Nebraska illustrate the interplay of state and local regulation and the importance of state preemption. Nebraska has strong state preemption language in its Alcoholic Beverage Control statutes. Local governments are expected to participate in the state licensing process by providing advisory decisions that the state licensing board must consider but may ignore. Nebraska cities with serious alcohol outlet density problems have endeavored to influence the state licensing decisions, but have found that their advice was often not followed. As a result, some cities have chosen to drop out of the process all together. Decisions by the

Nebraska Supreme Court in the 1990s held that ordinances enacted by cities that included certain types of alcohol outlet density restrictions (bypassing the state process) were preempted under state law.

Under the leadership of the Lincoln City Council's Internal Liquor Commission, this issue was revisited in the late 1990's. At that time the Lincoln City Council enacted a limited zoning-based set of restrictions on the location of alcohol outlets near residential areas. The ordinance has not been challenged. Community groups in Omaha commissioned a legal analysis of the state preemption doctrine, which found that the

Supreme Court decisions did not rule out many forms of local control, particularly in light of the Lincoln experience. In 2011, these groups assessed the city's alcohol availability structure and the feasibility of developing a comprehensive local land use and public nuisance abatement strategy to address alcohol outlet density problems in their city. The county health department has partnered with and provided assistance to community groups on these issues as appropriate over the years. The Preemption Legal Analysis as well as materials used as part of the Nebraska campaign can be found on the CAMY website at [www.camy.org/action/outlet\\_density](http://www.camy.org/action/outlet_density).





**1. Geographic Restrictions:** Limits the number of alcohol outlets per specific geographic unit (see text box on page 13). This mechanism is particularly useful in addressing the tendency for alcohol outlets to cluster and create an over-concentration in specific areas.

**2. Population-Level Restrictions:** Limits the number of alcohol outlets per population and, while less useful than more local-level restrictions, can establish an outer limit on the total number of alcohol outlets in a city or county.

**3. Commercial Restrictions:** Establishes a cap on the percentage of retail alcohol outlets per total retail businesses in a geographic area—another method to address clustering and promote retail diversity.

**4. Time/Space Restrictions:** Limits the location and operating hours of alcohol outlets. Location restrictions can be applied to protect sensitive land uses such as schools, parks, etc. and to address clustering by establishing minimum distance requirements between alcohol outlets. Limits on hours of operation, while not technically a feature of alcohol outlet density, can mitigate density-related problems.

As noted previously, different states allow different levels of local regulatory authority. Exercising local zoning, land use, and nuisance abatement powers are important ways that communities can implement a number of the above

regulatory strategies. However, it is important that cities, counties, and other municipalities carefully assess the extent to which they have authority to implement them.

### *Local Zoning and Land Use Regulations to Influence Density*

#### **Overview of How Land Use Regulations Can Influence Density**

Land use decisions typically involve local governments since these determinations require assessment of local conditions—ensuring, for example, that the alcohol outlet location is compatible with the surrounding area, fits with the neighborhood, and will not create crimes that require law enforcement responses. Local governments are often challenged to both restrict the proliferation of new

alcohol outlets and address the problems created by the density of existing outlets. Local land use regulation is usually exercised through a permit process found in local zoning ordinances, often referred to as Conditional Use Permits (CUPs), and through public nuisance abatement ordinances, described at left. CUPs typically regulate new alcohol outlets while nuisance abatement ordinances regulate existing outlets. Together these two tools serve both to prevent over-concentration of new alcohol outlets and to reduce problems resulting from the number of outlets already in operation.

#### **Key Local Land Use Tools to Regulate Alcohol Outlet Density**

- **Conditional Use Permits (CUP)** Establish land use conditions that structure how, when and where new alcohol outlets can operate.
- **Public Nuisance Ordinances (Deemed Approved Ordinances or DAO)** Impose nuisance-related performance standards on existing alcohol outlets.





### Conditional Use Permits

Local businesses, including alcohol retailers, can be required to obtain and maintain a conditional use permit (CUP) as a condition of operation. The CUP is a particularly powerful tool in regulating the overall availability of alcohol by requiring spacing or distance requirements between alcohol outlets, regulating proximity to sensitive land uses such as schools, churches, parks, and residential neighborhoods, and permitting outlets only in specific areas of the city or county. CUPs can also impose conditions on the operating practices of the retail business, for example limiting the hours of sale or the types of alcoholic beverages that can be sold, or requiring security staff or other measures to reduce crime, violence, and public nuisance activities. Retail outlets that are in operation prior to the enactment of a CUP are generally treated as “grandfathered uses” or “non-conforming uses” permitting them to operate without the new land use standards included in the CUP. The extent to which localities can impose restrictions on alcohol sales practices of existing alcohol outlets will vary by states based on the extent to which state preemption exists.



### Public Nuisance Ordinances (Deemed Approved Ordinances)

Communities often have concerns about the nuisance problems created by existing on- and off-premise alcohol outlets. Public Nuisance Ordinances (referred to here as Deemed Approved Ordinances or DAOs) are another tool used by many local governments to limit the risks associated with alcohol outlet density by imposing conditions of operation on existing alcohol retail outlets (those not subject to CUP requirements). DAOs change the legal status of existing alcohol outlets, granting them “Deemed Approved” status, permitting them to operate as usual, under specific “performance standards.” The standards focus on preventing and abating public nuisances (e.g. loitering, increased police calls, noise, graffiti, drug sales, etc.), adhering to state or local laws, and avoiding any adverse effects to the health and safety of those residing and working in the surrounding area. Violations of the ordinance are handled at the city or county level. Law enforcement and administrative costs associated with the DAO are sometimes funded by an annual fee collected from alcohol outlet businesses. Community anti-drug coalitions can play a vital role in assisting in the adoption of DAOs as well as monitoring the implementation of the ordinance.

The use of CUPs and DAOs to regulate alcohol outlet density and other operational characteristics is growing nationally. As discussed previously, the authority granting local municipalities to use the CUP for regulating alcohol outlets is a function of the delicate power balance between state and local entities – state preemption may limit or prohibit their application to alcohol outlets. Nevertheless, municipalities are seeking and finding ways to navigate the legal restrictions imposed by State law. Examples of model policies are provided on the CAMY website at [www.camy.org/action/outlet\\_density](http://www.camy.org/action/outlet_density).

## PART FIVE

### *Influencing Policy to Regulate Alcohol Outlet Density*



#### A. ACTION STEPS FOR LOCAL AND STATE-LEVEL POLICY ADVOCACY

The steps associated with moving policy to reduce alcohol outlet density are similar to other policy campaigns that involve calling for significant social change. The process outlined here in nine steps draws significantly from the lessons learned in tobacco control and other successful public health policy initiatives.<sup>17</sup> Differing emphases may apply depending on whether the campaign involves a state rather than a local-level policy initiative.

It should be noted that health departments are limited in their ability to use state and federal funds to engage in the lobbying activities associated with moving the adoption of state and local laws to reduce outlet density. But health departments have a significant role to play in moving policy by providing the following:

- Data that describes the alcohol outlet density problem;
- GIS maps that draw relationships between alcohol outlet density and community problems;
- Community planning support to address alcohol outlet density; and
- Assistance in identifying and tracking outcome measures.

Community coalitions are skilled at mobilizing grassroots community members to engage in the advocacy process. The membership base usually includes broad representation from parents, non-profit organization leaders and volunteers, city/county officials, health department staff, law enforcement officials, and health care providers, all of whom can bring community pressure to bear on decision makers to move density policy forward. It is the

#### NINE ACTION STEPS FOR LOCAL AND STATE-LEVEL POLICY ADVOCACY

##### STEP 1

Assess resources needed for policy advocacy

##### STEP 2

Clarify the policy goal

##### STEP 3

Make your case and frame your issue

##### STEP 4

Seek in-kind support from an attorney with expertise in municipal or state law

##### STEP 5

Conduct media advocacy campaigns

##### STEP 6

Organize and mobilize grassroots and grass-tops support

##### STEP 7

Convince the policy making body to adopt the proposed regulatory proposal

##### STEP 8

Plan for implementation and enforcement

##### STEP 9

Overcome challenges and pitfalls



synergy between these two systems that increases the likelihood of adoption and enforcement of alcohol outlet density policies at the community level. When reviewing the nine Action Steps, keep in mind the core functions of health departments and community coalitions and seek to maximize the ways in which each can engage with the other and with the policy process.

**STEP 1:**

*Assess resources needed for policy advocacy*

This assessment addresses the capacity of the coalition undertaking the policy campaign. The resources needed for state-level policy change do not differ much from those needed at the local level. Health departments and community coalitions together can generally provide many of them. They include:

*Human resources*

- Enough people with strong connections to people with the ability to influence decision makers and to other constituencies that can be mobilized to act.
- People with a wide range of skills to lend to the advocacy effort, such as writing, data analysis, media relations, etc.
- Strong coalition leadership, including an individual or group of people who can drive the work forward.
- Someone who can liaise with a state or municipal attorney to carry out the legal aspects of the work, including interpreting relevant laws and regulations to the coalition (see Step 4 on following page).



*Data resources*

- Access to good data from many sources that shed light on alcohol outlet density and related harms, ability to maintain access to these data over time, and resources to analyze and report findings (see discussion below).

*Financial resources*

- Sufficient resources to cover costs of the policy-advocacy efforts, including travel, administrative and professional staff, and consultants, etc. will be required. For local campaigns, in-kind contributions and donations can cover most or all expenses. State-level campaigns often require more financial resources because of the complexity of the policy process and the costs associated with organizing on a statewide basis. Restrictions on the use of funds obtained through grants and contracts, particularly awards obtained from government sources, should be strictly adhered to, and program expenditures should be well-documented.
- In general, health departments can participate in the majority of activities associated with regulating alcohol outlet density; however, health department staff are encouraged to inquire about organizational policies and practices that dictate their participation in these activities and to contact their Project Officer or other staff who are administering their funding if they have any questions about restrictions on their ability to participate in advocacy activities.
- Community coalitions generally have greater leeway when it comes to participating in policy advocacy, but they need to be clear on their funding restrictions as well. Additional information on the involvement of community coalitions in advocacy activities can be found

in CADCA Strategizer #31: *Guidelines for Advocacy: Changing Policies and Laws to Create Safer Environments for Youth* on the CAMY website at: [www.camy.org/action/outlet\\_density](http://www.camy.org/action/outlet_density) or on CADCA's website at [www.cadca.org](http://www.cadca.org).

*Technical assistance resources*

- Policy advocacy campaigns can be time consuming and complex in nature. The coalition may be unfamiliar with implementing a campaign and should seek technical assistance support on unfamiliar aspects of the work. Assistance can take many forms, including support with some of the policy advocacy steps. For example, community coalitions could turn to public health departments for technical assistance in collecting, analyzing, and reporting data on alcohol outlet density and alcohol-related behavior problems. Coalitions may also require TA on media advocacy, planning community organizing strategy or making the case for the policy to the public and decision makers. National organizations such as CADCA and CAMY may be further sources of assistance in these areas.

The assessment stage illustrates the importance of building strong collaborations across diverse interest groups, with public health departments and community coalitions playing key leadership roles.

**STEP 2:**

*Clarify the policy goal*

The key mechanism for clarifying the policy goal is to develop a policy action statement – a condensed (approximately 25 word) statement that includes:

- The problem to be addressed;
- The policy solution;



- What the policy will do – its positive impacts;
- Who will benefit from the policy – who will be positively affected; and
- Names of the policy makers that can make it happen – the “targets” who ultimately adopt the policy.

**Sample Policy Action Statement**

City Council enacts a CUP ordinance restricting new alcohol outlets in the downtown area thereby reducing violence and public nuisances and protecting adjacent residential neighborhoods.

**STEP 3:**

*Make your case and frame your issue*

Developing an issue brief provides the justification for the policy statement, describing the problem and the policy solution from the coalition's perspective. It “frames” the issue and the solution in a manner that maximizes the likelihood of support from key policymakers and community leaders. Much of the data that provides the foundation for the “case” are available to health departments. Examples of issue briefs may be found on the CAMY website at [www.camy.org/action/outlet\\_density](http://www.camy.org/action/outlet_density).

**STEP 4:**

*Seek in-kind support from an attorney with expertise in municipal or state law*

As noted above, alcohol outlet density regulation may involve complex legal provisions and court opinions that put the extent of local authority in question. An attorney who supports the policy goal with expertise in this aspect of state and local law is an indispensable player to a successful policy campaign. He/she can ensure that the proposed intervention will



withstand a legal challenge and can serve as an invaluable ally in negotiating specific legal provisions with the city attorney or county counsel. At the state level, the attorney can help draft the legislation and negotiate with the legislative counsel's office.

### STEP 5:

#### *Conduct media advocacy campaigns*

This step is a powerful tool for a policy campaign and is distinct from the more traditional uses of media in the public health field, including social marketing. Social marketing focuses on providing health information to the public and promoting individual changes in behavior. Media advocacy, by contrast, uses media to influence the policy process by setting the agenda, framing the debate, and advancing specific solutions or policies. For example, suppose in our hypothetical suburban community most

weekend nights the streets fill with many intoxicated young adults emptying into the streets as the bars and restaurants close resulting in nuisance behavior and violence. A social marketing campaign might focus on the risks of binge drinking and encourage citizens to moderate their drinking. A coalition advancing alcohol outlet density regulations would reach out to reporters with data and personal stories (e.g., from neighbors) that would link the event to the alcohol outlet density issue as one step in advancing a CUP or DAO.

Media advocacy is both an art and a skill, involving several key steps and attention to timing and opportunities for placing stories. Health departments have a history of using media advocacy to move health policy. While this is a less developed skill of community coalitions, media work is an area where a partnership between a health department and community coalition can effectively leverage the resources each







brings to the campaign including relationships with media sources that can provide free or “earned” media on the alcohol outlet density issue. In communities where these skills may not exist, there are many effective training programs and handbooks available to help public health departments and community coalitions build their media advocacy capacity.<sup>18,19</sup>

#### STEP 6:

##### *Organize and mobilize grassroots and grass-tops support*

This step is at the heart of the entire campaign and provides a foundation for all the other steps. It involves two key activities:

- 1) Building a grassroots base for the policy campaign – to establish “bottom up” support; and
- 2) Influencing key decision makers to support the policy – to establish “top down” support.

##### *Building a grassroots base*

Community organizing is critical because a campaign to change alcohol outlet density regulation policy involves shifting a community’s public health and economic agenda. A strong coalition of public and private agencies and organizations coupled with a powerful resident base can effectively move local policies to reduce alcohol outlet density and problems it creates. Groups such as Mothers Against Drunk Driving, state and local health departments, local law enforcement, the non-profit sector, faith-based groups, schools and universities, neighborhood associations, small businesses, and other stakeholders all have a role to play in an effective campaign. However, opposition can be expected from sectors of the community that have influence with decision makers. It is not uncommon to find the local chamber of commerce, downtown association, and business-oriented service clubs initially

opposed to the idea of creating more regulations on alcohol outlets. But this opposition can sometimes be turned to support or at least minimized with careful messaging and an emphasis on community mobilization. Studies on the economic impacts of alcohol outlet-related problems compared to the community costs associated with addressing the problems can fuel a compelling argument for business leaders. The more localized the cost data, the greater the potential there will be to move business interests from opposed to support.

To be successful, the citizen voice of the community must be organized. It represents democracy in action and relies on one of the core tenets of our country’s political system, that elected officials are accountable to those who elected them. Unless the citizen voice is heard, more traditional constituencies with economic clout and with the ear of decision makers are more likely to be able to sway policy decisions, even when their proposals



*Local groups in Omaha launched a campaign to propose a new zoning ordinance to give Omaha authority to make its own alcohol licensing decisions*



## ROLES IN THE POLICY ADOPTION PROCESS

### Health Departments

- Capitalize on existing relationships health department staff have with decision makers to educate about them the policy impacts before the public hearing;
- Respond to requests for written information, as part of a staff report, on a proposed policy;
- Respond to questions from decision makers during testimony in public hearings, in the context of their role as staff, on general impacts of a proposed policy;
- When requested by the governmental body, provide testimony on the health impacts of the proposed policy during public hearing; and
- When the formal position of the health department is in support of the proposed policy, testify on the benefits of the policy during public hearings.

are detrimental to large sectors of the community. Community organizing and mobilization go hand in hand with media advocacy and also involve both art and skill. Community coalitions play a key role in a policy campaign by serving as the public face on the campaign and focusing the opposition on the group as a whole as opposed to individual coalition members. But health departments also have an important role to play by virtue of their position inside local and state governments and ability to influence key internal stakeholders. More detailed discussion of this process is available in sources included in the references to this Action Guide.<sup>20, 21</sup>

### Community Coalitions

- Ensure there is a call to action in the media in support of the policy just prior to the public hearing;
- Capitalize on their broad membership base to mobilize a large turnout at the public hearing on the proposed policy;
- Identify and train speakers to testify about the impact alcohol outlets have on their personal lives, the lives of their families, and the broader community, using data from the suggestions on pages 13 - 16;
- Carefully plan the flow of the presentation to decision makers, including testimony from law enforcement, community representatives, and others required to make the case for the proposed policy, making sure to ask for support for the policy; and
- Ensure the supporters in the audience understand their defined role throughout the hearing.

### *Influencing key decision makers*

An effective campaign must augment its grassroots efforts with a “top down” strategy—influencing the decision makers by having those they listen to become supporters of and advocates for the policy campaign. Central to the process is assessing how decisions are made in the spheres you are trying to influence. A tool to facilitate unpacking the decision making process is called the power analysis, which concretely identifies who has the authority to make the desired policy change, who needs to be approached to convince the decision makers, and



who is in a position to make that approach. A power analysis template can be found at [www.camyo.org/action/outlet\\_density](http://www.camyo.org/action/outlet_density).

The combined strategy of 1) building a grassroots base of support coupled with 2) strategic pressure exerted on key decision makers, which is complemented by 3) powerful media advocacy can move a decision making body from opposed to supportive. Given the wide range of activities associated with organizing at the grassroots and influencing decision makers, this is a natural place for partnering to occur. However, clearly differentiating the partner roles in the outreach to decision makers is essential. For example, it is appropriate for health department personnel to use their regular contacts with decision makers to educate them about the health impacts of the policy, while coalition members should proactively meet with decision makers to educate and seek support for the policy. Understanding the capacity of each partner to organize support will ensure that comprehensive advocacy takes place.

#### **STEP 7:**

*Convince the policy making body to adopt the proposed regulatory proposal*

In a successful campaign, the previous six steps lead here, to adoption of the proposed alcohol outlet density regulation by the relevant decision making body. The policy analysis will identify what decision-making body has the necessary authority. This may be an elected body or a person or group that determines an institution's policies. Public hearings are often involved, and the supporters of the policy must be ready to make their case powerfully and convincingly. Preparation is needed to determine the specific decision-making process involved and the opportunities for communication with the policy makers. Most likely, the presentation to decision

makers will require a strategic mix of resident, health department, and law enforcement testimony on behalf of the proposed policy. Partner organizations will have differing roles in this step.

Accomplishing this step is dependent on all the work involved in the previous steps. The coalition should have a good idea of how each decision maker plans to vote on the policy before the actual vote occurs. If the votes are not there, then the campaign should delay this step and continue to build support within the community using the steps previously described.

#### **STEP 8:**

*Plan for implementation and enforcement*

This crucial step is too often neglected and it can ultimately undermine the entire campaign. A law on the books designed to reduce alcohol outlet density is of little value if it is not enforced, a situation that is all too common at both the state and the local level. A common misperception is that a policy campaign is complete once the policy is adopted and that the tasks of enforcement and implementation will occur as a matter of course by those responsible for these activities. This, unfortunately, is not always the case. As discussed below, the coalition needs to monitor the administration of the new ordinance. This post-adoption agenda can be greatly facilitated if planning for it occurs at earlier stages of the campaign. Specifically:

- When developing the proposed policy intervention, engage the relevant agencies in a discussion about what is needed for effective administration and enforcement.
- To the extent possible, integrate implementation and enforcement steps into the policy itself. For example, if internal training of law enforcement





personnel is needed at regular intervals, establish a timetable for this activity in the ordinance.

- Identify data from health departments, law enforcement, and other organizations (e.g., hospital data) needed to monitor changing conditions that will influence implementation.
- Set up a mechanism for ongoing communication between the relevant city/state agencies and the coalition to promote cooperation and to establish a monitoring procedure.
- Use coalition media contacts to publicize enforcement and administrative efforts regularly.

#### STEP 9:

##### *Overcome challenges and pitfalls*

The policy has been enacted and implementation and enforcement have begun. The coalition should expect that problems will arise and pressures will develop to return to the status quo. Any policy to address alcohol outlet density will by definition impact the number of new on- and off-premise outlets that can operate in a specific geographic area. The practices of existing alcohol outlets may also be affected. When the provisions of a new ordinance begin taking effect, exceptions and demands for partial or even full repeal are likely to be proposed and ordinance enforcement resources are likely to be targeted for reduction. The health department-community coalition partnership is as important to protecting the policy as it was to getting it adopted. Communities should anticipate these continuing challenges and plan for them through regular and on-going monitoring of the community environment.

#### B. TRACKING PROGRESS AND PLANNING FOR OUTCOMES

Tracking the impact of the ordinance on community health and safety is also important for defending the ordinance once it is in place, testing whether the ordinance as written is actually effective, and making the case for similar alcohol control policies either in that community or in neighboring or similar jurisdictions. Public health departments are uniquely suited to this task because of their expertise in collecting and analyzing data. An epidemiologist or program evaluation specialist should be on board at the start of the campaign and he/she should design and implement a data collection plan. The first step is to identify indicators that can serve as a baseline for measuring change. These should include both process variables (e.g., is the policy being effectively enforced?) and outcomes (e.g., changes in the number of alcohol-related assaults and frequency and intensity of binge drinking). The indicators described in the section “Using Data to Make Your Case” provide a starting point for developing a system for tracking changes resulting from the policy adoption. The importance of this function is reflected by its inclusion in the first step of the policy campaign process.

Developing and implementing a good data collection plan is only one step in the process – its findings must be effectively disseminated. Reports of findings need to reach policy makers and should become part of the coalition’s media advocacy activities. If problems arise in the implementation process (see step 9) then the reports can provide a means to promote more effective enforcement and administration. Reports that show that the policy is having its intended effect will make it more difficult to overturn or chip away at the policy over time.

## PART SIX

### *Conclusion*



The development of partnerships between health departments and community coalitions can significantly enhance the ability of both entities to adopt and enforce state and local policies to reduce alcohol outlet density.

To be successful both must share a commitment to developing a deeper understanding of the assets each organizational entity brings to the table and establish a willingness to collaborate in their effective use.

There are many tasks that lend themselves to collaborative action prior to actual policy adoption. Assessing both the nature and extent of alcohol outlet density and its related health and safety impacts requires a deep analysis of state and local data. Health departments and community coalitions

have access to much of the data that can describe alcohol outlet density and paint a picture of the resulting community problems, but understanding alcohol outlet density in a community must occur in the context of the state preemption laws. Establishing what legal options are available to regulate alcohol outlet density must precede the development of policy options. This legal analysis is best conducted by an attorney specializing in land-use and sharing a concern about alcohol outlet-related problems.

Once the data have been collected and analyzed, the case has been made for reducing alcohol outlet density, and the legal policy options have been identified and crafted, the stage is set for advocacy and community mobilization. It is here where the partnership will pay significant dividends. While health departments may have to tread lightly on engaging in advocacy on behalf of local and state

“As an epidemiologist working in a state health department, the work on alcohol outlet density is important to our mission. Communities need quality data to effectively reduce density at the local level. Epidemiologists can meaningfully contribute to local campaigns by assisting with the provision of solid information that strengthens the local case about the impacts of outlet density. I find this work both professionally and personally rewarding. It’s good to know that this work can make a difference.”

— *Jim Roeber; New Mexico Department of Health*



policy change, their expert testimony about the science of alcohol outlet density and explanation of local data related to health and safety effects carries tremendous weight with policy makers. Community coalitions can complement this work by bringing people to the policy campaign process. The power of common action will be reflected in the enhanced capacity both to carry out the tasks required to produce public policies and to resist efforts to repeal and/or diminish their effectiveness.

However, as noted in the action steps on the previous pages, policy adoption alone does not guarantee robust implementation of the activities required to improve local conditions. Communities will need ongoing technical assistance that health departments can provide. Regulating alcohol outlet density is complex, requiring sophisticated analytical and community organizing capacity. Community coalitions need to enhance their ability to collect and analyze data, employ GIS mapping technology, and

establish evaluation measures. These are the very skills at which state and local health departments excel. The technical assistance infrastructure for supporting coalitions resides in health departments across the country. The dissemination of these skills forms the foundation for enhanced partnerships between community coalitions and public health departments.

Finally, a comprehensive approach to reducing excessive drinking and related health consequences requires action on the multiple Task Force recommendations to prevent excessive drinking. This Action Guide introduces one important path for state and local action to improve health and safety.

Additional information on other evidence-based strategies for preventing excessive alcohol consumption can be found on the Excessive Alcohol Consumption topic page on the Community Guide website: [www.thecommunityguide.org/alcohol](http://www.thecommunityguide.org/alcohol).



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## ABOUT CADCA

CADCA (Community Anti-Drug Coalitions of America) is a national membership organization representing over 5,000 coalitions and their affiliates working to make America's communities safe, healthy and drug-free. CADCA's mission is to strengthen the capacity of community coalitions by providing technical assistance and training, public policy and advocacy, media strategies and marketing programs, conferences, and special events.

## ABOUT CAMY

The Center on Alcohol Marketing and Youth (CAMY) at the Johns Hopkins Bloomberg School of Public Health monitors the marketing practices of the alcohol industry to focus attention and action on industry practices that jeopardize the health and safety of America's youth. Reducing high rates of underage alcohol consumption and the suffering caused by alcohol-related injuries and deaths among young people requires using the public health strategies of limiting the access to and the appeal of alcohol to underage persons.

This publication is part of CADCA's *Strategizer* series. *Strategizers* offer concise, proven solutions to issues facing coalitions. Designed to provide step-by-step guidance, *Strategizers* range in topics from how to start a coalition, advocacy, getting the faith community involved, youth programs, conducting evaluations to reducing underage drinking, prescription drug abuse prevention, the myths of marijuana, effective prevention strategies, and community mobilization. To order copies, visit [www.cadca.org](http://www.cadca.org) or send an e-mail to [editor@cadca.org](mailto:editor@cadca.org).

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# VENTURA COUNTY LIMITS

A Community Partnership for Responsible Alcohol Policies & Practices

## Public Convenience or Necessity:

### The Power of Local Municipalities to Control Alcohol Outlet Density

Ventura County Limits • June 2005

In a region concerned about growth and urban development, such as Ventura County, communities are at risk of becoming over saturated with bars, liquor stores and other locations where alcohol can be purchased.

If reasonable limits are not imposed, such conditions can threaten public health and safety and reduce the quality of life in surrounding neighborhoods. This issue briefing details the problems associated with high alcohol-outlet density and the power of local municipalities to mitigate them by adopting stronger prevention policies.

#### *The effects of outlet density on a community*

Until recently, alcohol-related problems were viewed as the result of individual behavior. However, about 15 years ago researchers began to look at these problems from a new perspective, taking into account the context in which they occur. There is now a large and growing body of evidence showing that the negative consequences of alcohol use are strongly influenced by environmental factors. Foremost among these factors is alcohol-outlet density.

Many studies establish direct correlations between high alcohol availability and increases in drunken driving, sexual assault, crime and violence, underage drinking, health problems and economic decline. Moreover, the relationship between these problems and outlet density is statistically significant, regardless of socioeconomic and other demographic factors. (See enclosed Research Summary.)

For these reasons, the California Department of Alcoholic Beverage Control (ABC) has established guidelines for the acceptable level of alcohol outlet density in a given census tract. If the number of alcohol

retailers exceeds the number recommended, that census tract is considered oversaturated (detailed information is available on the ABC Web site: [www.abc.ca.gov](http://www.abc.ca.gov)).

#### *Using Public Convenience or Necessity (PCN) as a tool to control oversaturation*

“While local governments are seeking to support business, they may be unaware of the problems that inevitably come with high alcohol outlet density.”

In 1994, the California State Legislature adopted the Caldera bill, which authorizes local municipalities to control the number of bars and retail outlets in their communities. These rules apply to ABC license requests in areas that are already oversaturated and/or areas that have high crime rates. Under the statute, high crime is defined as an area that exceeds the city's average crime rate by 20 percent.

Under such conditions, ABC must deny the license application unless there is a finding of need, termed “Public Convenience or Necessity” (PCN) in the statute. Depending on the type of business requesting a license, the finding of “Public Convenience or Necessity,” is determined at either the state or local level.



The California Department of Alcoholic Beverage Control has sole authority over restaurants, hotels, motels and other lodging establishments, but local governments have discretionary power over bars and liquor stores. If, in these cases, the local authority does not find a need, state law requires the ABC to honor that decision and deny the license application.

### The Burden of Proof

Despite the authority of local municipalities to control outlet density, many areas in Ventura County have reached or surpassed saturation levels. Downtown areas in the cities of Ventura and Oxnard have particularly high concentrations of alcohol licenses. Ventura has over 300 licenses, more than any other city in the county (see map below). Much of this is due to efforts to create a vibrant downtown entertainment district that will boost tourism.

Thus, while local governments are seeking to support business, they may be unaware of the problems that inevitably come with high alcohol outlet density. As such, governing authorities may lean toward approval of new applications unless it can be demonstrated that the license in question will result in escalated crime or some other negative consequence to the surrounding area.

However, this flawed standard is contrary to the intent of state law. When dealing with high-crime and

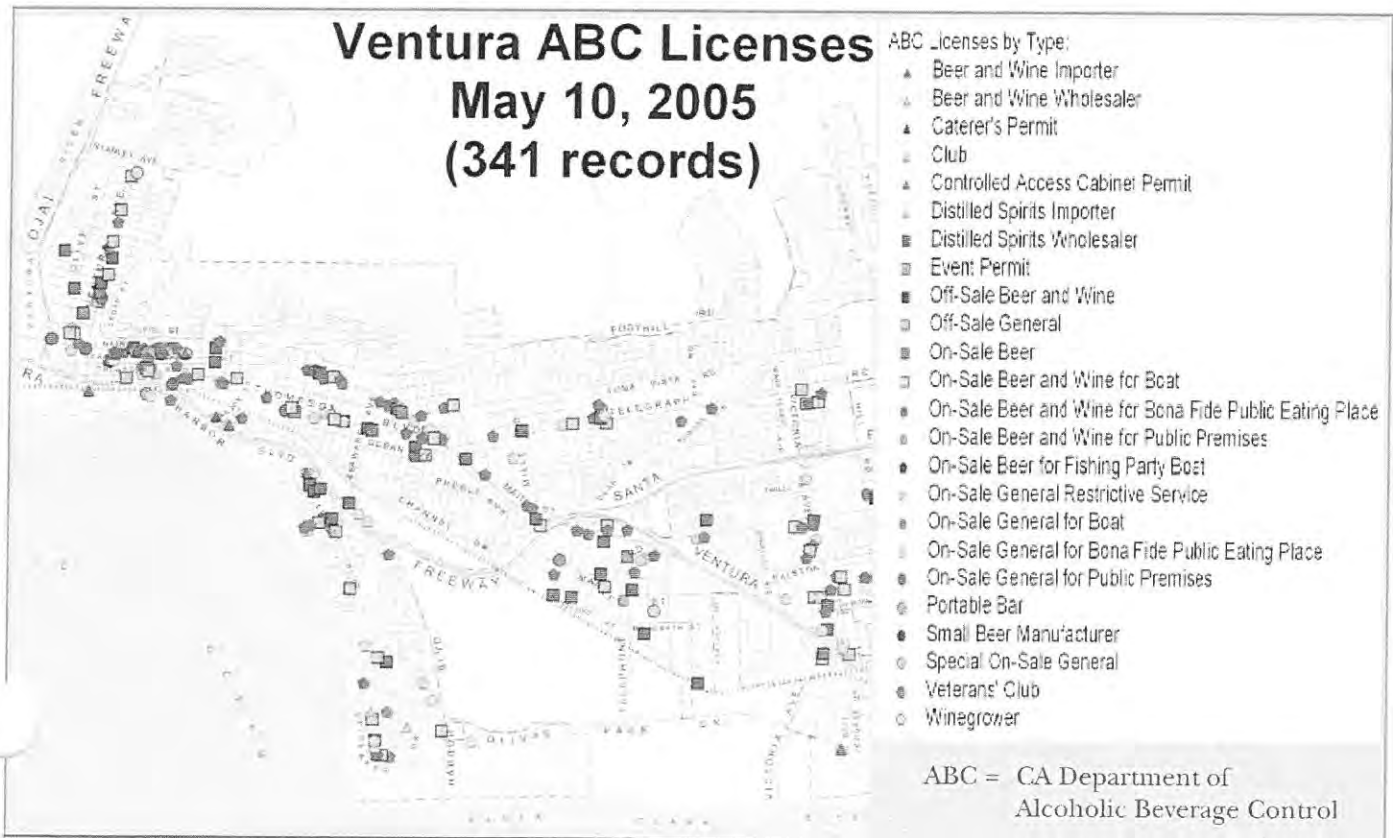
oversaturated areas, local residents and health advocates should not be required to establish the potential for harm. Instead, the burden of proof should be on the applicant, to show that there is a need for another alcohol outlet or, at a minimum, the outlet will be of benefit to the community.

### The Need for Public Involvement

In some cities, an administrator such as the city manager or planning director makes PCN-related decisions. However, such a procedure does not allow for any community input on the issue. A preferable approach would be to hold a public hearing, so the effect on local neighborhoods could be assessed.

An ideal process would solicit input from a variety of stakeholders. In addition to local law enforcement and planning department staff, community members, health and emergency care providers, and representatives from other community agencies would be asked to participate.

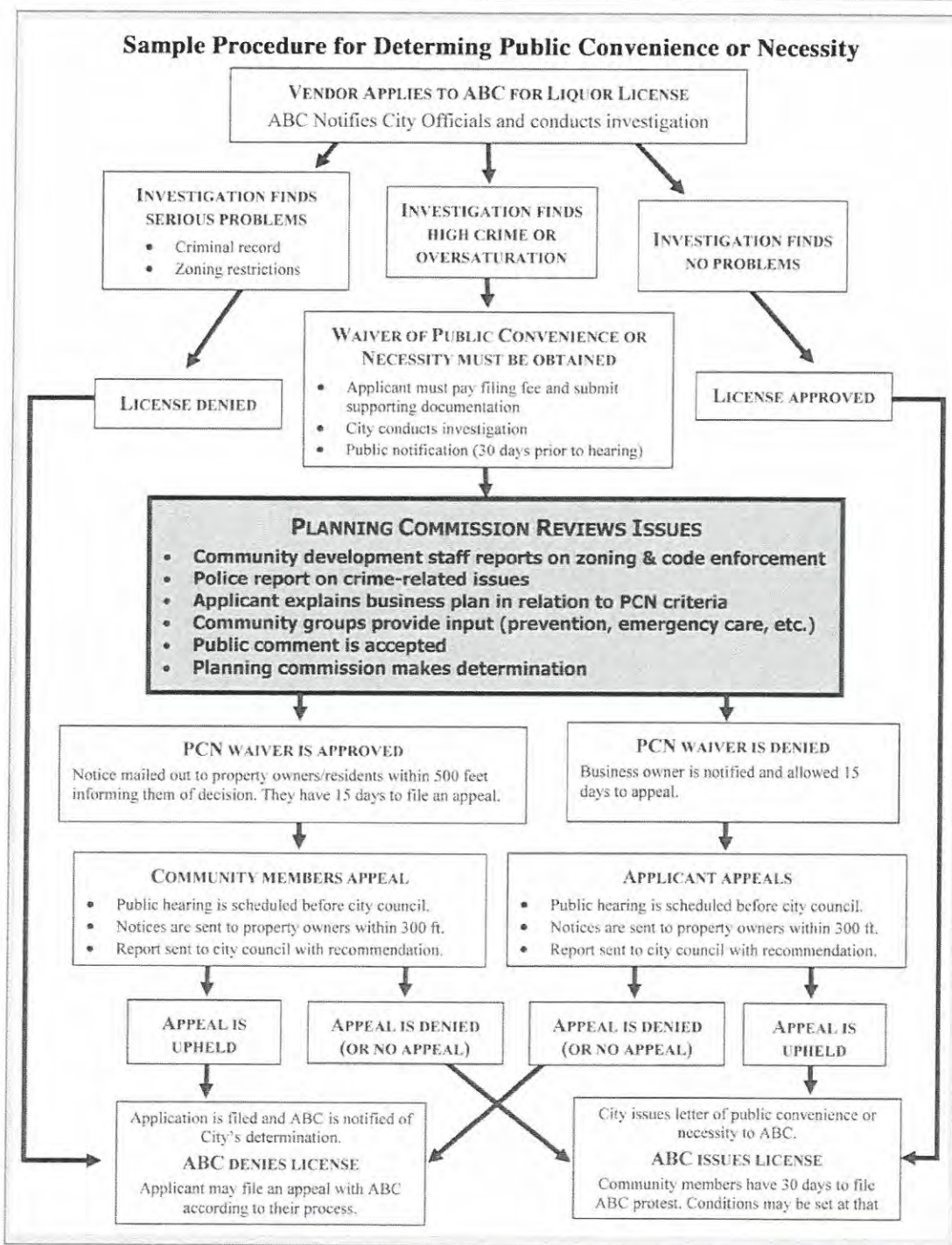
Because these decisions are related to land use, a local planning board or commission is often a good venue for this kind of hearing. Under such a system, the board would have the power to make a final decision, but if it were contested, it could still be appealed to the city council for a final resolution. (See sample procedure at right.)



### Establishing PCN Criteria: How and Where to Draw the Line

State law does not mandate a set of criteria to establish PCN. Instead, that decision is left up to the local elected officials, so they can take into account characteristics unique to their respective communities. To aid them in making this decision, prevention experts have developed two sets of criteria.

The first set is “Mandatory” criteria; conditions under which an application automatically will be denied. The second set is “Discretionary” criteria; conditions that may disqualify an application based on a risk-and-benefit assessment. It should be noted these two are not meant to be mutually exclusive. To the contrary, using a combination of both is recommended, as that would afford the highest level of protection. (See following, adapted from: *Public Convenience or Necessity: A Guide for Local Government*, produced by the EMT Group and funded by the California Department of Alcohol and Drug Programs.)



### Mandatory Criteria

The following factors are examples of those that might be used as the basis to reject a PCN waiver in an area of undue concentration or high crime:

- Targeted law enforcement areas, i.e. regions already drawing excessive amounts of law enforcement resources.
- Elevated rates of alcohol-related crime (i.e., disturbing the peace, public intoxication, prostitution, vandalism, graffiti, etc.).
- Long-term levels of undue concentration (20 percent higher than the state average).
- Proximity to sensitive land uses (i.e., schools,



churches, residences, parks, areas designated for economic development).

## Discretionary Criteria

Under this model, the decision-making body conducts a risk and benefit analysis, with the benefits being considered first. Here the applicant and/or those supporting the application have an opportunity to present the merits of the proposed outlet and explain what value it will bring to the community. If no tangible benefits can be demonstrated, no waiver would be granted. If there are discernable benefits, then the risks are examined.

### Benefit Analysis

- Net employment gain, especially of local residents
- Various business taxes
- Unique business addition
- Upgrading an area and its usage
- Positive cultural or entertainment value
- Long-term economic development goals

### Risk Analysis

- Law enforcement calls for service (20 percent higher than the average)
  - Ratio of all police calls to alcohol-related calls
- Level of law enforcement capacity
- Alcoholism rates and other health indicators
- Homelessness associated with increased alcohol availability
- Percentage of youth in the immediate vicinity
- Alternative business uses available
- Duplication of existing services
- Business operations (i.e., percentage of alcohol vs. other items sold, late-night sales, underage staff, sale of inexpensive or fortified wines, etc.)

Since the density of alcohol outlets in a given community can have a significant impact on public health and safety, local governments should have policies and procedures in place to prevent oversaturation. Establishing a strong set of PCN criteria and applying them to new applications as part of the planning process is a fair and reasonable way to meet this goal.

## Solving Problems with Existing Alcohol Outlets

PCN procedures address new applications. What can communities do about problem alcohol outlets that already have licenses? Many communities use a *Deemed Approved Ordinance* (DAO) together with a *Conditional Use Permit* (CUP) to establish and enforce performance standards. Generally, performance standards state that:

- The outlet must not adversely affect to the health and safety of the local community
- The outlet must maintain upkeep so that its operating characteristics are compatible with the surrounding neighborhood
- The outlet must not contribute to nuisance activities, such as disturbances of the peace, drug dealing, public drinking and inebriation, gambling, prostitution, sale of stolen goods

Communities may require outlets that are not in compliance to abate the nuisance. Ultimately, noncompliant outlets may lose their business permits.

The Marin Institute: [www.marininstitute.org/action\\_packs/land\\_use3.htm#deemed](http://www.marininstitute.org/action_packs/land_use3.htm#deemed)

*Ventura County Limits, a Community Partnership for Responsible Alcohol Policies and Practices, is an initiative to address underage and binge drinking problems by means of a countywide Community Partnership. The Ventura County Behavioral Health Department with funding from the State Department of Alcohol and Drug Programs and the active participation of stakeholders from across Ventura County is guiding this initiative.*

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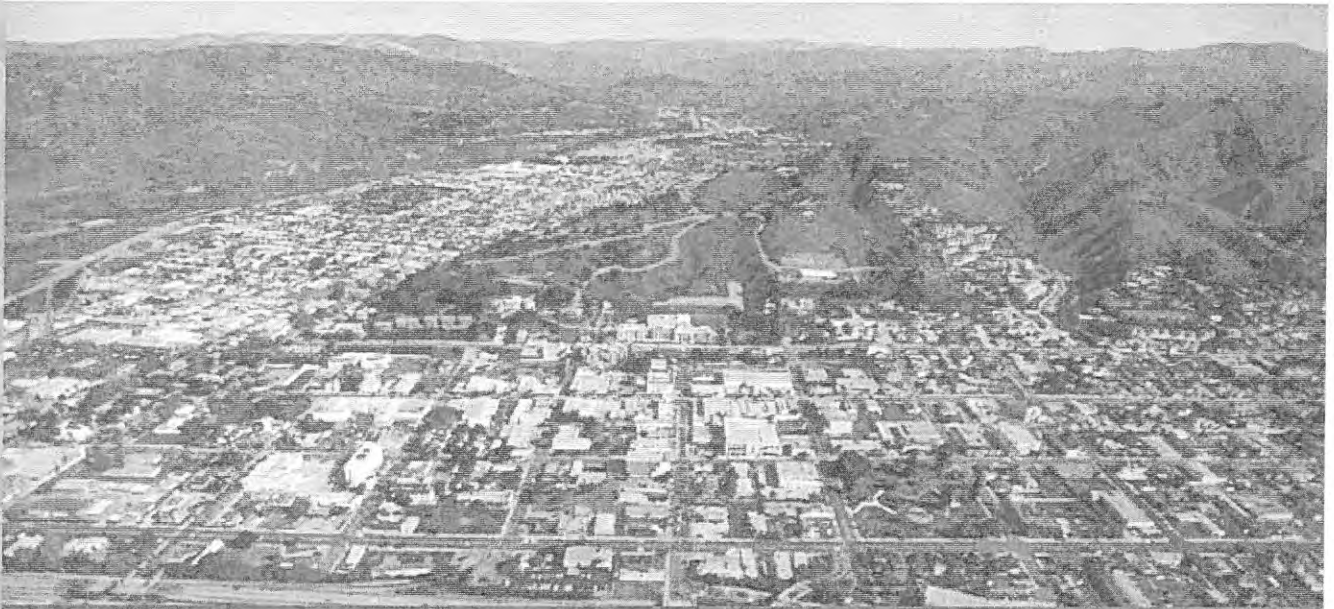
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# VENTURA COUNTY LIMITS

A Community Partnership for Responsible Alcohol Policies & Practices



REPORT



## **Best Practices in Municipal Regulation to Reduce Alcohol-Related Harms from Licensed Alcohol Outlets**

A Publication of the Alcohol and Drug Prevention Division  
of Ventura County Behavioral Health



The intent of this report is to provide useful information to municipal governments, private institutions and community coalitions who are formulating responses to the problems created by retail availability of alcohol.

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# Best Practices in Municipal Regulation to Reduce Alcohol-Related Harms from Licensed Alcohol Outlets

WITH MODEL ORDINANCE AND BIBLIOGRAPHY

OCTOBER 2007

A Publication of the Alcohol and Drug Prevention Division  
of Ventura County Behavioral Health



Pacific Institute  
FOR RESEARCH AND EVALUATION



**VENTURA COUNTY LIMITS**

A Community Partnership for Responsible Alcohol Policies & Practices





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# Introduction

## Why is Regulating Retail Alcohol Outlets Important?

Alcohol is a legal product, and alcohol retailers represent an important business sector of California's economy. Yet, unlike most other retail products, alcohol is associated with a wide variety of community and societal problems, including violence, sexual assault, motor vehicle crashes, other forms of injury, and family disruption. The problems are particularly acute among young people. Even relatively minor problems often associated with alcohol sales, such as loitering, graffiti, and noise, can constitute public nuisances that adversely affect neighboring businesses and residents and contribute to neighborhood blight.<sup>i</sup> Because of these risks to public health and safety, California communities are taking proactive steps to promote responsible alcohol retail practices and reduce the risks associated with alcohol sales.

**Research has shown that five key variables affect the nature and extent of alcohol problems associated with alcohol retail outlets:**

**Number of alcohol outlets:** High numbers of outlets are associated with increased alcohol problems (sometimes referred to as "outlet proliferation").

**Types of alcohol outlets:** Outlets such as bars and nightclubs, which have alcohol as their primary business, also create increased risks of problems.

**Concentration of outlets:** In many communities, the total number of outlets is not excessive, but the outlets are clustered in certain neighborhoods. Over concentration is associated with increased incidence of alcohol problems, including violent assault.

**Locations of outlets:** Retail outlets next to sensitive land uses such as schools, playgrounds or other locations where youth congregate can contribute to underage drinking problems and may detract from quality-of-life for residents nearby.

**Retail practices:** Sales and service practices are particularly important variables. Sales to minors and intoxicated persons as well as public nuisance activities can all be reduced through responsible business practices, which can in turn be promoted through effective zoning provisions and enforcement policies.

Taking comprehensive and proactive steps to plan the number and location of alcohol outlets and to regulate how they are operated, while working collaboratively with alcohol retailers, **can reduce alcohol problems, enhance the community's business environment, and contribute to overall community health and safety.**<sup>ii</sup>

## What is the legal framework for regulating alcohol retail outlets in California?

The California State Alcoholic Beverage Control (ABC) Act and local regulation provide the basic framework for addressing the five alcohol availability variables described above. The interaction of the variables involves complex legal concepts and strategies that can make them difficult to use and understand, not only for residents but also for policy makers.

**The California Alcoholic Beverage Control (“ABC”) Act and the doctrine of state preemption:** From a community’s perspective, the California ABC Act is a given. It establishes the basic alcohol availability structure for all local jurisdictions in the state, specifying the types of alcohol outlets and licenses, restricting their location and number to some degree, and providing minimum standards for operation. The California Department of Alcoholic Beverage Control (“the state ABC Department”) licenses the outlets and is the primary agency responsible for enforcing the Act’s provisions.

Perhaps the most complex legal issue faced by communities in adapting the basic framework of the ABC Act to local conditions is the constitutional doctrine of “state preemption.” The California Constitution provides that the state has “the exclusive right and power to license and regulate the manufacture, sale, purchase, possession and transportation of alcoholic beverages.” (Cal. Const., Article XX, § 22.) Although not unique to California, the doctrine of preemption puts California at one extreme among the states in terms of allowing local communities to establish and enforce their own alcohol availability structure.<sup>iii</sup>

Fortunately, the term “exclusive” describing the powers of the state through its ABC Department is not applied literally. Both the California legislature and the courts recognize that with respect to the regulation of alcohol outlets, important interests of cities and counties overlap with those of the state. Local zoning, land use, and police powers are traditional, well-established local powers that must be protected.<sup>iv</sup> The exercise of these powers, however, is constrained by the state constitution and the state ABC Act. Local communities cannot contradict state legal provisions, and the extent to which local powers can be used is often debated and uncertain, requiring court review and interpretation. It is therefore critical to coordinate local actions with state law and the state ABC Department’s practices.

**New and existing retail outlets:** A key distinction in applying the state preemption doctrine involves the status of the specific licensed premise as a “new” or “pre-existing” outlet at the time a city or county enacts a new ordinance or regulation. A retailer whose business is already in place receives far greater protection under state law than outlets that are proposed following the local action.<sup>v</sup> Thus, a city that wants to restrict alcohol outlets near schools or limit the types of alcohol products sold at the outlet cannot impose the new restrictions on an existing outlet, but can prohibit a new outlet from locating in the restricted zone or selling the restricted product. Although cities have some authority over pre-existing outlets, their power is limited. This best practices guide describes in detail the legal tools available to communities for exercising regulatory authority over both new and pre-existing outlets.



## **What tools do communities have to ensure a healthy alcohol retail environment?**

Although constrained by state law, communities nevertheless have substantial authority to regulate alcohol retail practices. Regulatory powers include:

### ***Conditional Use Permit Ordinances (CUPs)***

CUPs are the primary local regulatory tool for regulating new alcohol outlets, relying on a locality's authority to regulate land uses through its zoning powers. State law provides that a city or county can require that an applicant to the state ABC Department obtain a CUP before it can be licensed by the state.<sup>vi</sup> The CUP application involves a review process, including public hearings, that provides the applicant, public officials, and neighbors the opportunity present evidence regarding whether the application should be granted and, if so, with what conditions.<sup>vii</sup> The CUP ordinance provides basic guidelines for making these determinations and can include mandatory or discretionary rules and conditions. It allows a city to consider special uses that may be essential or desirable to a particular community or neighborhood. CUP ordinances include procedures for enforcing their provisions, usually through administrative procedures already in place under a city's general zoning code.

### ***"Deemed Approved" Ordinances***

Deemed Approved ordinances constitute the basic tool for regulating "pre-existing" outlets – those retail establishments that were in existence prior to a city or county's CUP ordinance. They are also grounded in the authority of local government to regulate land uses through its zoning powers. Because of the state preemption doctrine, the retail practices that can be addressed by deemed approved ordinances are strictly constrained. For example, the ordinances cannot specify the location of a retail outlet or restrict the types of alcohol sold or the hours of operation. Instead, deemed approved ordinances focus on retailer activities and practices (called "performance standards") not directly associated with the actual sale of alcohol that constitute public nuisance activities, such as loitering, graffiti, illegal behavior (such as violating state laws prohibiting sales to minors) and the like. If an outlet violates the ordinance's general performance standards, the outlet is subject to a review process, during which the outlet, the city, and the public have an opportunity at a public hearing to determine whether a violation has occurred and, if so, whether the outlet will have to conform to specified conditions of approval to avoid revocation of its deemed approved status.<sup>viii</sup>

### ***Non-Zoning Local Authority to Regulate Alcohol Outlets***

Communities have other tools for regulating alcohol outlets that can be used in conjunction with or addition to CUPs and deemed approved ordinances. For example, they can address public nuisance activities associated with alcohol retail outlets through nuisance abatement ordinances. These typically apply to all commercial establishments, not just to alcohol retail outlets, to ensure that there is no conflict with the state preemption doctrine.<sup>ix</sup> Communities can also require Responsible Beverage Service (RBS) training for alcohol retail owners, managers and staff in a separate ordinance, relying on its police powers.

### ***Finding of “Public Convenience or Necessity”***

California law allows local jurisdictions to participate in the ABC Department’s licensing procedures for some outlets to a limited degree. The law provides definitions for geographic areas that have high rates of crime and an over-concentration of retail alcohol outlets. When a new outlet is proposed in these zones, the applicant must first obtain a formal finding that the new business will serve “public convenience and necessity” from the city or county where the license is to be located.<sup>x</sup>

# Model Ordinance Summary

## A. Introduction

The Model Ordinance is designed as a tool box for communities integrating several of today's best practices in municipal regulation to reduce alcohol-related harms from licensed outlets.<sup>xi</sup> It assumes, and has as a core recommendation, that the ordinance will include both CUP and Deemed Approved provisions so that it covers all alcohol retail outlets in the community—both new and pre-existing outlets, as described above.

The Model Ordinance includes model provisions and commentaries. The provisions provide the framework and options to be considered; the commentaries provide the rationale and legal basis for the provision. The Model Ordinance in many instances does not make recommendations for or against specific provisions. The best choices for one community may not be relevant to another. This variability reflects one of the strengths of this approach to the regulation of alcohol retail sales: CUP and Deemed Approved provisions are flexible legal instruments that can be adapted to local conditions. This strength, particularly combined with the complex state law under which these provisions operate, creates a complex matrix that can sometimes be confusing and overwhelming to non-lawyers. This Model Ordinance Summary is designed to provide a road map to facilitate understanding of the Model Ordinance and effective dialogue among key constituencies involved in its adaptation and adoption. Provisions that deserve special attention by constituencies involved in the process of adoption are highlighted as "Topics for Special Review."

## B. General Provisions (Applicable to both CUP and Deemed Approved Provisions)

### 4. Title and Findings (Introductory Sections)

The CUP ordinance begins with its title, general purpose and findings, which apply to both the CUP and Deemed Approved portions of the ordinance. The findings establish the need for the ordinance, listing the specific problems that are to be alleviated. These should be adapted to local circumstances, including any local data regarding alcohol problems and their link to retail alcohol sales. The findings and purpose sections are important to establish the city's rationale and authority to take action.

### 5. Definitions (Section 100.01)

The ordinance endeavors to provide legal definitions for all of the key terms in the document. As with the findings section, the definitions apply to both the CUP and Deemed Approved portions of the Model Ordinance.



## TOPIC FOR SPECIAL REVIEW

An additional option not included in the model provisions involves the inclusion or exclusion of “full service restaurants.” The Model Ordinance provides a definition of restaurants, but is neutral regarding whether restaurants should be treated differently from other types of retail alcohol outlets. Many cities and counties, for example, exclude restaurants from their ordinances, provided that they meet strict criteria in terms of food sales, hours of operation, kitchen facilities, among other factors, to ensure that a restaurant does not transform into a more problematic mode of business. See Contra Costa County Ordinance, Appendix 3. These criteria are included in the model definition. Options include: treating restaurants similarly to other types of outlets; exempting them from the ordinance entirely; or developing separate standards applicable to restaurants. If restaurants are excluded, the definitional criteria should be carefully reviewed.

### **6. General Administration and Enforcement Sections (Sections 100.02, 100.03, 100.04, 200.03)**

Local officials responsible for administration and enforcement are named and their authority to enter and inspect retail alcohol premises specified. The ordinance allows for enforcement of its provisions through actions brought by private parties.

## **C. Conditional Use Permit Provisions**

### **1. Purposes and Applicability (Sections 200.01, 200.03)**

The Purposes section augments the findings in the introductory section, focusing on the rationale for requiring CUPs for new alcohol outlets. The provisions apply to all new alcohol retail outlets (subsequent to the passage of the ordinance).

## TOPIC FOR SPECIAL REVIEW

### **Restrictions regarding the location and density of retail alcohol outlets (Sections 200.02, 200.04)**

The ordinance has three key provisions related to retail outlet location:

- **Commercial zone restriction.** Alcohol outlets should only be allowed within existing commercial zones of a local community. These zones should be defined elsewhere in a city or county's zoning ordinance.
- **Model "spacing" requirements.** Specific distances from sensitive uses such as playgrounds, schools, hospitals, high crime districts, etc.
- **Distance requirements between outlets.** The Model Act provides that no more than four alcohol retail outlets should be allowed within a 1,000 foot radius of each other.

These are general recommendations that should be reviewed and amended as needed to address local conditions. Options include: adding additional sensitive land uses, further restricting locations to subsets of commercial zones, and increasing distance requirements. They also may focus on particular types of alcohol outlets. For example, restaurants or grocery stores with relatively limited alcohol sales may be treated differently from bars, nightclubs, or liquor stores.

### **3. Operational Standards, Training Requirements, and Conditions of Approval (Sections 200.05, 200.09)**

The Model CUP provisions have three distinct sections addressing the retail practices of new alcohol outlets. Operational standards are mandatory requirements that apply to all outlets and are typically general in nature, e.g., prohibitions against public nuisance activities and activities that violate state or local laws. One standard refers to an annual fee imposed on all retail outlets to defray the costs of the "Outreach and Education Program and Monitoring and Enforcement Activities," referencing the deemed approved ordinance. See below for further discussion of this fee provision.

## TOPIC FOR SPECIAL REVIEW

The Model Ordinance provides that licensees are required to provide **Responsible Beverage Service (RBS)** training to all owners, supervisors, and staff who serve or sell alcohol. Communities may wish to phase this requirement in over a period of time and may want to augment it with more specific requirements regarding the content of the training, certification of training programs, refresher courses, administration and enforcement. This requirement can be included in the CUP ordinance by reference to a separate RBS training ordinance. A separate publication has been developed describing RBS training standards and curriculum for VCBH department.

**Conditions of Approval** are found in a separate section of the Act and are closely tied to Operational Standards. In general, they are more specific than Operational Standards and can be either standard or discretionary. If standard, they apply to all new outlets automatically; if discretionary, the permitting agency considers their applicability on a case-by-case basis and tailored to the specific application and the surrounding neighborhood.

### *Potential Conditions that are Best Practices in the Model Ordinance Include:*

- Soundwalls
- Prohibited Alcohol Products (e.g. mini-bottles, beer over certain alcohol content, etc.)
- Graffiti Removal
- Chilled Alcoholic Beverages
- Exterior Lighting
- Hours of Operation
- Trash Receptacles
- Paper or Plastic Cups
- Pay Telephones
- Size of alcohol signage
- Complaint Response—Community Relations Program
- Loitering
- Prohibited Activities (e.g. pool tables, video games)
- Drug Paraphernalia
- Security Cameras
- Prohibited Vegetation (that can be used as a hiding place)
- Limitations on signs and advertising on windows of doors in off-sale outlets



## TOPIC FOR SPECIAL REVIEW

**Conditions of approval** are a critical component of the CUP ordinance and should be tailored to local conditions and citizen concerns. The list provided in the Model Ordinance can be treated as suggestive – some may not be relevant to a given community while others may need to be added. Inclusivity is recommended; if it is uncertain whether a given condition is relevant, it can be treated as discretionary and used only if warranted for particular retail outlets. With experience, a community may decide that a discretionary condition should be treated as standard, which streamlines the CUP application process. The Model Ordinance does not differentiate between standard and discretionary conditions in light of the variability of treatment across communities.

#### **4. CUP Ordinance Administration (Sections 200.06, 200.07, 200.08, 200.10, 200.11, 200.12)**

The Model Ordinance specifies required information in the CUP application and provides a framework for review, approval or denial, revocation, and appeals by applicants. These provisions need to be adapted to conform to a city or county's existing structure for handling CUP applications. They include recommendations regarding specific findings that should be made by the relevant decision-making body. See relevant sections and commentaries for legal requirements that should be adhered to in administering the ordinance.

### **D. Deemed Approved Provisions**

#### **1. Purposes and Applicability (Sections 300.01, 300.02, 300.03)**

The purposes section parallels the similar provision in the CUP portion of the ordinance, focusing on the rationale for regulating pre-existing businesses. All alcohol retail establishments in existence as of the effective date of the passage of the ordinance are given automatic deemed approved status. A critical issue involves when a pre-existing outlet is brought under the purview of the CUP provisions. This involves strict legal guidelines that are described in detail in the ordinance itself. In general, if a business changes its "mode and character" (e.g, changes from a restaurant to a nightclub), closes for 90 days or more, or ceases to operate under an ABC Act license, it is treated as if it is a new alcohol retail outlet under the Ordinance, therefore requiring the operator to obtain a CUP (and thus leading to potentially stricter regulation).

## **2. Deemed Approved Performance Standards (Section 300.04)**

This section provides the standards applicable to all deemed approved alcohol retail businesses. As discussed above, the standards focus on prevention and abatement of public nuisance activities such as disturbance of the peace, illegal drug activity, public drinking in public, harassment of passersby, gambling, excessive littering, loitering, graffiti, illegal parking, excessive loud noises, etc. They require licensees to abide by federal, state and local laws and include general provisions regarding the protection of public health and safety and compatibility with surrounding properties.

## **3. Training Requirements (Section 300.05)**

The training requirements found in the CUP provisions is duplicated here.

All persons who own, or are employed in the operation of, deemed approved activities under Article III of this Chapter, and who are personally engaged in the sale or service of alcoholic beverages or who supervise or otherwise control the sale or service of such beverages may be required to undergo a certified training program in responsible methods and skills for selling and serving alcoholic beverages as part of a decision and order issued in a proceeding to revoke or modify the deemed approved status.

To meet the requirements of this section a certified program must meet the standards of the California Coordinating Council on Responsible Beverage Service or other certifying/licensing body designated by the State of California.

### **TOPIC FOR SPECIAL REVIEW**

The **outreach, education, monitoring and enforcement** activities directed at deemed approved licensees described in this section are essential components to an effective ordinance. The outreach and educational program is designed as a proactive approach to encouraging compliance with the Ordinance (both the CUP and Deemed Approved provisions), enhancing community-retailer communication, and, in general, promoting responsible business practices. The section also establishes a Monitoring and Enforcement Activities (MEA) unit in the city government responsible monitoring alcohol retail businesses and enforcing the provisions of the ordinance. A police officer assigned full time to this unit is envisioned. The specific makeup of these activities should be tailored to local needs and resources. A fee provision for defraying costs is described below.

## TOPIC FOR SPECIAL REVIEW

**New costs can be offset by fees.** The Model Ordinance envisions the costs of the outreach, education, monitoring and enforcement activities described above to be offset by a fee imposed on both new and pre-existing outlets. The fee amount is not included in the Model Ordinance and instead recommends that it be set by the city council or board of supervisors. The fee is recommended to ensure effective implementation of the ordinance. Funding a police officer assigned to conduct these functions is critical and probably best accomplished with a special fee. The fee can be structured in a variety of ways – e.g., at a set rate, based on the type of outlet, based on an analysis of risk factors, or based on level of alcohol sales. The City of Ventura uses a risk factor scale that is recommended. See Appendix 4. The fee should be dedicated to the outreach, education, monitoring and enforcement activities and revenues should not exceed actual costs.

### **6. Administration and Enforcement (Sections 300.07, 300.09)**

A substantial portion of the Model Ordinance addresses the administration of the deemed approved provisions, focused on the MEA Unit. Specific topics include: notification to licensees of deemed approved status; inspection, notice of violations, re-inspection, and citation procedures; hearing officer appointment and procedures for hearings; penalties; public hearing procedures; and appeals. The model provisions address legal due process requirements and are drawn from existing deemed approved ordinances



# Model Conditional Use Permit

## DEEMED APPROVED ALCOHOLIC BEVERAGE SALES REGULATIONS ORDINANCE

The City Council of the City of \_\_\_\_\_ hereby ordains as follows:

### TITLE

(A) This Ordinance shall be known as the Conditional Use Permit--Deemed Approved Alcoholic Beverage Sales Regulations Ordinance.

(B) This ordinance requires land use permits for newly established alcoholic beverage sales activities, confers deemed approved status for existing alcoholic beverage sales activities, and provides standards and an administrative hearing process to review violations of those standards in order to protect the general health, safety, and welfare of the residents of the City of \_\_\_\_\_ and to prevent nuisance activities where alcoholic beverage sales occur.

### FINDINGS

The City Council of the City of \_\_\_\_\_ finds the following:

(A) Research shows that areas with greater densities of on-site and off-site alcohol outlets also generally have higher rates of motor vehicle crashes, alcohol-related hospital admissions, pedestrian injury collisions, self-reported injury, and drinking and driving among both young people and adults. In fact, research from

California found that a 1% increase in outlet densities was associated with a 0.54% increase in alcohol-related crashes. Under these conditions, a city with 50,000 residents and 100 outlets would experience an additional 2.7 such crashes for each additional outlet opened<sup>1</sup>;

(B) Studies indicate the rate of alcohol-related crashes can be reduced by responsible beverage service training programs, but the level of risk still is high when outlet density exceeds the acceptable levels of saturation. This is of special concern to communities in Ventura County. According to data from the California Office of Traffic Safety (OTS), the cities of Ventura, Oxnard, and Thousand Oaks ranked 13, 14, and 17 respectively out of 47 cities for drivers under the age of 21 who were arrested for DUI<sup>2</sup>;

(C) Drunk driving arrests often take place at night, as bars are closing and highways become crowded with patrons who have been drinking<sup>3</sup>. This is confirmed by the Place of Last Drink (POLD) survey data, collected from 2005 through 2006, that show about 42.9% of all participants in the Ventura County Drinking Driver Program (DDP) had taken their last drink at a bar, club, or restaurant. The same POLD data also showed that more than half of persons whose POLD was a bar, club, or restaurant drove less than three miles from their drinking location before being arrested, and that the [city(ies) of Ventura, Thousand Oaks, Oxnard, and Simi Valley was(were)] the locations of the POLDs identified by the greatest number of DDP participants<sup>4</sup>;

<sup>1</sup> Treno, A.J.; F.W. Johnson, L. Remer, and P.J. Gruenewald. "The impact of outlet densities on alcohol-related crashes: A spatial panel approach," *Accident Analysis and Prevention*, November 29, 2006. (in press).

<sup>2</sup> Institute for Public Strategies, "Place of Last Drink Survey Annual Report, March 2003," Ventura, CA: Ventura County Behavioral Health Department, 2003. Data for California cities are available on the Office of Traffic Safety website: <http://www.ots.ca.gov/cgi-bin/rankings.pl>.

<sup>3</sup> Calhoun, S., V. Coleman, Alcohol availability and alcohol related problems in Santa Clara County, San Jose, California: County of Santa Clara Health Department, Bureau of Alcohol Services, 1989.

<sup>4</sup> Ventura County Behavioral Health Department, "Quarterly POLD Update: Ventura County Place of Last Drink (POLD) Survey Fall 2006," Ventura, California (2006).

(D) Nuisance and criminal activities such as drug dealing, public drunkenness, loitering, and other behaviors that negatively impact neighborhoods occur with disproportionate frequency at and around the premises of on-site and off-site sale alcohol uses;

(E) Neighborhood character can change over time and the careful regulation of nuisance activity by on-site and off-site alcohol uses will help to ensure that such uses do not contribute to the deterioration of neighborhoods;

(F) The relationship between alcohol outlet density and violent crime has been well documented. Communities with 100 or more alcohol outlets and a population of 50,000 or more can expect an annual increase of 2.5 violent crimes each year for every alcohol outlet added in the area<sup>5</sup>. Criminologists studying the distribution of violent crimes have found on-site alcohol outlets such as bars and restaurants were among the “hottest” of the “hot spots” for such incidents<sup>6</sup>. In one large U.S. city, researchers found city blocks with bars had higher rates of assault, robbery and rape than other blocks, even after the analysis accounted for the effects of unemployment and poverty<sup>7</sup>.

(G) New findings suggest domestic violence and sexual assault in a neighborhood may rise as the number of liquor licenses in the area increases. Even after accounting for socioeconomic factors that could influence domestic violence, a study in Maryland showed that a doubling of the density of liquor stores was associated with a nine percent increase in the rate of reported domestic violence. While alcohol is certainly not the only factor in domestic violence and sexual assault, researchers concluded that reducing the incidence of domestic violence in certain areas may be as simple as spreading out the stores that are allowed to sell

alcohol<sup>8</sup>. Several studies of college students also found a correlation between alcohol use and sexual assault. Specifically, the studies showed an increased likelihood of victimization among drinking and intoxicated women<sup>9</sup>. In a study of 52 women bar drinkers, 85 percent of the women reported some form of nonsexual physical aggression. Thirty-three percent reported an attempted or completed rape occurred after drinking in a bar<sup>10</sup>. The risk of sexual victimization increased for women who went to bars frequently;

Thirty-three percent  
reported an attempted or  
completed rape occurred  
after drinking in a bar.

(H) [Local data on nuisance activities by alcoholic beverage sales activity establishments in the city]; and

(I) The City of \_\_\_\_\_ recognizes its responsibility to enforce the law and the need for a partnership with alcoholic beverage sales activity establishments, the City, including the Police Department and the City Attorney, and the community to address illegal activities in proximity to an alcoholic beverage sales activity.

<sup>5</sup> Scribner, R.A., D.P. MacKinnon, J.H. Dwyer. “The risk of assaultive violence and alcohol availability in Los Angeles County.” *American Journal of Public Health* (1995) (85)3: 335-340.

<sup>6</sup> Sherman, L.W., P.R. Gartin, M.E. Buerger. “Hot spots of predatory crime: Routine activities and the criminology of place.” *Criminology* (1989) 27(1): 27-55.

<sup>7</sup> Roncek, D.W., P.A. Maier. “Bars, blocks, and crimes revisited: linking the theory of routine activities to the empiricism of “hot spots.” *Criminology* (1991) (29)4: 725-53.

<sup>8</sup> Silver Gate Group, “Fewer liquor stores, less violence.” *Prevention File* (2003) 18(1): 2.

<sup>9</sup> Abbey, A., P. McAuslan, L.T. Ross, “Sexual assault perpetration by college men: The role of alcohol, misperception of sexual intent, and sexual beliefs and experiences.” *Journal of Social and Clinical Psychology* (1998) 17(2): 167-95.

<sup>10</sup> Parks, K., B.A. Miller, B.A. “Bar victimization of women,” *Psychology of Women Quarterly* (1997) 21(4): 509-25.

## ARTICLE I. General

### Section 100.01. Definitions

The meaning and construction of these words and phrases, as set forth below, shall apply throughout, except where the context clearly indicates a different meaning or construction.

As used in this Chapter:

(A) "Alcoholic beverage" means alcohol, spirits, liquor, wine, beer, and any liquid or solid containing alcohol, spirits, wine, or beer, that contains one-half of one percent or more of alcohol by volume and that is fit for beverage purposes either alone or when diluted, mixed, or combined with other substances, the sale of which requires a ABC license.

(B) "Alcoholic beverage sales activity" means the retail sale of alcoholic beverages for onsite or offsite consumption.

(C) "Alcoholic beverage sales activity establishment" means an establishment where an alcoholic beverage sales activity occurs. Alcoholic beverage sales activity establishments include but are not limited to the following recognized types of establishments: liquor stores; beer and wine stores; convenience market; markets; neighborhood specialty food markets; retail sales establishments; wine shops; service stations; taverns; clubs; cocktail lounges, ballrooms, cabarets, dance bars, piano bars; billiard or game parlors, bowling alleys; nightclubs cafes; dance halls; bars; restaurants with bars; full-service restaurants; and fast food establishments.

(D) "California Department of Alcoholic Beverage Control" or "ABC" refers to the department of the State of California empowered to act pursuant to Article 20, section 22, of the California Constitution and authorized to administer the provisions of the Alcoholic Beverage Control Act.

(E) "Condition of approval" means a requirement that must be carried out by the activity by: (1) a new alcoholic beverage sales activity to exercise a land use permit; or (2) a legal nonconforming alcoholic beverage sales activity to comply with deemed approved performance standards and to retain its deemed approved status.

(F) "Crime reporting districts" means geographical areas within the boundaries of the City of \_\_\_\_\_ that are identified by the City of

\_\_\_\_\_ Police Department in the compilation and maintenance of statistical information on reported crimes and arrests.

(G) "Deemed approved activity" means any legal nonconforming alcoholic beverage sales activity, as defined in subsection (N). Such activity shall be considered a deemed approved activity as long as it complies with the deemed approved performance standards set forth in section 300.04.

(H) "Deemed approved status" means the status that a deemed approved activity retains as long as it complies with the deemed approved performance standards set forth in section 300.04.

(I) "Financial interest" means any direct or indirect interest in the management, operation, ownership, profits or revenue (gross or net) of an alcoholic beverage sales activity establishment. A "financial interest" means a monetary investment in an alcoholic beverage sales activity establishment or the premises and business enterprises directly related to it.

(J) "Full-service restaurant" means a place that: (1) is primarily, regularly and in a bona fide manner used and kept open for the serving of at least dinner to guests for compensation; and (2) has kitchen facilities containing conveniences for cooking an assortment of foods that may be required for those meals; and (3) obtains a minimum of sixty-seven percent of its gross receipts from the sale of meals and other food and drink non-alcoholic products; and (4) submits evidence of total meal and other non-alcoholic product sales to county officials upon request for purposes of determining its status under this ordinance. A place that sells or serves only sandwiches (whether prepared in a kitchen or made elsewhere and heated up on the premises) or only snack foods, or both, is not a full-service restaurant.

(K) "Hearing officer" means administrative hearing officer, as provided for in section 300.09(a).

(L) "Interested person" means any member, stockholder, officer, director, partner, principal, associate, individual, trustee, or combination thereof holding any financial interest in a permit, or who has the power to exercise influence over the operation of an alcoholic beverage sales activity establishment or a permittee.

(M) "Illegal Activity" means an activity, which has been finally determined to be in noncompliance



with the deemed approved performance standards in section 300.04 of this Chapter. Such an activity shall lose its deemed approved status and shall no longer be considered a deemed approved activity.

(N) "Legal nonconforming alcoholic beverage sales activity" or "legal nonconforming activity" means an alcoholic beverage sales activity for which a valid state of California Alcoholic Beverage Control license has been issued and used in the exercise of the rights and privileges conferred by the license as of the effective date of this Chapter and that, because of the Chapter's requirement of a conditional use permit to establish a new alcoholic beverage sales activity, is a legal nonconforming use as of the effective date of this Chapter. A legal nonconforming activity shall be considered a deemed approved activity as long as it complies with the deemed approved performance standards as set forth in section 300.04, and shall no longer be considered a legal nonconforming activity.

(O) "License" means a license authorized to be issued to a person by the ABC to sell alcoholic beverages pursuant to Division 9 of the Business and Professions Code.

(P) "Licensee" means any person holding a license issued by the ABC to sell alcoholic beverages. For purposes of this Chapter the licensee is the business owner.

(Q) "Manager" means anyone who represents the interest of the permittee in the operation of an alcoholic beverage sales activity establishment whose duties include but may not be limited to: the making or changing of policy; hiring or firing of employees; or generally exercising independent judgment in the operation of the alcoholic beverage sales activity establishment. A manager need not have a financial interest in the alcoholic beverage sales activity establishment. A manager must be an employee of the permittee, or if not an employee, then a person having a financial interest as a partner, a shareholder, or trustee of the alcoholic beverage sales activity establishment (but not otherwise).

(R) "Off-site alcoholic beverage sales activity establishment" means an alcohol beverage sales activity for consumption of an alcoholic beverage off the premises where sold.

(S) "On-site alcoholic beverage sales activity establishment" means an alcohol beverage sales

activity for consumption of an alcoholic beverage on the premises where sold.

(T) "Operational standards" means regulations prescribed in section 200.05 of this Chapter.

(U) "Performance standards" means regulations prescribed in section 300.04 of this Chapter.

(V) "Permit" means a conditional use permit issued pursuant to Article II of this Chapter.

(W) "Permittee" means the individual or entity that owns an alcoholic beverage sales activity establishment and to whom a conditional use permit to operate an alcoholic beverage sales activity establishment has been issued by the City of \_\_\_\_\_.

(X) "Premises" means the actual space within a building devoted to alcoholic beverage sales.

(Y) "Training requirements" means the regulations prescribed in section 200.05(B) or section 300.05 of this Chapter.

(Z) "Transfer of a financial interest" means the assignment, bequest, conveyance, demise, devise, gift, grant, lease, loan, sublease or transfer of a financial interest in an alcoholic beverage sales activity establishment.

(AA) "Transfer of a permit" means the assignment, bequest, conveyance, demise, devise, gift, grant, lease, loan, sublease or transfer of an alcoholic beverage sales activity establishment permit.

#### *Section 100.02. Inspection and Right of Entry*

The sale of alcoholic beverages is a closely regulated industry. The officials responsible for enforcement of the City of \_\_\_\_\_ Municipal Code, or their duly authorized representatives, may enter on any site or into any structure for the purpose of investigation, provided they do so in a reasonable manner, whenever they have cause to suspect a violation of any provision of these regulations, or whenever necessary to the investigation of violations to the operational standards, deemed approved performance standards or conditions of approval prescribed in these regulations. If an owner, occupant or agent refuses permission to enter, inspect or investigate, the officials or their representatives, may seek an inspection warrant under the provisions of California Code of Civil Procedure section 1822.50 et. seq.

### *Section 100.03. Official Action*

All officials, departments, and employees of the City vested with the authority to issue permits, certificates, or licenses shall adhere to, and require conformance with, these regulations.

### *Section 100.04. Private Right of Action*

(A) Any person or entity acting for the interests of itself, its members or the general public (hereinafter “the private enforcer”) may bring a civil action to enforce this Chapter. Upon proof of a violation, a court shall award to the private enforcer the following:

1. Damages in the amount of either:

- (a) upon proof, actual damages; or
- (b) with insufficient or no proof of damages, \$\_\_\_\_\_ for each violation of this Chapter. Unless otherwise specified in this Chapter, each day of a continuing violation shall constitute a separate violation.

Notwithstanding any other provision of this Chapter, no private enforcer suing on behalf of the general public shall recover damages based upon a violation of this Chapter if a previous claim brought on behalf of the general public for damages and based upon the same violation has been adjudicated, whether or not the private enforcer was a party to that adjudication.

2. Restitution of the gains obtained in violation of this Chapter.

3. Exemplary damages, where it is proven by clear and convincing evidence that the defendant is guilty of oppression, fraud, malice, or a conscious disregard for the public health.

(B) The private enforcer may also bring a civil action to enforce this Chapter by way of a conditional judgment or an injunction. Upon proof of a violation, a court shall issue a conditional judgment or an injunction.

### *Section 100.05. Transfer of Revocation of ABC Licenses*

If a license is to be transferred to a new owner, the City of \_\_\_\_\_ is authorized under Business and Professions Code Section 23800(e) to request that the state of California Department of Alcoholic Beverage Control within thirty days after the filing of a transfer application (or a longer period if allowed by law) impose conditions to mitigate problems at or in the immediate vicinity of the premises on any licenses being transferred to new owners.

If a license is to be transferred to new premises, the alcoholic beverage sales activity must apply for a land use permit in accordance with the requirements of Article II of this Chapter.

If a license is revoked by the state of California Department of Alcoholic Beverage Control, after the revocation becomes a final order the alcoholic beverage sales activity must cease operation and may not resume unless it applies for and obtains a land use permit in accordance with this Chapter.

### *Section 100.06. Severability*

If any section, subsection, sentence, clause phrase, or word of this ordinance is for any reason held to be invalid, the validity of the remaining portions of this ordinance shall not be affected.

## **ARTICLE II. Conditional Use Permits for New Alcoholic Beverage Sales Activities**

### *Section 200.01. Purposes*

The general purposes of these regulations are to protect and promote the public health, safety, comfort, convenience, prosperity, and general welfare by requiring consideration and approval of a land use permit before a new alcoholic beverage sales activity will be permitted in any land use zoning district of the City and by requiring all new alcoholic beverage sales activities to comply with the performance standards in Section 300.04 of this Article and to achieve the following objectives:

- (A) Protect adjacent neighborhoods from the harmful effects attributable to the sale of

alcoholic beverages and to minimize the adverse impacts of nonconforming and incompatible uses.

(B) Provide opportunities for businesses selling alcoholic beverages to operate in a mutually beneficial relationship with each other and with other commercial and civic services.

(C) Provide mechanisms to address problems often associated with the public consumption of alcoholic beverages, such as litter, loitering, graffiti, unruly behavior and escalated noise levels.

(D) Ensure that businesses selling alcoholic beverages are not the source of undue public nuisances in the community.

(E) Ensure that sites where alcoholic beverages are sold are properly maintained so that negative impacts generated by these activities are not harmful to the surrounding environment in any way.

Ensure that businesses selling alcoholic beverages are not the source of undue public nuisances in the community.

This Article alone does not allow or permit alcoholic beverage sales activities, but only applies to these activities where otherwise allowed or permitted within an involved applicable land use zoning district. This Article does not authorize alcoholic beverage sales activities in any land use district where they are not otherwise allowed or permitted by the applicable involved zoning district's regulations.

The provisions of this ordinance are intended to compliment the State of California alcohol-related laws. The city does not intend to replace or usurp any powers vested in the California Department of Alcoholic Beverage Control (ABC).

*Section 200.02. Zones for Alcoholic Beverage Sales Activity Establishments*

Alcoholic beverage sales activity establishments are conditional uses only in the commercial zones where appropriately designated as identified by the Zoning Ordinance and General Plan. No such establishment shall be permitted in any area outside of one of these commercial zones.

*Section 200.03. Requirement*

Notwithstanding any other provisions of this code, no new on-site or off-site alcoholic beverage sales activity may be established unless a conditional use permit is first obtained in accordance with the requirements of this Article.

*Section 200.04. Restrictions*

(A) A new alcoholic beverage sales activity is not permitted in any of the following locations:

1. Within 500 feet of an existing alcoholic beverage sales activity,
2. Within 500 feet of any of the following: a public or private accredited school; a public park, playground or recreational area; a nonprofit youth facility, a place of worship; a hospital; an alcohol or other drug abuse recovery or treatment facility; or a county social service office.
3. Within a crime reporting district, or within 500 feet of a crime reporting district, where the general crime rate exceeds the city-wide general crime rate by more than 20 percent.
4. A location where the new alcoholic beverage sales activity would lead to the grouping of more than four (4) alcoholic beverage sales activities within a one thousand (1,000) foot radius from the new alcoholic beverage sales activity.



*Section 200.05. Operational Standards and Training Requirements*

**(A) Operational Standards.** All new alcoholic beverage sales activities shall be designed, constructed, and operated to conform to all of the following operational standards:

1. That it does not result in adverse effects to the health, peace or safety of persons residing or working in the surrounding area;
2. That it does not jeopardize or endanger the public health or safety of persons residing or working in the surrounding area;
3. That it does not result in repeated nuisance activities within the premises or in close proximity of the premises, including but not limited to disturbance of the peace, illegal drug activity, public drunkenness, drinking in public, harassment of passersby, gambling, prostitution, sale of stolen goods, public urination, theft, assaults, batteries, acts of vandalism, excessive littering, loitering, graffiti, illegal parking, excessive loud noises, especially in the late night or early morning hours, traffic violations, curfew violations, lewd conduct, or police detentions and arrests;
4. That it complies with all provisions of local, state or federal laws, regulations or orders, including but not limited to those of the ABC, California Business and Professions Code §§ 24200, 24200.6, and 25612.5, as well as any condition imposed on any permits issued pursuant to applicable laws, regulations or orders. This includes compliance with annual City business taxes and alcohol sales administrative program fees;
5. That its upkeep and operating characteristics are compatible with, and will not adversely affect the livability or appropriate development of abutting properties and the surrounding neighborhood;
6. That all alcohol beverage sales activities pay an annual fee in order to defray the expense to the City for the Outreach and Education Program and Monitoring and Enforcement Activities, described in Section 300.08(C).

A copy of these operational standards, any applicable ABC or City operating conditions, and any training requirements set forth in Section 200.05(B) shall be posted in at least one prominent place within the interior of the establishment where it will be readily visible and legible to the employees and patrons of the establishment.

**(B) Responsible Beverage Service Training Requirements.**

1. All persons who own, or are employed in the operation of, a new alcoholic beverage establishment that is issued a use permit in the manner provided for by Article II of this Chapter, and who are personally engaged in the sale or service of alcoholic beverages or who supervise or otherwise control the sale or service of such beverages shall successfully complete a certified training program in responsible methods and skills for selling and serving alcoholic beverages within 180 days of the issuance of the use permit, or within 180 days of the issuance of a certificate of occupancy authorizing the occupation and operation of the establishment, whichever last occurs.
2. To meet the requirements of this section a certified program must meet the standards of the California Coordinating Council on Responsible Beverage Service (CCC/RBS) or other certifying/licensing body designated by the State of California.

*Section 200.06. Administration*

The [Board of Zoning Adjustment/Zoning Administrator/Planning Commission] shall administer conditional use permits under this Article.

*Section 200.07. Permit Application*

(A) Any person, association, partnership, corporation, or other entity desiring to obtain an alcoholic beverage sales activity establishment conditional use permit shall file an application with the [Board of Zoning Adjustment/Zoning

Administrator/Planning Commission] on a form provided by the Director. The application shall be accompanied by a nonrefundable application processing fee in the amount established by City Council resolution.

(B) Contents of Application. The application for a conditional use permit shall contain the following information:

1. The name, address, and telephone number of the applicant. If the applicant is a corporation, the applicant shall set forth the name of the corporation exactly as shown in its articles of incorporation. The applicant corporation or partnership shall designate one of its officers or general partners to act as its responsible management officer.
2. The name, address, and telephone number of each lender or share holder with a five percent or more financial interest in the proposed business or any other person to whom a share or percentage of the income of the establishment is to be paid.
3. The name, address, and telephone number of the person who shall manage and operate the establishment for which the permit is requested.
4. The name, address, and telephone number of all existing schools, parks, playgrounds or recreational areas, nonprofit youth facilities, places of worship, hospitals, alcohol or other drug abuse recovery or treatment facilities, or county social service offices within 500 feet of the proposed alcoholic beverage sales activity establishment.
5. The name, address, and telephone number of all alcoholic beverage activities within 500 feet of the proposed alcoholic beverage sales activity establishment and within a 1000 foot radius from the proposed alcoholic beverage sales activity establishment.
6. The name, address, and telephone number of a person authorized to accept service of legal notices.
7. The proposed business name of the alcoholic beverage sales activity establishment and description of all operating aspects of the proposed business.

8. The type of ABC license the applicant is seeking for the alcoholic beverage sales activity establishment.

9. Street address of the proposed alcoholic beverage sales activity establishment and the assessor parcel number for the property.

10. A plot plan for the property depicting the location of the building housing the alcoholic beverage sales activity establishment on the property and all existing and proposed parking, exterior lighting, signage, and landscaping, trash enclosures, waiting or queuing areas.

11. Any other information reasonably necessary to accomplish the purposes of Section 200.08.

(C) Referral to Other City Departments and Agencies. The [Board of Zoning Adjustment/Zoning Administrator/Planning Commission] may refer the application to other City departments to determine whether the premises where the alcoholic beverage sales activity establishment will be located, complies with the City's building, health, zoning and fire ordinances or other applicable ordinances or laws. City departments may conduct an inspection of the premises to determine compliance with the ordinances and laws they administer. City departments may prepare reports summarizing their inspections and recommending whether to approve or deny the application based on their inspections.

(D) Action on Application. Notice and public hearing requirements shall be as set forth in Section \_\_\_\_\_ of the City of \_\_\_\_\_ Zoning Ordinance pertaining to conditional use permit.

#### *Section 200.08. Action on Permit Application*

The [Board of Zoning Adjustment/Zoning Administrator/Planning Commission] shall approve issuance of the permit to allow a new alcoholic beverage sales activity upon making the following findings [[in addition to][in lieu of] the findings required by the city's general conditional use permit ordinance]:

1. The proposed alcoholic beverage establishment is located in a zoning district in which the establishment is a permitted use;
2. A finding of "public convenience and necessity" (Business and Professions Code Section

23958.4(b)(2)), if the activity will be located in an area that has been determined by the state of California Department of Alcoholic Beverage Control to have an undue concentration of licenses as defined in Business and Professions Code Section 23958.4(a).

The proposed establishment is not located in what has been deemed to be a high-crime area.

3. A finding that the alcoholic beverage sales activity will not aggravate existing problems in the neighborhood created by the sale of alcohol such as loitering, public drunkenness, alcoholic beverage sales to minors, noise and littering.

4. The proposed establishment will not detrimentally affect nearby neighborhoods considering the distance of the alcohol establishment to residential buildings, schools, parks, playgrounds or recreational areas, nonprofit youth facilities, places of worship, hospitals, alcohol or other drug abuse recovery or treatment facilities, county social service offices, or other alcoholic beverages sales activity establishments;

5. The proposed establishment will otherwise be compatible with existing and potential uses within the general area; and

6. The proposed establishment is not located in what has been determined to be a high-crime area, or where a disproportionate number of police service calls occur.

#### Section 200.09. Conditions of Approval

Reasonable conditions of approval may be imposed, including but not limited to the following conditions.

1. **Soundwalls.** If the alcoholic beverage sales activity establishment abuts residential uses and is allowed

in the involved zoning district, a soundwall may be required between the activity and the abutting residential uses. The soundwall must be no higher than six feet and must not obstruct the view of the building and parking areas from the street. Vegetation may be required to be planted along the soundwall and be of a type that will cover the soundwall surface within two years.

2. **Graffiti Removal.** The removal of all graffiti from the walls, fences, pavement or buildings within twenty-four hours of discovery of its appearance on the property may be required.

3. **Exterior Lighting.** Exterior lighting containing high pressure sodium or equivalent type, with an illumination intensity of between one and four foot-candles, may be required. The lighting may be required to be lit during all hours of darkness. Any required lighting must be directed and shielded so as not to glare onto adjoining residential properties and must have a housing to protect against breakage. Any required lighting must illuminate the adjacent public sidewalks and all parking lots under the business establishment's control in a manner that allows law enforcement personnel to identify persons standing in those areas. Any broken or burned out lights may be required to be replaced within seventy-two hours.

4. **Trash Receptacles.** Permanent, non-flammable trash receptacles, sixty gallons or less in size, may be required to be located at convenient locations, appropriately screened from view, outside the establishment and in the establishment's parking area (if any). The operators of the business may be required to remove on a daily basis, or more frequently if needed to maintain a litter-free environment, all trash from these receptacles and from the sidewalk adjacent to the establishment. The operators of the business also may be required to remove, at least three times per week, all trash originating from its establishment deposited on public property within four hundred feet of any boundary of its premises. All trash receptacles of any size may be required to be appropriately screened from view.

5. **Pay Telephones.** Pay telephones on the site of the establishment may either be: (a) prohibited; or (b) required to be of the type that only allow outgoing calls and be located in a visible and well-lighted location.



6. *Program*. A "complaint response-community relations" program established and maintained by the deemed approved activity may be required. The program may include the following:

- (a) Posting at the entry of the establishment and providing to any requesting individual the telephone number for the area commander of the local law enforcement substation;
- (b) Coordinating with the local law enforcement agency to monitor community complaints about the establishment's activities;
- (c) Having a representative of the establishment meet with neighbors or neighborhood association on a regular basis and at their request, attempt to resolve any neighborhood complaints regarding the establishment.

7. *Activities*. If appropriate, the following activities may be prohibited on the premises: pool or billiard tables, football or pinball games, arcade style video or electronic games, or coin operated amusements devices.

8. *Prohibited Products*. To discourage nuisance activities, an off-site alcoholic beverage sales activity establishment may be prohibited from selling one or more of the following products:

- (a) Wine or distilled spirits in containers of less than seven hundred fifty milliliters;
- (b) Malt beverage products with alcohol content greater than five and one-half percent by volume;
- (c) Wine with an alcoholic content greater than fourteen percent by volume unless in corked bottles and aged at least two years;
- (d) Single containers of beer or malt liquor;
- (e) Containers of beer or malt liquor not in their original factory packages of six-packs or greater;
- (f) Containers of beer or malt liquor larger than thirty-nine ounces;
- (g) Distilled spirits in bottles or containers smaller than three hundred seventy-five milliliters;
- (h) Cooler products, either wine- or malt-beverage-based, in less than four-pack quantities.

9. *Chilled Alcoholic Beverages*. An off-site alcoholic beverage sales activity establishment may be prohibited from maintaining refrigerated or otherwise chilled alcoholic beverages on the premises.

10. *Hours of Operation*. The sale of alcoholic beverages may be restricted to certain hours of each day of the week unless limited further by the state of California Department of Alcoholic Beverage Control.

11. *Cups*. In off-site alcoholic beverage sales activity establishment, the sale or distribution to the customer of paper or plastic cups in quantities less than their usual and customary packaging may be prohibited.

12. *Signs*. The following signs may be required to be prominently posted in a readily visible manner in English, Spanish, and the predominant language of the patrons:

- (a) "California State Law prohibits the sale of alcoholic beverages to persons under twenty-one years of age";
- (b) "No Loitering or Public Drinking"; and
- (c) "It is illegal to possess an open container of alcohol in the vicinity of this establishment".

13. *Presentation of Documents*. A copy of the conditions of approval and the ABC license may be required to be kept on the premises and presented to any law enforcement officer or authorized county official upon request.

14. *Mitigating Alcohol-Related Problems*. The establishment may be required to operate in a manner appropriate with mitigating alcohol-related problems that negatively impact those individuals living or working in the neighborhood, including but not limited to: sales to minors, the congregation of individuals, violence on or near the premises, drunkenness, public urination, solicitation, drug-dealing, loud noise, and litter.

15. *Visibility of Signage*. The total surface of signage pertaining to or referencing alcoholic sales or beverages that is visible from the public right of way may be required to not exceed six hundred thirty square inches.

16. *Window Coverage*. To ensure the safety of the business owner, patrons and law enforcement



officers, no more than 15% of the square footage of windows and 10% of clear doors of off-site premises shall be obstructed by signs or advertising. All signs and advertising shall be placed and maintained in a manner that ensures that law enforcement personnel have a clear and unobstructed view of the interior of the premises. This includes the area in which the cash registers are maintained, from the exterior public sidewalk or entrance to the premises. This latter requirement shall not apply to premises where there are no windows, or where existing windows are located at a height that precludes a view of the interior of the premises to a person standing outside the premises.

**17. Drug Paraphernalia.** An off-site alcoholic beverage sales activity establishment may be prohibited from selling drug paraphernalia products as defined in Health and Safety Code Sections 11014.5 and 11364.5. "Drug paraphernalia" means all equipment, products and materials of any kind that are used, intended for use, or designed for use, in planting, propagating, cultivating, growing, harvesting, manufacturing, compounding, converting, producing, processing, preparing, testing, analyzing, packaging, repackaging, storing, containing, concealing, injecting, ingesting, inhaling, or otherwise introducing into the human body a controlled substance in violation of the California Uniform Controlled Substances Act (commencing with California Health and Safety Code Section 11000).

**18. Loitering.** The establishment's operators or employees may be required to discourage loiterers and to ask persons loitering longer than fifteen minutes to leave the area and contact local law enforcement officials for enforcement of applicable trespassing and loitering laws if persons requested to leave fail to do so.

**19. Security Cameras.** At least two twenty-four hour time-lapse security cameras may be required to be installed and properly maintained on the exterior of the building at locations recommended by the sheriff's department. All criminal and suspicious activities recorded on this surveillance equipment must be reported to local law enforcement. To the extent allowed by law, the establishment's operators may be required to provide any tapes or other recording media from the security cameras to the sheriff.

**20. Prohibited Vegetation.** No exterior vegetation may be planted or maintained that could be used as a hiding place for persons on the premises. Exterior vegetation may be planted and maintained in a manner that minimizes its use as a hiding place.

*Section 200.10. Appeals from a Determination on an Application for Permit*

Any applicant or other person aggrieved by a decision of the [Board of Zoning Adjustment/Zoning Administrator/Planning Commission] on an application for a land use permit required by this Article may appeal the decision to the [Board of Appeals/Planning Commission/City Council] within the time and in the manner required by section \_\_\_\_\_ of the City of \_\_\_\_\_ Zoning Ordinance.

*Section 200.11. Grounds for Condition Use Permit Suspension or Revocation*

An alcoholic beverage sales activity establishment conditional use permit may be suspended by the [Board of Zoning Adjustment/Zoning Administrator/Planning Commission] for up to one year or revoked for failure to comply with operational standards or training requirements in section 200.05 or conditions imposed through the conditional use permit.

Notice of intention to suspend or revoke shall be in writing and shall state the grounds therefore. Notice shall be mailed by U.S. First-Class Mail and Certified Mail Return Receipt Requested as set forth in section 300.09(H) of Article III. Any suspension or revocation shall be done as specified in section \_\_\_\_\_ of the City of \_\_\_\_\_ Zoning Ordinance.

*Section 200.12. Appeal from Suspension or Revocation of Conditional Use Permit*

Any applicant or other person aggrieved by a decision of the [Board of Zoning Adjustment/Zoning Administrator/Planning Commission] from a suspension or revocation of a conditional use permit may appeal the decision to the [Board of Appeals/Planning Commission/City Council] within the time and in the manner required by section \_\_\_\_\_ of the City of \_\_\_\_\_ Zoning Ordinance.

(F) Monitor deemed approved uses to ensure that they do not substantially change their mode or character of operation.

The purposes of these regulations are to protect and promote the public health, safety, comfort, convenience prosperity and general welfare.

**ARTICLE III. Standards and Procedures for Existing Alcoholic Beverage Sales Activities**

*Section 300.01. Purposes*

The purposes of these regulations are to protect and promote the public health, safety, comfort, convenience, prosperity and general welfare by requiring that alcoholic beverage sales activities that are legal nonconforming activities to comply with the deemed approved performance standards in this Chapter and to achieve the following objectives:

The provisions of this ordinance are intended to compliment the alcohol-related laws of the State of California. The city does not intend to replace or usurp any powers vested in the California Department of Alcoholic Beverage Control (ABC).

- (A) Protect surrounding neighborhoods from the harmful effects attributable to the sale of alcoholic beverages and to minimize the adverse impacts of nonconforming and incompatible uses.
- (B) Encourage businesses selling alcoholic beverages to operate in a manner that is mutually beneficial to other such businesses and other commercial and civic activities.
- (C) Provide a mechanism to address problems associated with the public consumption of alcoholic beverages, such as litter, loitering, graffiti, unruly behavior and increased noise.
- (D) Ensure that businesses selling alcoholic beverages are not the source of public nuisances in the community.
- (E) Ensure that sites where alcoholic beverages are sold are properly maintained so that negative impacts generated by these activities are not harmful to the surrounding environment in any way.

*Section 300.02. Applicability*

- (A) The deemed approved alcoholic beverage sales regulations shall apply to all alcoholic beverage sales activities for on-site or off-site consumption existing and operating within the City of \_\_\_\_\_ on the effective date of this Chapter. The nonconforming use provisions of the city's zoning regulations apply to this Article, except as otherwise provided in this Chapter.
- (B) In their interpretation and application, the provisions of this title shall be the minimum requirements for the promotion of the public health, safety, morals, convenience and general welfare and shall be construed broadly to promote the purposes for which they are adopted.

1. Public provisions. This Chapter is not intended to interfere with, abrogate, or annul any other Chapter, rule or regulation, statute or other provision of law except as specifically provided herein. Where any provision of this Chapter imposes restrictions different from those imposed by any other Chapter, rule or



regulation of the City, or other provision of law, the provision that is more restrictive or imposes higher standards shall control.

2. Private provisions. Private easements, covenants, conditions and restrictions of record are not enforced by the City except as may be specifically provided by agreement with the City of \_\_\_\_\_.

*Section 300.03. Automatic Deemed Approved Status*

(A) All alcoholic beverage sales activities that are legal nonconforming activities as of the effective date of this Chapter shall automatically become deemed approved activities as of the effective date of this Chapter and shall no longer be considered legal nonconforming activities.

(B) Each deemed approved activity shall retain its deemed approved status as long as it complies with the performance standards of this Chapter.

(C) The occurrence of any of the following shall terminate the deemed approved status of the business activity and shall require a new conditional use permit in the manner provided by Article II of this Chapter to continue operation:

1. An existing alcoholic beverage sales activity changes its activity so that the ABC requires a different type of license;

2. There is a substantial modification to the mode or character of operation.

3. As used herein, the phrase "substantial change of mode or character of operation" includes but is not be limited to the following:

(a) The off-site alcoholic beverage sales activity establishment increases the floor or land area or shelf space devoted to the display or sales of any alcoholic beverage;

(b) The on-site alcoholic beverage sales activity establishment increases the floor or land area or shelf space devoted to the display, sales, or service of any alcoholic beverage;

(c) The off-site or on-site alcoholic beverage sales activity establishment expands a

customer service area primarily devoted to the sale or service of any alcoholic beverages and/or increases the number of customer seats primarily devoted to the sale or service of any alcoholic beverages;

(d) The off-site or on-site alcoholic beverage sales activity establishment extends the hours of operation;

(e) The alcoholic beverage sales activity establishment proposes to reinstate alcohol sales after the ABC license has been either revoked or suspended for a period greater than 30 days by the ABC; or

(f) The alcoholic beverage sales activity voluntarily discontinues active operation for more than 90 consecutive days or ceases to be licensed by the ABC.

4. A substantial change in the mode of character of operation shall not include:

(a) Re-establishment, restoration, or repair of an existing alcoholic beverage activity on the same premises after the premises have been rendered totally or partially inaccessible by a riot, insurrection, toxic accident, or act of God, provided that the re-establishment, restoration, or repair does not increase the sales or service of any alcoholic beverage, extend the hours of operation of any establishment, or add to the capacity, floor or land area, or shelf space devoted to alcoholic beverages of any establishment that sells or serves any alcoholic beverages.

(b) Temporary closure for not more than 90 days in cases of vacation or illness or for purposes of repair, renovation, or remodeling if that repair, renovation, or remodeling does not change the nature of the premises and does not increase the sales or service of any alcoholic beverage, extend the hours of operation of any establishment, or add to the capacity, floor or land area, or shelf space devoted to alcoholic beverages of any establishment that sells or serves any alcoholic beverages.

(D) Discontinuance. Once it is determined by the city that there has been a discontinuance of active operation for 90 consecutive days or a cessation of

ABC licensing, it may be resumed only upon the granting of a conditional use permit as provided in Article II. The property owner shall be notified by the City of \_\_\_\_\_ of the termination of the deemed approved status and shall be informed of the property owner's right to appeal the City's decision to the Administrative Hearing Officer as provided in Section 300.09(A). Notification of the public hearing shall be in accordance with Section 300.09(H).

#### *Section 300.04. Deemed Approved Performance Standards*

(A) The provisions of this section shall be known as the deemed approved performance standards. The purpose of these standards is to control dangerous or objectionable environmental effects of alcoholic beverage sales activities. These standards shall apply to all deemed approved alcoholic beverage sales activities that hold deemed approved status pursuant to section 300.03.

(B) An alcoholic beverage sales activity shall retain its deemed approved status only if it conforms to all of the following deemed approved performance standards:

1. That it does not result in adverse effects to the health, peace or safety of persons residing or working in the surrounding area;
2. That it does not jeopardize or endanger the public health or safety of persons residing or working in the surrounding area;
3. That it does not result in repeated nuisance activities within the premises or in close proximity of the premises, including but not limited to disturbance of the peace, illegal drug activity, public drunkenness, drinking in public, harassment of passersby, gambling, prostitution, sale of stolen goods, public urination, theft, assaults, batteries, acts of vandalism, excessive littering, loitering, graffiti, illegal parking, excessive loud noises, especially in the late night or early morning hours, traffic violations, curfew violations, lewd conduct, or police detentions and arrests;
4. That it complies with all provisions of local, state or federal laws, regulations or orders, including but not limited to those of

the ABC, California Business and Professions Code §§ 24200, 24200.6, and 25612.5, as well as any condition imposed on any permits issued pursuant to applicable laws, regulations or orders. This includes compliance with annual City business taxes and alcohol sales administrative program fees;

5. That its upkeep and operating characteristics are compatible with, and will not adversely affect the livability or appropriate development of abutting properties and the surrounding neighborhood;

6. That all alcohol beverage sales activities pay an annual fee in order to defray the expense to the City for the Outreach and Education Program and Monitoring and Enforcement Activities, described in Section 300.08(C).

A copy of these performance standards, any applicable ABC or City operating conditions, and any training requirements set forth in Section 300.05(B) shall be posted in at least one prominent place within the interior of the establishment where it will be readily visible and legible to the employees and patrons of the establishment.

#### *Section 300.05. Training Requirements*

(A) All persons who own, or are employed in the operation of, deemed approved activities under Article III of this Chapter, and who are personally engaged in the sale or service of alcoholic beverages or who supervise or otherwise control the sale or service of such beverages may be required to undergo a certified training program in responsible methods and skills for selling and serving alcoholic beverages as part of a decision and order issued in a proceeding to revoke or modify the deemed approved status.

(B) To meet the requirements of this section a certified program must meet the standards of the California Coordinating Council on Responsible Beverage Service or other certifying/licensing body designated by the State of California.

*Section 300.06. Notification to Owners of Deemed Approved Activities and Owners of Property*

The City or its designated enforcement authority shall notify the owner of each deemed approved activity, and also, if not the same, any property owner at the address shown on the City's property tax assessment records, of the activity's deemed approved status. The notice shall be sent by U.S. First Class Mail and Certified Mail Return Receipt Requested and shall include a copy of the performance standards in Section 300.04 of this Chapter with the requirement that they be posted in a conspicuous and unobstructed place visible from the entrance of the establishment for public review. This notice shall also provide that the activity is required to comply with all performance standards; that a review fee is required, the amount of such fee shall be as established or amended by the city council; and that the activity is required to comply with all other aspects of the deemed approved regulations. Should the notice be returned, then the notice shall be sent via regular U.S. Mail. Failure of any person to receive notice given pursuant to this section shall not affect the deemed approved status of the activity.

*Section 300.07. Enforcement*

The City shall designate the appropriate personnel to enforce the provisions of these regulations and conduct the Outreach and Education Program and Monitoring and Enforcement Activities.

*Section 300.08. Outreach and Education Program and Monitoring and Enforcement Activities*

(A) *Outreach and Education Program.* Within six months of the enactment of this legislation, the Director of the Department of Public Health, or his or her designee, in cooperation with the Chief of the Police Department or his or her designee, shall develop and implement an outreach and education program to educate deemed approved activities about the steps each use may take to operate as a good neighbor in their communities, to avoid nuisance behaviors, and to abide by requirements of this Chapter. This education and outreach program shall be based upon a public health/environmental

approach to the prevention of alcohol-related nuisances and may include providing written materials on responsible retailer-related local and state laws to all deemed approved activities. The outreach and education program shall be directed to all deemed approved activities, relevant business associations, and residential and commercial property owners and tenants within one block of a deemed approved activity. The outreach and education program shall include:

This education and outreach program shall be based upon a public health / environmental approach to the prevention of alcohol-related nuisances.

(1) The development and distribution of informational packets on the requirements and benefits of this Article and of other educational materials, including, but not limited to, culturally and linguistically appropriate informational posters, brochures, and other materials for display at deemed approved activities.

(2) Commencing within six months of the enactment of this legislation, biennially the Department of Public Health shall provide educational sessions for operators of deemed approved activity at multiple locations throughout the City. Owners and operators of deemed approved activities who do not attend at least one educational session every two years shall receive an educational site visit from the Department of Public Health. This visit should be coordinated with and, when possible, conducted with Police Department personnel.

(3) Coordination of community stakeholder meetings, which should include representatives from City departments, the owners or operators of the deemed approved activities, business associations, the Small Business Commission,



the Youth Commission, and neighborhood associations and community organizations.

The Police Department, in cooperation with the Department of Public Health, may promulgate additional education, outreach, and administrative requirements for Deemed Approved Alcoholic Beverage Sales Regulations as are necessary to ensure successful implementation of the Deemed Approved Alcoholic Beverage Sales Regulations.

(B) *Monitoring and Enforcement Activities.* Within six months of the enactment of this legislation, the City will create a Monitoring and Enforcement Activities (“MEA”) that will be responsible for monitoring businesses that sell alcoholic beverages and for enforcement of this Article. The MEA will be comprised of a City Attorney, a City Planner, a Neighborhood Services Liaison from the City Manager’s Office, a Code Inspection Officer and a Police Officer. Each member’s responsibilities will correspond to his or her authority and expertise. The MEA will work cooperatively with other departments of the City to ensure that all alcoholic beverage sales activities are in compliance with this Article.

(C) *Annual Administrative Program Fee.* The owner of each deemed approved activity shall pay an annual administrative program fee, referred to in Sections 200.05(A)(6) and 300.04(B)(6), to cover the cost of administering the Outreach and Education Program and Monitoring and Enforcement Activities. The amount of the fee will be established by the City Council and will be included in the City’s Master Fee Schedule. The fee may be adjusted as necessary to ensure that the revenues collected do not exceed the costs incurred by the City for alcohol regulation. The fee shall be non-refundable.

#### *Section 300.09. Deemed Approved Status Procedure*

(A) *Administrative Hearing Officer.* The City shall appoint one or more neutral Alcoholic Beverage Sales Administrative Hearing Officers (“Hearing Officer”). The neutral Hearing Officer shall conduct administrative hearings, make findings and determine whether violations of this Article, including the deemed approved performance standards, conditions of approval, objectional

impacts, undue negative impacts or public nuisance activity, have occurred, are occurring, or are likely to occur in the future. A neutral Hearing Officer shall be an impartial individual, without a vested interest in either the deemed approved activity or a complainant against the deemed approved activity, and may not be a current City employee or City official, whether elected or appointed. Notwithstanding the foregoing, a contracted Hearing Officer shall not be considered a City employee for the purposes of this Article. The retention and compensation of the Hearing Officer shall not be directly or indirectly conditioned upon the amount of penalties or costs awarded by the officer. The assigned Hearing Officer shall exercise all powers relating to the conduct of the administrative hearing unless or until the decision of the Hearing Officer is appealed to the [Board of Zoning Adjustment/ Zoning Administrator/Planning Commission].

(B) *Inspection, Notice of Violations, and Re-Inspection and Citation Process.* Upon the city’s receipt of a complaint from the public, police department, city official, or any other interested person that a deemed approved use is in violation of the performance standards set forth in section 300.04 of this Article, the following procedure shall be followed:

An MEA [Code Inspection Officer/Police Officer (“Officer”)] will assess the nature of the complaint and its validity by conducting an on-site observation and inspection of the premises to assess the activity’s compliance with performance standards. The MEA officer will provide the business owner and any manager on the premises during the on-site inspection with a copy of any complaint made in writing or with information about the details of any oral complaint.

If violations are observed during the observation and inspection, the MEA officer will record the violations and send via both U.S. First Class mail and Certified Mail Return Receipt Requested a Notice to Abate to the owner of the deemed approved activity and the property owner, if not the same person or entity. Such Notice to Abate shall notify the owner and property owner of the violations recorded by the MEA and that continued non-compliance may result the penalties set forth in section 300.09(E) of this Article, and shall set forth of a reasonable period of not less than 30 calendar days within which to abate any violations.

At the end of the abatement period prescribed in the Notice to Abate, the MEA will conduct a

reinspection visit. If the violations have not been abated within the prescribed abatement period and the MEA officer determines that it is reasonably unlikely that further MEA efforts to compel compliance with performance standards by the owner of the deemed approved activity is likely, the MEA shall determine that the deemed approved activity is in persistent violation of the performance standards and shall refer the matter and all material evidence to the Hearing Officer for adjudication pursuant to section 300.09(C) of this Article. A copy of the MEA officer's determination of continued non-compliance shall be sent via both U.S. First Class Mail and Certified Mail Return Receipt Requested to the owner of the deemed approved activity and the property owner, if not the same person or entity.

*(C) Procedure for Consideration of Violations of Performance Standards.* Upon referral from the MEA officer that a deemed approved activity is in persistent violation of the performance standards of section 300.04 of this Article, the operating status of the deemed approved activity in question shall be reviewed by the Hearing Officer at a public hearing. Notification of the public hearing shall be in accordance with Section 300.09(H) below.

The purpose of the administrative hearing is to receive information as to whether the deemed approved activity is in compliance with the performance standards.

The Hearing Officer shall determine whether the deemed approved activity is in compliance with the performance standards. Based on this determination, the Hearing Officer may continue the deemed approved status for the use in question, may impose administrative penalties for violations of the performance standards, may impose such reasonable conditions as are in the judgment of the Hearing Officer necessary to ensure compliance with the performance standards, and may revoke the deemed approved activity's deemed approved status. If the Hearing Officer determines instead to impose further, new conditions on the deemed approved activity, such conditions shall be based upon the information then before the Hearing Officer.

In reaching a determination as to whether a use has violated the performance standards, or as to the appropriateness of imposing conditions on a use, revoking a use, assessing administrative penalties, or the amount of administrative penalties to assess, the

Hearing Officer may consider:

- (1) The length of time the deemed approved activity has been out of compliance with the performance standards; and
- (2) The impact of the violation of the performance standard(s) on the community; and
- (3) Any information regarding the owner of the deemed approved activity's efforts to remedy the violation of the performance standard(s).

"Efforts to Remedy" shall include, but are not limited to:

- (1) Timely calls to the Police Department that are placed by the owner of the deemed approved activity, his or her employees, or agents.
- (2) Requesting that those persons engaging in activities causing violations of the performance standard(s) cease those activities, unless the owner of the deemed approved activity, or his or her employees or agents feels that their personal safety would be threatened in making that request.
- (3) Making improvements to the deemed approved activity's property or operations, including but not limited to the installation of lighting sufficient to illuminate the area within the use's property line, the installation of security cameras, clear unobstructed windows, clean sidewalks, and graffiti abated within three days.

If in the judgment of the Hearing Officer, the operations of the owner of the deemed approved activity constitute a nuisance, the owner is unable to abate the nuisance, and the nuisance is shown to be a significant threat to the public health and safety of the surrounding neighborhood, the Hearing Officer may revoke the activity's deemed approved status. Any continued operation of the business shall require a conditional use permit approved by the [Administrator/Commission/Board].

The decision of the Hearing Officer shall be based upon all information received at the administrative hearing, including, but not limited to, information compiled by City staff, testimony from the owner of the deemed approved activity, and the testimony of all other

interested persons. Any conditions imposed by the Hearing Officer shall be a condition of the deemed approved activity's continued operation. [Any condition imposed by the Hearing Officer shall not be considered a suspension, revocation, or withdrawal of a deemed approved activity's use permit.]

All determinations, decisions, and conditions made or imposed under this Article regarding the use of a deemed approved activity shall run with the land.

(D) *Specific Conditions.* Reasonable conditions may be imposed to ensure compliance with the performance standards including but not limited to the conditions listed in section 200.08, Article II.

(E) *Administrative Penalties.* The Hearing Officer may assess administrative penalties against the owner of the deemed approved activity of no less than \$500.00 and no more than \$1,000.00 for each violation of a performance standard. If the violation is of a continuing nature, the Hearing Officer may impose a penalty for each day the violation remains.

Any violation of any provision of these regulations shall be and is declared to be contrary to the public interest and shall, at the discretion of the City, create a cause of action for injunctive relief.

In addition to the punishment provided by law, a violator is liable for such costs, expenses, and disbursements paid or incurred by the City or any of its contractors in correction, abatement, and prosecution of the violation. Reinspection fees to ascertain compliance with previously noticed or cited violations shall be charged against the owner of the deemed approved activity. The inspection official shall give the owner or other responsible party of such affected premises a written notice showing the itemized cost of such chargeable service and requesting payment thereof. Should the bill not be paid in the required time, the charges shall be placed as a lien against the property.

If payment of any administrative penalty imposed by the Hearing Officer is not received by the City Administrator within the period of time set forth in the decision, and the decision has not been appealed under the time periods set forth in subsection G, the City Administrator shall request that the Tax Collector pursue collection of the penalty and fee against the owner of the deemed approved activity, up to and including imposition of a special

assessment lien in accordance with the requirements of the City's municipal code. In the event that the unpaid administrative penalty is owed by an owner of a deemed approved activity who is not also the property owner of the building in which the use is located, the City Administrator may request that the City Attorney pursue collection of the penalties.

(F) *Method and Form of Decision of the Hearing Officer.* The Hearing Officer shall, within a reasonable time not to exceed thirty 30 days from the date the hearing is closed, submit to the City Administrator a written decision containing a brief summary of the information considered and the Hearing Officer's findings and conclusions, including any conditions that are to be placed on the deemed approved activity and any administrative penalties to be imposed. The Hearing Officer's written decision shall also inform the parties of their right to appeal the written decision and describe the appeal process. The Hearing Officer's written decision shall be a public record. The City Administrator shall serve a copy of the decision on each party by either personal service or by U.S. First Class mail and Certified Mail Return Receipt Requested. Service of the decision shall be deemed complete at the time it is personally served or deposited in the mail with the correct amount of postage affixed. Failure to receive a copy of the decision served pursuant to this section shall not affect the validity of the decision. The City Administrator shall also provide a copy of the written decision to the Director of the Planning Department, the Chief of the Police Department, the Director of the Department of Public Health, the Director of the Department of Building Inspection, and the City Council.

The decision of the Hearing Officer shall become final ten days after the service of the decision is deemed complete unless appealed to the [Board of Zoning Adjustment/Zoning Administrator/Planning Commission] or, in the case of a decision to revoke the deemed approved status of the alcoholic beverage sales activity, to the City Council, in accordance with subsection J.

In the event there is a negotiated settlement for conditions of approval between the City, the owner of the deemed approved activity and the property owner if not the same person or entity as the owner of the deemed approved activity, the settlement shall constitute the decision of the Hearing Officer for the purpose of a first hearing in the matter. Any subsequent violations of the conditions of approval,



performance standards or any other part of this Article may result in a public hearing to revoke the deemed approved status.

(G) *Procedure for Consideration of Violations of Conditions of Approval.* In the event of a violation of any of these regulations, or upon evidence that there has been a failure to comply with any prescribed conditions of approval, the Hearing Officer may hold a public hearing. Notification of the public hearing shall be in accordance with subsection H below.

In the event of a failure to comply with any prescribed condition imposed by the Hearing Officer or with any performance standard, at the request of the City Attorney, another administrative hearing may be set. Notification of this hearing shall be in accordance with subsection H.

The purpose of this administrative hearing is to receive information and determine whether violations to any condition attached to the deemed approved activity have occurred. The hearing shall be conducted as provided in Section C. The Hearing Officer may add to or amend the existing conditions based upon the information presented; may impose additional administrative penalties, or may revoke the deemed approved activity's deemed approved status and/or impose administrative penalties. Any continued operation of a deemed approved activity shall require a conditional use permit approved by the [Board of Zoning Adjustment/Zoning Administrator/Planning Commission]. The provisions of Subsection F concerning the Hearing Officer's written decision shall be followed. The decisions of the Hearing Officer shall become final ten calendar days after the date of decision unless appealed to the [Commission/ Board].

(H) *Notification of Public Hearings.* The City Administrator shall notify the owner of the deemed approved activity and the property owner, if not the same person or entity as the owner of the deemed approved activity, of the time and place of the public hearing. Such notice shall be sent via U.S. First Class mail and Certified Mail Return Receipt Requested, and shall include notification that the activity's compliance with performance standards will be considered before the Hearing Officer. Notice by mail is deemed given on the date the notice is placed into the U.S. Mail system.

The hearing shall be noticed to the general public by posting notices within 300 feet of the subject

property; notice shall also be given by mail or delivery to all persons shown on the last available equalized assessment roll as owning real property in the City of \_\_\_\_\_ and all residents residing within 300 feet of the subject property. All such notices shall be given or posted not less than twenty-one (21) days prior to the date set for the hearing. Fees for notification shall be in accordance with Section \_\_\_\_\_ of the City of \_\_\_\_\_ Zoning Ordinance and paid for by the activity in question.

A 20 inches by 30 inches notice, provided by the City, shall also be posted on the premises of the subject activity, placed in the window of the activity (if a window facing the street is not present, then posted on the exterior of the building).

All notices shall advertise the time, date, purpose and location of the public hearing.

(I) *Appeal to [Board of Zoning Adjustment/Zoning Administrator/Planning Commission] de Novo.* Within ten calendar days after the determination of the Hearing Officer an appeal may be taken to the [Board of Zoning Adjustment/Zoning Administrator/Planning Commission] by the owner of the deemed approved activity or any other interested party. In the event the last date of appeal falls on a weekend or holiday when City offices are closed, the next date such offices are open for business shall be the last date of appeal. The appeal shall be made on a form prescribed by the City. The appeal shall state specifically why it is claimed there was an error or abuse of discretion by the Hearing Officer or why the decision is not supported by the evidence in the record. The appeal shall be accompanied by sufficient information as may be required to facilitate review. Upon receipt of the appeal and the required appeal fee, the [Board of Zoning Adjustment/Zoning Administrator/Planning Commission] shall set the date for its consideration, and shall, not less than twenty-one (21) days before the hearing, give written notice to: the owner of the deemed approved activity; the property owner, if not the same person or entity as the owner of the deemed approved activity, the appellant; the adverse party or parties, or to the attorney, spokesperson, or representative of such party or parties; other interested groups and neighborhood associations who have requested notification; and to similar groups and individuals as appropriate, of the time, date and place of the hearing on the appeal.

In considering the appeal, the [Board of Zoning Adjustment/Zoning Administrator/Planning

Commission] shall determine, de novo, whether the alcoholic beverage sales activity conforms to the applicable performance standards and/or conditions of approval, and may continue or revoke the deemed approved status; or require such changes in the existing use or impose such reasonable conditions of approval as are, in its judgment, necessary to ensure conformity with the performance standards.

The [Board of Zoning Adjustment/Zoning Administrator/Planning Commission] shall decide the appeal within thirty (30) days after its first hearing of the appeal. If the [Board of Zoning Adjustment/Zoning Administrator/Planning Commission] is unable to decide the appeal at that meeting, it shall appear for a vote on each regular meeting of the [[Board of Zoning Adjustment/Zoning Administrator/Planning Commission] thereafter until decided. If the [Board of Zoning Adjustment/Zoning Administrator/Planning Commission] does not decide the appeal within the prescribed time period, the decision of the Hearing Officer shall be final.

The decision of the [Board of Zoning Adjustment/Zoning Administrator/Planning Commission] on the appeal to the conditions of approval imposed by the Hearing Officer shall be final.

(J) *Appeal on the Revocation of a Deemed Approved Status to [Board of Appeals/City Council] de Novo.* Within ten calendar days after the date of a decision by the [Board of Zoning Adjustment/Zoning Administrator/Planning Commission] to revoke the deemed approved status, an appeal may be taken to the [Board of Appeals/City Council] by any interested party. In the event that the last date of appeal falls on a weekend or holiday when City offices are closed, the next date such offices are open for business shall be the last date of appeal. The appeal shall be made on a form prescribed by the City and shall be filed with the City Clerk. The appeal shall state specifically why it is claimed there was an error or abuse of discretion by the [Board of Zoning Adjustment/Zoning Administrator/Planning Commission] or why its decision is not supported by the evidence in the record. Upon receipt of the appeal and the required appeal fee, the Council shall set the date for its consideration. The City Clerk shall notify the Secretary of the [Board of Zoning Adjustment/Zoning Administrator/Planning Commission] of the receipt of the appeal and of the date set for its consideration. The Secretary of the [Board of Zoning Adjustment/Zoning

Administrator/Planning Commission] shall, not less than twenty-one (21) days before the hearing, give written notice to: the owner of the deemed approved activity; the property owner, if not the same person or entity as the owner of the deemed approved activity, the appellant; the adverse party or parties, or to the attorney, spokesperson, or representative of such party or parties; other interested groups and neighborhood associations who have requested notification; and to similar groups and individuals as appropriate, of the time, date and place of the hearing on the appeal.

In considering the appeal, the [Board of Appeals/City Council] shall determine whether the deemed approved activity conforms to the performance standards, and may approve or disapprove the revocation of the deemed approved status, or require such changes therein or impose such reasonable conditions of approval as are in its judgment necessary to ensure conformity to the performance standards.

The decision of the [Board of Appeals/City Council] shall be made by resolution and shall be final. The [Board of Appeals/City Council] shall vote on the appeal within thirty (30) days after its first hearing of the appeal. If the [Board of Appeals/City Council] is unable to decide the appeal at that meeting, it shall appear for a vote on each regular meeting of the [Board of Appeals/City Council] thereafter until decided.

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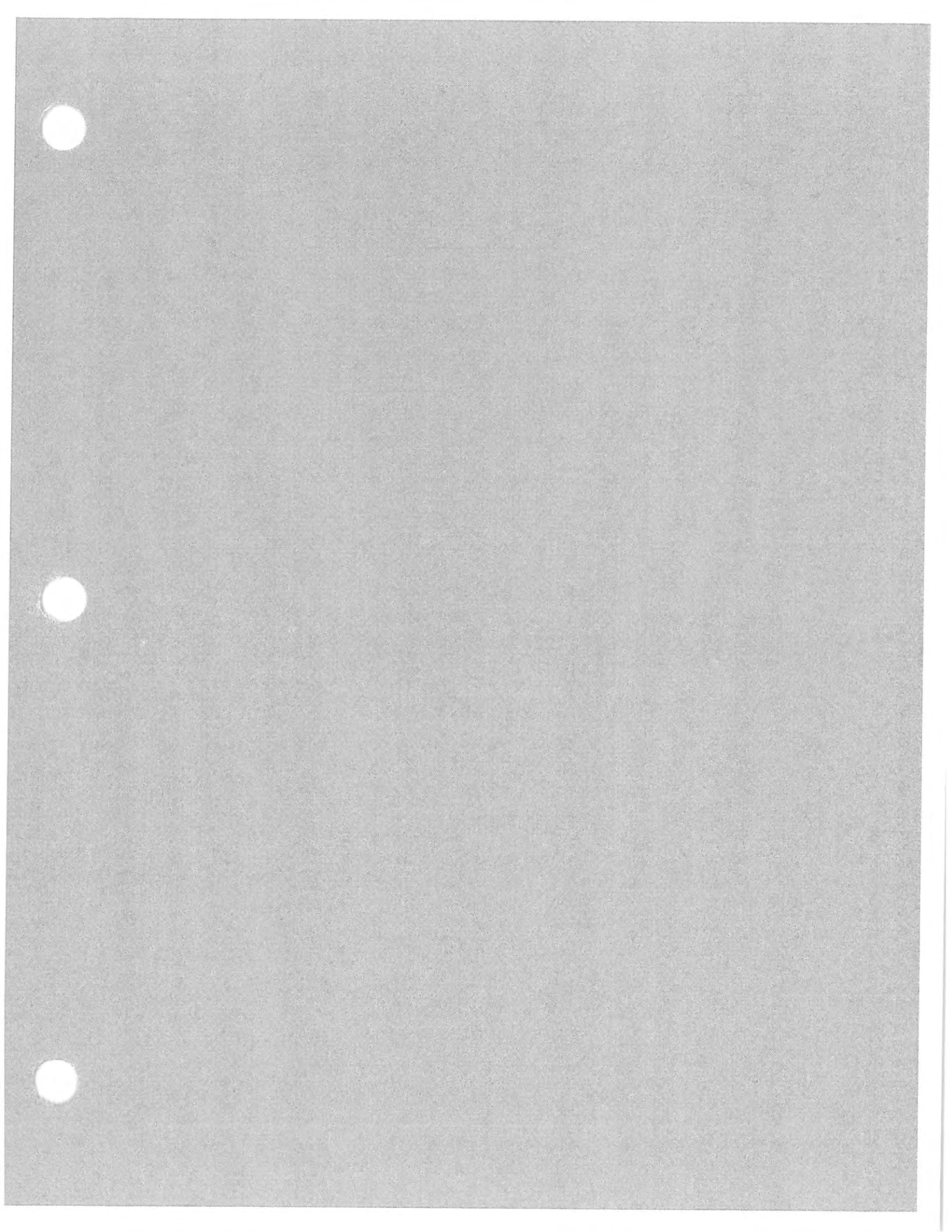
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## End Notes

- i For a review of the research regarding alcohol retail outlets and community problems see: Stewart, K., *How Alcohol Outlets Affect Neighborhood Violence*. Berkeley, CA: Prevention Research Center, Pacific Institute for Research and Evaluation (no date). Accessed online at: <http://resources.prev.org/documents/AlcoholViolenceGruenewald.pdf> (cited October 3, 2007).
- ii For further discussion, see Wittman, F.D. *Manual for Community Planning to Prevent Problems of Alcohol Availability*. Berkeley, CA: Institute for the Study of Social Change, April 1988; Sparks, M. *Tools for Regulating Local Alcohol Availability, Literature Review*. Community Prevention Institute Prevention Training Workshop Series. Produced for the California Department of Alcohol and Drug Programs (2002). Request at [cpinfo@cars-rp.org](mailto:cpinfo@cars-rp.org)
- iii For further discussion of the state preemption doctrine, see: Gorovitz, E., Mosher, J., & Pertschuk, M. *Preemption or prevention?: Lessons from efforts to control firearms, alcohol and tobacco* *J. Pub. Health Policy* 19(1):37-50 (1998); Mosher, J. *The Perils of Preemption*. Briefing paper. Chicago, IL: American Medical Association, 2001.
- iv Local governments have the authority to enact local planning and land use regulations to protect the public health, safety, and welfare of their residents through their police power. The "police power" provides the right to adopt and enforce zoning regulations, as long as they do not conflict with state laws. (See Cal. Const. art. XI, § 7; *Sullivan v. City of Los Angeles* (1953) 116 Cal. App. 2d 807, 810, 254 P.2d 590 (1953) (building regulations); *Schroeder v. Municipal Court* (1977) 73 Cal. App. 3d 841, 848, 141 Cal. Rptr. 85 (zoning regulations).
- v See *Korean American Legal Advocacy Foundation v. City of Los Angeles* (1994) 23 Cal.App.4th 376, 397, 28 Cal.Rptr.2d 530 ("grandfathered" businesses are nonconforming uses that are not required to seek permits under local zoning ordinances enacted after they were in business.")
- vi California Business and Professions Code section 23790 provides: "No retail license shall be issued for any premises which are located in any territory where the exercise of the rights and privileges conferred by the license is contrary to a valid zoning ordinance of any county or city unless the premises had been used in the exercise of such rights and privileges at a time prior to the effective date of the zoning ordinance." California Government Code section 65901 authorizes cities to issue conditional use permits when authorized to do so by local ordinance.
- vii Government Code section 65030 recognizes the importance of public participation in public hearings and expresses a clear legislative intent that local agencies ensure public participation at every level of the conditional use permit process.
- viii The California Supreme Court permits the abatement of even a grandfathered business if it constitutes a nuisance. In one case, the California Supreme Court reasoned that zoning laws do not customarily interfere with existing conditions, but regulate future use of land. If a business constitutes a nuisance, however, it can still be abated in a proper exercise of the police power. (*Jones v. City of Los Angeles* (1930) 211 Cal. 304, 311, 295 P. 14.) In another case, the court reaffirmed the rule that the right to continue a previously existing lawful business may be revoked if the business is found to be a nuisance, on the ground that the abatement of such an existing business would be a lawful exercise of the police power. (*Livingston Rock etc. Co. v. County of L.A.* (1954) 43 Cal.2d 121, 128, 272 P.2d 4.)
- ix Cities are constitutionally authorized to make and enforce within their limits all local, police and sanitary ordinances and other such regulations not in conflict with the general laws. (Cal. Const., Art. XI, § 7.) California Government Code section 38771 provides, "By ordinance the city legislative body may declare what constitutes a nuisance." The California Supreme Court has observed: "[E]ven without this section cities would have the power to abate public nuisances (Code Civ.Proc., § 731) ... it seems evident that Government Code section 38771 does more than permit cities to adopt as municipal ordinances provisions which have already been enacted as state statutes; such an interpretation would make the section superfluous." (*City of Bakersfield v. Miller* (1966) 64 Cal.2d 93, 100, 48 Cal.Rptr. 889, 410 P.2d 393.)  
The state preemption doctrine does not prevent the application of local nuisance abatement regulations to a business licensed to sell alcohol prior to the enactment of the ordinance. (*Suzuki v. City of Los Angeles* (1996) 44 Cal.App.4th 263, 51 Cal.Rptr.2d 880 (nuisance abatement ordinance at issue applied to any business, whether or not it sold alcoholic beverages, as long as the business operated and maintained constituted a nuisance).)
- x Business and Professions Code Section 23958 et seq.
- xi See, e.g., U.S. Dep't of Health & Human Servs. Substance Abuse and Mental Health Services Administration Center for Substance Abuse Prevention (SAMHSA/CSAP). Grover, P.L., ed. *Prevention Enhancement Protocols System (PEPS): Preventing Problems Related to Alcohol Availability: Environmental Approaches, Practitioner's Guide*. Washington, D.C.: U.S. Dep't of Health & Human Servs., Publication No. (SMA) 99-3298. Accessed online at <http://www.ncbi.nlm.nih.gov/books/bv.fcgi?highlight=related,problems,preventing,environmental,availability,alcohol&rid=hstat5.on-site.15922> (cited 31 May 2007).







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COMMUNITY PREVENTION INITIATIVE (CPI)

# POLICY BRIEF

## Restaurants that “Morph” into Bars and Nightclubs in California Communities: What’s the Problem and What Can Be Done About It?



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## Restaurants that “Morph” into Bars and Nightclubs in California Communities: What’s the Problem and What Can Be Done About It?

### SETTING THE SCENE: AN INSIDE LOOK AT MORPHING IN SAN LUIS OBISPO, CA.



*At about 10:00 pm, downtown San Luis Obispo (SLO) changes dramatically from its daytime uses—shopping, tourism, dining, city government, professional offices—to a nighttime bar scene of large drunken crowds surging between a dozen or so establishments in a six-block area. A lively music scene and drink specials encourage the crowd—mostly between the ages of 18 and 25, many of them Cal Poly students—to stay longer and drink more. Some have “pre-loaded” or had drinks before coming downtown. ID checking is difficult with noisy and impatient crowds, and many patrons continue to be served despite*

*their apparent drunkenness. At 2:00 am closing time, patrons from these establishments transition to the street, many of them inebriated and some falling-down drunk. (Figs. 1-6)<sup>1</sup>*

The scene described here is a pressing issue in cities across California. According to research by CLEW Associates, the problems stem primarily from restaurants that shift or “morph” their main operations from food consumption during the day to alcohol sales at night. According to the Chief of Police for SLO, for many years this scene went on night after night, intensifying on weekends. After years of allocating police resources aimed at problematic intoxicated patrons, city leadership embarked on a planning process directed toward working with restaurant owners and managers to reduce these problems through land-use planning and zoning laws in combination with law enforcement. SLO now offers a model for other cities seeking to mitigate these problems using local tools readily available to all California municipalities.<sup>1</sup>

While the need for public attention to problems with morphing may not be immediately apparent, tracking of police logs and close monitoring of these events illuminate the negative impacts on public safety and drains on community/municipal resources. In SLO, a study of annual police calls-for-service revealed that of nearly 1,000 police incidents occurring at the city’s 85 on-sale outlets, three-fifths of the incidents (nearly 600) occurred at just 10 Downtown establishments. According to the Chief of Police, four police officers were assigned to manage these late-night crowds. The officers contended with under-age drinkers, fights, unwanted sexual advances among patrons, violence, property damage, disturbances to neighbors, and DUIs. The cost for extra police support was borne by the city, not by establishments where the problems originated.

When morphing is concentrated and unregulated, the consequences run deep. Individual drinkers and their families, bystanders and neighbors all feel the impact. Treatment for medical emergencies and harm falls on health providers and on public health services. Costs of property damage fall on neighboring property owners and insurance companies. The legal and economic aftermath falls on the judicial system and on employers.

This Policy Brief looks at the issue of restaurant morphing in depth. What is morphing and how does it lead to problems? Where does morphing occur? How did morphing begin and how does it spread? Who is responsible for preventing and reducing problems related to morphing? What actions are being taken by the California Department of Alcoholic Beverage Control (ABC) and local communities to prevent and reduce (mitigate) these problems? What more can be done? A case example explores one city’s efforts to develop an effective preventive approach.

<sup>1</sup> Comments and images presented by Chief Deborah Linden, San Luis Obispo Police Dept, at the Alcohol Policy XV Conference held in Washington, DC on December 7, 2010: Session C-28 *How California restaurants morph into bars and what the state ABC and cities are doing about it*.





## What is morphing and how does it contribute to problem behaviors and unlawful practices?

In California, far more drinking occurs at establishments licensed by the Alcoholic Beverage Control (ABC) as “restaurants” than at those licensed as “bars.” Significant problems occur at some restaurants that serve meals during the day, then morph into bar/nightclub operations at night. Most restaurants make this shift, which is permitted by ABC regulations, without creating visible problems. However, a small number of outlets licensed as “restaurants” generate high levels of police events. Research shows that about ten percent of restaurants in a given community

create about 50 to 60 percent of total police events out of all restaurants in that community, mostly between 10:00 pm and 2:00 am (ABC mandatory closing hours for alcohol sales).<sup>2</sup>

According to analysis of police events and on-site observations,<sup>3</sup> problematic morphing of bars and restaurants occurs especially when patrons engage in high levels of drinking and drunkenness in the context of large crowds and overcrowded premises. Excessive drinking and drunkenness lead to noise, fights and confrontational behavior, unwanted sexual advances, and other behavior. High levels of drinking in highly crowded conditions are especially difficult to control and are likely to disturb neighbors and damage nearby property. Venues that include dancing, live DJs and on-stage entertainment may be especially susceptible. Taken together these conditions pose major challenges for even the most capable management and most diligent oversight agencies.

### Where does morphing occur?

A recent survey of Alcoholic Beverage Control (ABC) district offices<sup>4</sup> revealed problems associated with morphing to be pervasive throughout the state. District office respondents confirmed studies of local police events showing that a small number of outlets create a disproportionate number of police events in each local jurisdiction.<sup>5</sup> Respondents reported that morphing has been a troublesome part of restaurant operations for many years in all regions of the state, in large and small cities, in suburbs, and in rural areas. Some respondents reported that morphing has remained relatively steady over the past several years while others said it has been increasing. \*

Studies using local police data provide a more prescriptive view, defining problematic morphing as more likely to occur in high-density locations. Most often these locations are downtown entertainment districts or suburban shopping malls, where multiple restaurant-bar establishments are clustered in a relatively confined area. Some of these areas catch on as late-night destinations that attract patrons from other cities. Marketing of special promotions and social networking through electronic media attract large crowds. Restaurants offering entertainment venues near large college campuses and in “hospitality” zones attract young people from out of town along with nearby college students and local youth.<sup>6</sup>

2 F. D. Wittman, “Lessons from Three Orange County Cities: Municipal Responses to Rapid Growth of Problems at On-Sale Retail Alcohol Outlets,” California Prevention Collaborative Annual Meeting, Napa, California, March 8-10, 2009. Prepared under Orange County Health Care Agency Contract MA-042-10010415 to CLEW Associates, Berkeley, California

3 K. Graham and H. Morel, *Raising the Bar: Preventing aggression in and around bars, pubs, and clubs*. Willan Publishing, Portland, Oregon, 2008.

4 F.D. Wittman and F. Latham, *Survey Report and Findings: ABC District Office Experiences with Restaurants that Morph into Bars and Nightclubs*. Prepared for the Center for Applied Research Solutions, Sacramento, under contract to the California Dept of Alcohol and Drug Programs. Prepared by CLEW Associates, Berkeley, California. July 6, 2011.

5 F.D. Wittman and J. Harding, *ASIPS/GIS Community Tour reports prepared for the Orange County Health Care Agency ADEPT (Alcohol Drug Education Prevention and Training)* by CLEW Associates, Berkeley, California, for three cities:

City of Fullerton (CY 2007-2010); City of Newport Beach (CY 2008-2010); City of Garden Grove (CY 2007-2010).

6 Comments by Police Chief, San Luis Obispo PD, during presentation to San Luis Obispo City Council October 20, 2009, and at meeting on May 23, 2011, hosted by Capt. Dan Hughes, Fullerton PD, to review City of Fullerton ASIPS/GIS Community Tour data.



Suburban communities that look to restaurants as key downtown development projects often experience unexpected and rapid rise in the density of bar-restaurants and nightclubs, rather than or in addition to additional restaurants, in the development area. This increase is accompanied by a spike in late-night police events. Cities that offer “destination” entertainment and tourism districts, such as San Luis Obispo, Newport Beach, San Francisco, and Santa Barbara, attract large numbers of people that require a constant higher level of police supervision to protect public safety, manage large crowds and maintain public order.<sup>7</sup>

### How has morphing grown to become a problem?

How has the shift from restaurant service during the day to night-time bar/nightclub activity become troublesome in so many California communities? Three sets of circumstances have evolved over the past fifty years that help explain the rise of problematic morphing.

- \* (1) The restaurant industry has evolved from traditional dining, emphasizing meal service that includes alcohol only as an incidental part of the meal, to focus on a “hospitality” experience that blends dining, drinking and entertainment in an expanding environment of high-density community development and social networking.
- \* (2) The California State ABC is struggling to keep pace with restaurant industry growth and oversight for the industry’s evolution toward more drinking and entertainment. State licensing codes are out of date, staffing levels for monitoring and enforcement have decreased, and training resources have declined. These circumstances are putting pressure on local jurisdictions to participate more actively in oversight functions.
- \* (3) Despite the industry shift and decline of State resources, most local jurisdictions have not stepped up their oversight at the community level. Most cities and counties continue to rely on reactive law enforcement to address problems rather than make preventive use of their land-use and zoning powers designed to support ongoing oversight of retail alcohol outlets (and all other land uses). However, a handful of municipalities are making promising, innovative use of local planning and zoning powers to address problems with morphing.

## 1. EVOLUTION OF THE RESTAURANT/HOSPITALITY INDUSTRY INCREASES FOCUS ON ALCOHOL SALES



The restaurant industry has evolved from locally-owned businesses to include regional and national chain operations. With this change, restaurants have expanded their functions to include socializing, sports, and entertainment. Restaurants are a popular venue for promotions by the alcoholic beverage/hospitality industry. They are also principal components of city development and redevelopment plans. Alcohol sales represent a profitable source of revenue in an increasingly competitive environment both for the restaurateurs and the cities that authorize them.

*From mom-and-pop restaurant to hospitality enterprise.* In the mid-1950s the restaurant industry began expanding from an enterprise comprised solely of locally-owned establishments serving a local clientele to include national and regional chains of restaurants serving a mass market under central corporate direction. Several chains have chosen to emphasize drinking and include entertainment and special events/community activities. For example, the Red Robin grew from a single tavern near the University of Washington in the 1940s to a multi-city chain brand in 1980 offering “gourmet burgers and spirits.” The chain grew to 150 restaurants nationwide by the year 2000. In addition to food, the chain offers an elaborate menu of alcoholic beverages. Other free-standing national chains such as Chili’s, Applebee’s, Red Lobster, and Dave & Buster’s promote mixed drinks and offer a traditional bar built as part of the restaurant. These chains contrast with Denny’s (a small percentage of the chain’s outlets serve alcohol), Sizzler (which serves only beer and wine), and fast-food restaurants such as McDonalds, which do not serve alcohol.

<sup>7</sup> For example, the dedication of four police officers in San Luis Obispo to patrol of about a dozen late-night on-sales establishments in a high-concentration area exemplifies elevated police staffing levels required for entertainment zones in “destination” cities.



Beverages sales of all types, especially spirits-based mixed drinks, offer proven revenue growth and high profit margins as reported by top restaurant chains. With fewer people eating out in this latest recession, many restaurant chains looked to increased alcohol sales by bolstering nighttime activities, extending hours and marketing an “eatertainment” experience. Top restaurant chains have reported that late-night alcoholic beverages result in the largest increase in overall sales. For example, Applebee’s chains reported the highest margin of alcohol sales, 14%, in its history for 2010 (DineEquity Inc.). An Applebee’s franchise representative reported that “Our late night initiative has been really effective. It is centered on driving traffic from 9 p.m. to close. All [of our] Applebee’s are staying open to midnight or later now. We’ve revamped some of our happy-hour offerings, and we’ve introduced a higher level of activity, with louder music and lower lights. Really refocusing on being a bar” (Ruggles, 2011).<sup>8,9</sup>

Proliferation of bar-restaurants and entertainment venues is part of a larger pattern of urban and suburban development to accommodate higher population densities, pedestrian living, and urban excitement throughout the US over the last two decades. Large cities rebuild downtown and core neighborhood areas while suburban communities develop multi-use town centers and transit villages that include retail, residential, and entertainment activities along with day-time office uses. The hospitality industry and alcoholic beverage industry seek to include bars and restaurants as a major component of this development activity, working with local restaurant owners and real estate developers to advocate their joint interests. The Responsible Hospitality Institute (RHI), for example, funded in part by the alcoholic beverage industry, has a variety of programs and training sessions to support inclusion of recreational drinking and entertainment by “responsible” establishments in community development plans that create “vibrant” night-time economies in special entertainment districts and hospitality zones.<sup>10</sup>

How the State of California distinguishes between “bars” and “restaurants.” California Alcoholic Beverage Control Department (ABC) licensing categories for “restaurants” and “bars.” Despite having two separate categories, the ABC licensing system allows “restaurants” – places devoted mainly to serving meals – also to function as “bars” – places devoted mainly to drinking. California ABC regulations include five main license categories that distinguish bars from restaurants based on meal service and the type of alcohol served. (See statewide frequencies in Table 1). *Restaurants (where meals are served) are shown as Type 41 (Beer & Wine Restaurant License) or Type 47 (beer, wine and spirits, called a General Restaurant License). Note there are about twice as many Type 41 Beer & Wine licenses (22,500) as Type 47 General licenses (13,000). Bars (where meals are not served) are shown as Type 48 licenses.* (The ABC technical term for a “bar” is “public premises.”) There are about five times as many General license restaurants (Type 47) as General license bars (Type 48). Type 40 (Beer Bars) and Type 42 (Beer & Wine Bars) are shown here to present the full ABC inventory of on-sale retail alcohol outlets; however Type 40 and 42 licenses are few and do not contribute to problems with morphing.

Table 1. Description of ABC On-Sale License Types

Type	On-Sale License Description	No. of licenses in CA (2010)
40	On-Sale Beer (no meals)	1,064
41	On-Sale Beer & Wine Restaurant (bona-fide meals)*	22,450
42	On-Sale Beer & Wine Public Premises (Bars) (no meals)	1,348
47	On-Sale General Restaurant (bona-fide meals)	13,006
48	On-Sale General Public Premises (Bars) (no meals)	2,842

\*“Bona-fide meals” are regular meals (breakfast-lunch-dinner) prepared in a kitchen on premises

<sup>8</sup> Ruggless, Ron (2011), “A new happy hour,” Nation’s Restaurant News, March 21. Retrieved from <http://www.nrn.com/article/new-happy-hour>.

<sup>9</sup> For background discussion of the history of morphing and its control, see F.D. Wittman, “Restaurants that ‘morph’: Problems and prospects for prevention and mitigation.” Berkeley CA: CLEW Associates, July 15, 2011 (unpublished).

<sup>10</sup> See Responsibility Hospitality Website at [www.rhiweb.org](http://www.rhiweb.org)



**Police events related to ABC License Types**

*Type 47s stand out.* People usually think bars, rather than restaurants, are the primary source of drunkenness and other alcohol-related problem behaviors at on-sale outlets. When measured by police events, however, Type 47 licenses stand out as the ABC license type that receives the greatest number of police calls for AOD offenses, as well as total police events. In part, this occurs because there are more Type 47s than Type 48 bars in a given community. However, a detailed examination of community-level police data reveal troublesome outlets – measured by the frequency of calls for service and types of offenses – follow similar patterns for both Type 47 and Type 48. These patterns show up in types of calls-for-service, frequency of calls per outlet, and range of calls per outlet, illustrated below. These similarities indicate that troublesome Type 47 and Type 48 outlets are similar kinds of establishments, typically characterized as a loud or rowdy bar, associated with very high levels of alcohol consumption and unruly behavior by patrons.



Table 2 shows police events for a mid-sized California city (population 133,000) to illustrate these relationships.<sup>11</sup> The total rate of police calls per outlet is virtually the same for Type 47s and Type 48s. The rates per outlet for AOD-related events and for arrests are comparable, although somewhat higher for Type 48s. Also similar is the pattern of police events (relative number of alcohol law violations, drug offenses, assaults, disturbances, and other alcohol-related offenses). Note there are fewer calls for service to far more numerous Type 41 Beer & Wine restaurants (77 Type 41s compared to 49 Type 47s). Type 41s generate about one-fourth the rate of AOD calls per outlet, and less than one-sixth as many arrests, compared to Type 47s.

**Table 2. Police Events at On-Sale Alcohol Outlets in a Mid-Sized, Middle-Class Calif City  
Calls for Service by ABC License Type, CY 2010**

ABC Type	Nbr of Outlets in City	Total Calls for Service	Total Calls per Outlet	AOD Calls per Outlet	Arrests per Outlet
41	77	659	8.6	1.1	0.8
47	49	1,819	37.1	4.4	6.1
48	8	301	37.6	6.8	7.6

*High levels of police activity at licensed outlets.* Types 47s in this example city lead the alcohol outlets among the “Top Ten” outlets that generate ten or more AOD events annually (violations of alcohol/drug laws such as public drunkenness). The table below shows that four Type 47s, two Type 48s, and one Type 41 generate 10+ police calls for AOD-specific offenses during the year.

**Table 3. On-Sale Outlets with 10+ AOD-Specific Events, Ordered by AOD Events and Total Events, with Arrests, by Address (Calendar Year 2010)**

ABC Type	Establishment Type (Address not shown)	Total Events	AOD Events	Total Arrests
47	Café/Dancing*	152	39	32
41	Pizza Place*	115	28	6
47	Bar & Grill*	120	21	24
48	Bar*	100	16	22
47	Bar & Grill*	69	14	15

<sup>11</sup> City of Fullerton ASIPS/GIS Community Tour Report (CY 2010), prepared by CLEW Associates, Berkeley, California, under support from Orange County Health Care Services Agency ADEPT, August 25, 2010.



Table 3. On-Sale Outlets with 10+ AOD-Specific Events, Ordered by AOD Events and Total Events, with Arrests, by Address (Calendar Year 2010)

48	Bar	57	14	13
47	Cantina*	95	11	15
	Totals	708	143	127

\* This address also showed 10+ AOD Events in reports for CY 2008 and CY 2009

## 2. CALIFORNIA ABC IS CHALLENGED TO MAINTAIN UP-TO-DATE LICENSING FOR ON-SALE LICENSES

The current ABC system for licensing on-sales retail outlets, created as part of agency reform in 1956, has not kept pace with changes in the on-sale hospitality industry. The California State ABC processes on-sale licenses through nineteen District Offices located throughout the state. A recent survey of District Office experiences with morphing<sup>12</sup> identified four challenges faced by the ABC in managing problematic morphing in the burgeoning bar-restaurant industry: (1) Out-of-date ABC definitions for restaurants and bars; (2) Declining resources for licensee oversight, education and compliance; (3) Narrowly-focused and time-consuming policies for disciplinary action and license appeals; and (4) Dependence on local jurisdictions to participate in effective oversight of on-sale outlets.

### Out-of-date ABC license definitions for restaurants and bars

The ABC Act definitions currently in force for restaurants and bars have not been updated since they were enacted in 1957. The Act defines restaurants and bars as two distinct types of on-sale establishments:

- Restaurants, or “bona-fide eating places,” are defined by Business & Professions Code Section 23038; Bars, or “public premises,” are defined by B&P 23039 (see Appendix).

Bona-fide eating places are required to offer meals at customary times of day (e.g., breakfast, lunch, or dinner) that have been prepared in a kitchen on the premises. Persons under 21 are allowed on the premises. Public premises regulations do not permit meals to be served (though snack foods are allowed) and do not permit persons under 21 on the premises. Neither ordinance makes any reference to live music, dancing, or entertainment. The California ABC Act contains no definitions or regulations regarding nightclubs, dance-halls, or cabarets with live entertainment. The ABC permits these activities at restaurants and bars, at the discretion of the licensee and subject to local zoning ordinances. Definition of these activities is the purview of local land-use planning and zoning ordinances as described below.



The distinction between these two definitions has become distorted and unclear as bar-like functions have entered restaurant settings. California court decisions have determined that bar-like functions may occur within a licensed restaurant (for example, a separate bar-counter and lounge area), allowing a part of the larger “restaurant” facility to function like a bar.

### Declining resources for ABC licensee oversight, education and compliance

The current ABC Restaurant and Bar definitions were written in 1957 as part of a newly-minted agency reform with up-to-date legislation, a new charter, and a staffing level designed to provide a high level of on-site inspection

<sup>12</sup> Op. Cit., F.D. Wittman and F. Latham. Survey Report and Findings: ABC District Office Experiences with Restaurants that Morph into Bars and Nightclubs.



and oversight for on-sale outlets. Over the last forty years, ABC staffing levels have steadily declined and other services for training, compliance and oversight have been challenged to keep pace with the steady growth of retail outlets. The decline in resources relative to industry activity imposes challenges along the entire continuum of ABC oversight from license application review, to education and monitoring for compliance, to enforcement of alcohol laws.

*ABC staff resources have declined.* The ratio of alcohol outlets per ABC investigator has increased almost five-fold, going from one investigator per 220 outlets in 1965 to about one investigator per 1,000 outlets today, according to ABC figures. Said another way, currently the ABC has about the same number of staff it had in the 1950s to oversee about four times as many retail alcohol outlets today. These reductions have led the ABC to place increasing reliance on self-supervision by the licensee, and to encourage greater involvement by local jurisdictions and local community groups in retail outlet licensing and enforcement.



*Education and monitoring resources are voluntary, and meager.*

In response to community concerns, the ABC Central Office has developed well-regarded educational and monitoring resources to support self-supervision by licensees. ABC offers LEAD (Licensee Education on Alcohol and Drugs), a training program for both on-sale and off-sale operators. Help with bar-checks, surveillance, and Grants to Assist Police (GAP grants) also provide support for local jurisdictions. These services focus on techniques to prevent sales to minors and to inebriated persons, and on management practices to prevent disorderly operations.

These resources, offered at no charge on a voluntary basis, are popular with licensees, but the recent recession has led to cutbacks in the number of trainings offered. As a result, many licensees who want and need these services are not being reached. Among the licensees most in need of these services, and least likely to request them, are operators who create high levels of police problems and community disturbances.

- Responsible Beverage Service training. The ABC offers the Department's free LEAD training a few times each year in each District. ABC scheduled a total of 242 LEAD training sessions in 2012 to reach approximately 50,000 on-sale outlets. (RBS training is both highly valuable and poorly underutilized in other ways noted in the Conclusion.)
- Grants to assist local law enforcement agencies. The state provides competitive Grant Assistance Program (GAP) contracts to local law enforcement agencies to assist retail operators with compliance and enforcement of alcohol laws. The availability of these highly popular grants (52 in 2012) is well below the demand from the State's nearly 500 cities and 58 counties.
- Bar-checks and covert surveillance. Unannounced site-visits by the police and ABC investigators to licensed establishments help remind operators of the duty to follow alcohol laws closely. ABC provides training for local jurisdictions and limited on-site support for more serious cases.

*Narrowly-focused and time-consuming policies limit disciplinary action and license appeals*

*ABC procedures for case-level retail license enforcement and appeal are complex and demanding.* ABC license enforcement follows a highly demanding complaint-driven process initiated by a "protestant" from the community. Enforcement starts with collection of evidence by sworn officers (ABC or local law enforcement) to support formal proceedings. Once sufficient evidence has been collected, the ABC files a charge ("accusation") against the licensee. The accusation is heard by an Administrative Law Judge (ALJ) who rules narrowly on the specific violation in relation to the specific outlet address. These procedures require considerable time and effort by the ABC and by the protestant. Appeals through the ABC Director and the courts can add years and considerable expense to the process.



Methods are available to pinpoint high-risk outlets and address certain high-risk practices among outlets at the community level. The California ABC has developed several well-respected enforcement methods to address chronic community-level problems such as sales to minors (Decoy Buys) and multi-agency inspection of high-problem premises (Impact Program). These measures complement police DUI checkpoints for violation of drinking-driving laws and “place of last drink” studies that identify high-risk bars and restaurants. These expensive labor-intensive methods are not applied on a frequent or routine basis, except when cities in metro areas combine to use DUI checkpoints during certain holiday weekends.



*Impact of ABC shortfalls on operators of bars and restaurants.* A bar-restaurant operator who participates on a county DUI task force laments the lack of RBS training and enforcement of ABC laws against over-serving. This operator has written a private memoir<sup>13</sup> that describes his experiences opening a bar-restaurant that offered dancing and entertainment to a young Southern California clientele at a location near beaches and resorts. He started his new business with great enthusiasm, learning on the job how to create a sound business plan and how to cooperate with neighbors and local officials. He also reports that during this period he received no guidance of any kind from the ABC or city agencies (nor did he think to ask) regarding responsible alcohol service, effective patron management and house security policies. He acquired his alcohol management skills the hard way following struggles with his partners that brought multiple citations, tumultuous operations, and forced closure of one establishment. His experiences made him highly critical both of the ABC's lack of training for individual operators and of city inaction that let several fellow-operators create a hyper-competitive, over-serving bar-restaurant environment that affected the entire community. This combination of official inaction and aggressive marketing created challenges for profitable quiet operation and increased police/community problems but none of his competitors experienced any negative consequences from the ABC or local authorities for over-serving and poor patron management:

*“I’ve been in the alcohol selling business for over twenty-one years and have not heard of a single violation for serving an intoxicated customer. I called several owners and managers who have worked in the hospitality business in Orange County for many years...Not one person could remember a single incident...”*

*“I then contacted the local ABC office and talked with a very helpful investigator ...(who)... informed me that in the prior year, 2011, a total of zero violations had been issued for serving an intoxicated customer ... in Orange County. Zero. There are over 3,400 active on-sales licensees (in the county). (p. 104)”*

The memoir calls for the State to pursue a balanced policy of prevention training and diligent enforcement at far greater levels than the author encountered. The author is adamant that the industry cannot reform itself without this oversight. Further, the author holds cities responsible for planning and land-use oversight to avoid over-concentration and to establish an appropriate business climate with written community operating standards for alcohol outlets. The author refers to an important division of labor shared between local planning and zoning authorities and the ABC for the oversight of retail alcohol outlets explained below.

### **ABC reliance on local jurisdictions.**

The ABC shares authority with local jurisdictions (cities and counties) in the process of granting an ABC license and enforcing ABC laws per the California ABC Act (Business and Professions Code, Division 9). The ABC Act gives local jurisdictions opportunities to play vital roles in both licensing and enforcement to prevent problems

<sup>13</sup> Gregg Hanour, *A Business Approach to Reduced Drunk Driving*, CreateSpace Independent Publishing Platform (December 14, 2012). ISBN-10: 1481005717; ISBN-13: 978-1480115715. Available on amazon.com



related to morphing. In general, the ABC has no formal programs or bulletins to inform local jurisdictions on best practices, precedents, and problematic aspects of the exercise of local powers vis-à-vis the ABC. The local jurisdiction must decide for itself how vigorously its local public agencies will participate in these functions, particularly with respect to morphing, a matter on which the ABC is officially blind. Three specific sections of the ABC Act described below allow local jurisdictions to shape ABC actions regarding issuance and enforcement of retail alcohol outlet licenses.

**Local planning and zoning (P&B 23790 and 23791).** These two sections of the ABC recognize that local jurisdictions' (cities and counties) powers to control alcohol outlets through land-use planning and zoning are determinative for retail alcohol outlet licensing and cannot be superseded by the ABC. (see Section 3 below for further discussion).

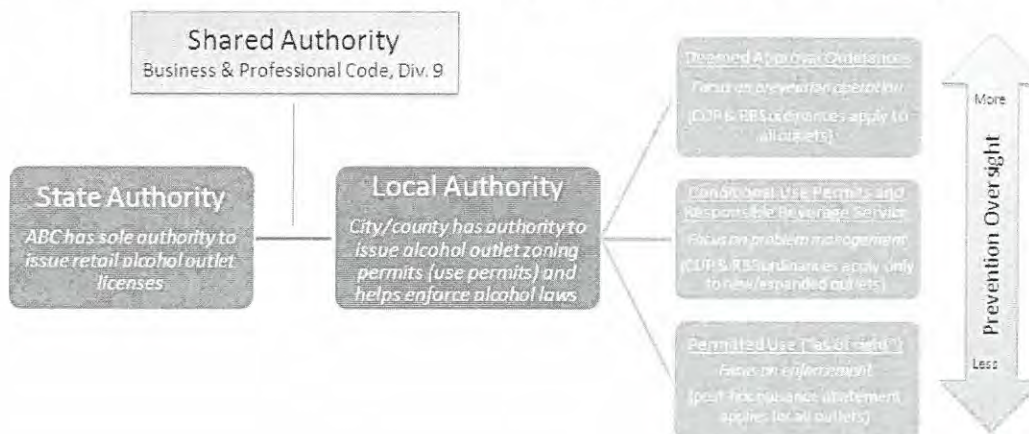
**Public convenience or necessity (B&P 23958.4).** This ABC "Undue Concentration" law allows a city or county to block a license for a bar, but not for a restaurant, by making a finding of "no public convenience or necessity" (PC or N) for retail alcohol outlets located in high-crime areas or in areas with a high density of alcohol outlets measured by population (census). The law allows the local jurisdiction (city or county) to stop the flow of more bars (Type 40, 42, 48 licenses) into an impacted area by making this finding on a case by case basis. However, the law includes a loophole for restaurants (Type 41 and 42 licenses) that allows the applicant, rather than the city or county, to determine whether "public convenience or necessity would be served by issuance of the license" for a "retail on-sale bona fide eating place" in the impacted area. The Act includes this language: "(b) Notwithstanding Section 23958, the department may issue a license as follows: (1) With respect to a... retail on-sale bona fide eating place license...if the applicant shows that public convenience or necessity would be served by the issuance."

That is, the ABC Act allows the applicant for a Type 41 or Type 47 license to make his or her own PC or N determination, rather than the city or county. California alcohol policy advocates view this loophole as being in conflict with prevention goals.<sup>14</sup>

**Shared jurisdiction for enforcement of ABC laws (P&B 24202, 25619).** Although the ABC has exclusive authority for issuing and revoking licenses, enforcement of ABC laws is a shared responsibility between ABC and local law enforcement. Because the ABC education and monitoring system is voluntary and enforcement is complaint-driven, the ABC depends heavily on local jurisdictions to monitor licenses and help with enforcement investigations.

<sup>14</sup> The Redevelopment Committee, California Council on Alcohol Policy, explored this issue in 2009-2010.

Shared Authority for Regulation of California Retail Alcohol Outlets:  
Powers of the State Alcoholic Beverage Control Department and Local Jurisdictions (Cities and Counties)





## LOCAL JURISDICTIONS CAN DO MORE TO CONTROL AND REGULATE

How have California cities and counties responded as the ABC has shifted its regulatory model to include greater reliance on industry self-monitoring and local control? The following section reviews current responses to morphing problems, describes local powers available to cities to take effective action, and identifies actions cities can take to prevent and reduce morphing. Initiatives being undertaken by the City of San Luis Obispo, whose downtown bar-restaurant establishments provide the opening scene for this Policy Brief, illustrate these actions.

### *How problems with morphing take cities by surprise.*

Most communities welcome new and expanded restaurants with open arms. Most local officials and other local stakeholders relish the prospect of positive contributions from restaurants, with seemingly little regard for the potential threats to public safety, health problems, and community disruption that are associated with unchecked growth and development. With respect to restaurants, cities tend to defer to the marketplace to determine outlet location, size of establishment, type of use, densities (number of outlets in a given area or per population), and operating requirements. Use permits are issued essentially as requested (“as of right”) without special operating conditions or restrictions. This makes it relatively easy for an existing restaurant to expand to bar- and entertainment-oriented activities up to 2:00 am with few restrictions from the city or the ABC.



In the context of rapid local development or redevelopment, the number of restaurants operating under these circumstances can grow quickly in high-density, downtown and redevelopment areas. Growth occurs both for the number of outlets and for increased drinking and entertainment activities. In as few as three or four years, the number of restaurant seats in a downtown area can nearly double.<sup>15</sup> In such a rapidly growing area some restaurants begin promoting drink specials coupled with alcohol-related special events to stay competitive. Local officials (and sometimes the operators themselves) are often taken by surprise at rapid increases in public drunkenness, overcrowding, disturbances, violence and injuries, youth drinking and DUIs. They are also surprised at the extent to which these behaviors can overflow into the surrounding community.

A preventive approach is readily available to all local jurisdictions through local planning and zoning ordinances. As noted in the preceding section, the ABC relies on local jurisdictions to regulate land-use aspects and general business operations of retail alcohol outlets as part of the State licensing and enforcement procedures (B&P 23790). Yet, most local agencies and community groups do not realize the extent to which their local planning and zoning powers can deal effectively with morphing. Currently just a handful of cities and counties make full use of their powers to work with restaurants in ways that manage problems as soon as they appear or avoid them altogether.<sup>16</sup>

*ABC allowance for local zoning to regulate on-sale alcohol outlets.* The ABC Act recognizes that the State cannot regulate on-sale and off-sale outlets without participation by the local jurisdiction. The State lacks capacity to regulate and manage the actual distribution and operation of retail alcohol outlets at the community (city or county) level. The Act accordingly relies on the local jurisdiction to address these issues through zoning and land-use ordinances: The ABC will not issue a retail alcohol license “contrary to a valid zoning ordinance any city or county” (B&P S. 23790). This means the ABC District Office will not complete processing of a

<sup>15</sup> Op. Cit., F. Wittman, Lessons from Three Orange County Cities. See discussion for City of Fullerton.

<sup>16</sup> F.D. Wittman and M.E. Hilton, “Uses of planning and zoning ordinances to regulate alcohol outlets in California cities, in H. Holder (ed.), Control Issues in Alcohol Abuse Prevention: Strategies for States and Communities, Greenwich CT: JAI Press, 1987, 337-366.



license application until the city or county certifies that the candidate outlet meets local planning and zoning requirements. The ABC thus sets the stage for the local jurisdiction to set limits on locations, numbers, and types of outlets that will receive use-permits, as well as to establish safe operating conditions for outlets.

The ABC provides this opportunity to each local jurisdiction but does not require it. The jurisdictions are left to decide for themselves how diligently to apply local planning and zoning ordinances to retail alcohol outlets on a scale that ranges from laissez-faire to local control. At the laissez-faire (liberal) end of the scale, local jurisdictions allow on-sale outlets to operate as regular businesses “as of right.” At the more tightly regulated end of the scale, cities and counties impose “local control” – local oversight on a case-by-case basis that allows denial of a permit or conditional approval for each outlet through a local conditional use permit (CUP) written into the local planning and zoning code.<sup>17</sup>

#### **Local Control: City and county zoning for bars and restaurants.**

“Local control” is a term for city or county adoption of CUP requirements written into the land-use plan and zoning ordinance specifically to prevent public safety and health problems, and to protect community well-being related to retail alcohol outlets. Local control allows cities and counties to monitor retail alcohol outlet operations closely and to take action on them quickly before they get out of hand. Cities that adopt “as of right” ordinances forego this level of oversight, and thus tend not to see the problems coming until they erupt into major community concerns.

*Restaurants, bar-restaurants bars, and nightclubs as a local land-use issue.* Although state law does not clearly distinguish between “traditional restaurants,” “bars,” and “nightclubs,” local land-use and zoning ordinances are well suited to make such distinctions according to types of land-use and operational activities. Local jurisdictions assign appropriate land-use zones (geographic areas) for each land-use category of ABC-licensed “restaurant” to assure operations do not disturb neighbors or create undue police problems. Each local jurisdiction can fine-tune its CUP to set operational requirements for service of alcoholic beverages and management of the premises to prevent high-risk alcohol-related behaviors. Cities that apply local control to all bars and restaurants – that is, to all local ABC License Types 40, 41, 42, 47, and 48 – can encourage an active restaurant / night-life community while avoiding conflicts with other land-uses, public safety problems, and unpleasant surprises and expenses.

*Features of Local Control for on-sale alcohol outlets (all types of restaurant, bar, nightclub).* A local alcohol outlet control ordinance includes at least the first three of the following six components. A few cities have designed all six components to work together in an effective oversight system.<sup>18</sup>

- **Definition of on-sale land-use types.** On-sale outlets are defined in clear land-use and behavioral terms (“restaurants,” “bars,” “nightclubs,”) and are assigned to zones in the city land-use plan on the basis of compatibility with nearby uses and the community as a whole.
- **Conditional use permits (CUPs) for each new / expanded alcohol outlet.** CUPs set operational and design standards to protect health and safety through operating conditions such as RBS training, security management, alcohol promotion activities, physical design for surveillance and crime prevention, hours of operation, security, and business plan review.<sup>19</sup>
- **Sensitivity to proximity and adjacency issues.** Local zoning and land-use planning establishes zoning restrictions, spacing requirements and late-night hours restrictions to buffer the impact of bars and restaurants on nearby housing and other business.
- **Deemed-approved ordinances (DAOs) for existing outlets.** DAOs bring problematic existing outlets “grandfathered” under previously-granted use-permits into conformity with new CUP requirements.

<sup>17</sup> F.D. Wittman and P. Shane. Manual for Community Planning to Prevent Problems of Alcohol Availability, prepared for California Dept of Alcohol and Drug Programs. Berkeley CA: Prevention Research Center, September, 1988.

<sup>18</sup> F. D. Wittman, F. Latcham. Public Oversight for San Luis Obispo Retail Alcohol Outlets: Issues for Planning and Zoning. CLEW Associates. Berkeley, California, October 14, 2009.

<sup>19</sup> “Best Practices in Municipal Regulation to Reduce Alcohol-Related Harms From Licensed Alcohol Outlets, With Model Ordinance and Bibliography.” Center for the Study of Law and Enforcement Policy. Pacific Institute for Research and Evaluation (Ventura, CA: Ventura County Behavioral Health Department Publication, 2008).



- **Density limits.** Cities set limits on the density of alcohol outlets by geo-area and by proximity to outlets of similar types. These limits can help avoid conflicts between competing land-uses for non-alcohol businesses and housing; they can also reduce stresses on community services and groups due to crowding, and can reduce crime and community disturbances.
- **Fee recovery component.** The local ordinance includes a fee schedule charged to the alcohol outlets to cover public agency costs required to administer the ordinance.

**Conditional use permits (CUPs) for on-sale alcohol outlets.** Each city develops its CUP ordinance based on local needs and preferences, and on local customs and past experiences with alcohol. The CUP accommodates different kinds of outlets and different types of uses as shown in the generalized outline form in Table 5 (See below). The CUP can be fine-tuned based on needs for the specific kind of outlet. For example, the city can tailor security standards and responsible beverage service (RBS) training requirements according to establishment risk level (for example requiring more on-site security and higher-level RBS training for managers and servers at higher-risk establishments).

**Table 5. Conditional Use Permits for On-Sale Alcohol Outlets**

Permitted Uses for On-Sale Retail Alcohol Outlets Example City, California	Traditional Restaurants	Bars and Bar- Restaurants	Nightclubs
<i>Architectural Features</i>			
Bar seating for 10% or more of customers	No	Yes	Yes
Entertainment devices – Large-screen TV, jukeboxes	No	Yes	Yes
Games of skill, amusement devices, contests	No	No	Yes
Elevated stage, dance floor, sound board	No	No	Yes
<i>Operating Features</i>			
Responsible beverage training (RBS)	Low	Medium	High
Late-night operation after kitchen closes (no minors)	No	Yes	Yes
Promotions and advertising for special events	No	No	Yes
Alcohol advertising that encourages heavy drinking	No	No	No
Over-pours and self-serve practices	No	No	No
<i>Zones where outlet is allowed</i>			
Residential-commercial	Yes	No	No
Commercial-mixed use office & retail	Yes	Yes	No
Commercial-downtown & entertainment	Yes	Yes	Yes

**Implementation of CUPs for problems related to morphing.** An estimated 60 percent of California cities have adopted CUPs for bars and restaurants.<sup>20</sup> Although limited formal research has been conducted to demonstrate the effectiveness of CUPs to reduce problems such as violence related to morphing,<sup>21</sup> evidence is accumulating to show that greater alcohol outlet density adversely affects public health and safety.<sup>22</sup> California cities are adopting alcohol CUP and DAO ordinances specifically to address problems with morphing after the problems attract widespread public attention.<sup>23</sup> Cities report considerable success using CUP ordinances to link police departments and planning/zoning offices in an ongoing (routine) oversight process that includes the following components, described further in the case example below:

- (1) Reliable documentation and monitoring of police events at all on-sale outlets to show clearly which outlets (or geographic districts or areas) generate high levels of police calls;

<sup>20</sup> Op. cit., F.D. Wittman and M.E. Hilton, "Uses of planning and zoning ordinances to regulate alcohol outlets in California cities."

<sup>21</sup> R. Parker, "Alcohol and Violence: Connections, Evidence, and Possibilities for Prevention," (Parker), in *Journal of Psychoactive Drugs* (Eds. Rawson, Finnerty & Urada SARC Supp't No. 2, May 2004).

<sup>22</sup> "Alcohol Outlet Density and Public Health," Alcohol Justice, see [www.alcoholjustice.org/resources/fact-sheets/html](http://www.alcoholjustice.org/resources/fact-sheets/html)

<sup>23</sup> Op. cit., F.D. Wittman, Lessons from Three Orange County Cities. See discussion for cities of Fullerton and Newport Beach.



- (2) Routine training and surveillance to help the operator maintain outlet performance to comply with CUP requirements;
- (3) Prompt enforcement to address problems as soon as they appear, rather than letting problems increase in visibility and difficulty before taking action;
- (4) Sustained support and direction from local elected officials (e.g., city councils, planning commissions, zoning boards) for diligent use of public resources and continuing commitment to find the appropriate place for bars and restaurants in the long-range community plan.

*Partnership with ABC for alcohol outlet oversight.* Opponents of local control sometimes say “oversight of alcohol outlets is an ABCs responsibility, not a local obligation.” The opposite is true. The ABC is solely responsible for the retail alcohol license, but the local jurisdiction bears primary responsibility for oversight of the place where the license is located. As noted above, ABC invites and encourages (but does not require) the local jurisdiction to activate effective community oversight within the regulatory shell provided by the ABC. Table 6 illustrates this relationship.

STATE ABC LICENSE REQUIREMENTS	LOCAL ZONING CONDITIONS
ABC licenses an individual operator	Zoning office issues a use-permit for a location
ABC definitions allow “restaurant” and “bar” to be merged at a single location; no “nightclub” definition.	City can distinguish between restaurants, bars, and nightclubs by their primary function, and define geographic parameters for each as distinct land-uses.
On-sale of alcohol from 2:00 am to 6:00 am	Hours of outlet operation are set locally
AD-RBS training focuses on alcohol laws and general features of good practice	Local RBS training can be expanded to include high-risk sales practices of specific concern to community
Proximity issues covered by minimum distances from residences and sensitive uses (discretionary)	Proximity and spacing requirements can fit the local ecology and community concerns (can be mandatory)
Density requirements (crime, population) apply to restaurants only with consent of licensee (S. 23958.4)	Density requirements by geo-area and crime rate apply to all on-sales at discretion of jurisdiction
License fee renewals are minimal for on-sale outlets	Local jurisdiction may set use-permit fees to cover local costs of administration for local control
ABC has no CPTED (Crime Prevention Through Environmental Design) requirements for on-sale facilities	Local jurisdiction may require preventive design features
ABC enforcement proceeds through the Accusation process	CUP enforcement proceeds through local zoning board independently of ABC
ABC enforcement operates primarily on a post-hoc problem-solving basis with limited staff resources	Local oversight can include compliance training, preventive surveillance and problem-solving from a variety of sources.

### An exemplary use of Local Control to reduce morphing

The City of San Luis Obispo exemplifies municipal leadership in managing chronic drunkenness and police events related to morphing (described in the opening scene for this Brief). After years of enhanced policing in the Downtown area, and no relief from the problems, the city engaged in a three-year planning process to adopt new land-use and zoning requirements that establish conditional-use standards for preventing drunkenness and related behaviors among all of the city’s retail alcohol establishments. Under joint leadership from the police department and the planning department, the city expanded its original vision beyond the Downtown area, and created a new deemed-approved ordinance applicable to all on-sale and off-sale retail alcohol outlets throughout the city. This case example outlines the features of the ordinance, the process by which the ordinance was established, and the city’s plans for implementation and continuing oversight.



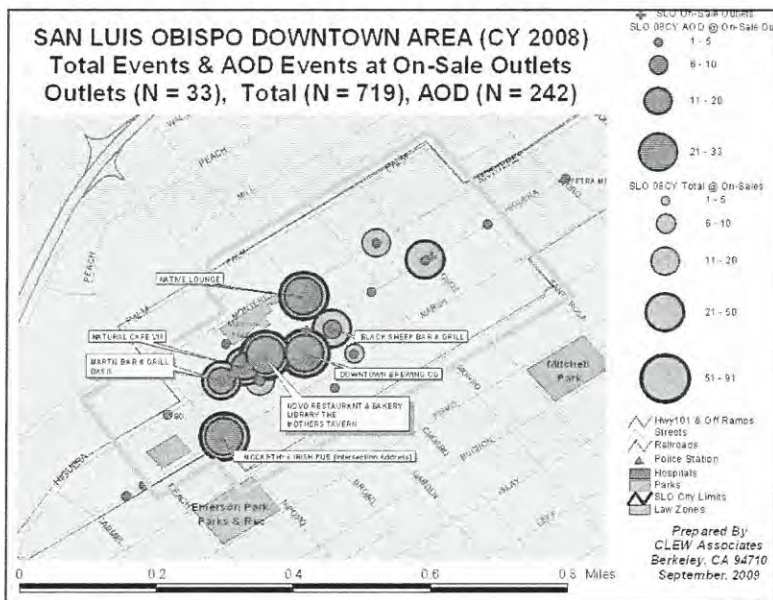
atures of the ordinance. Action by the San Luis Obispo City Council in June, 2012, filled three major gaps in public oversight to “enhance alcohol regulation in a manner calculated to give the City more effective local controls to address problem outlets.”<sup>24</sup> These actions include:

- A new land-use category for restaurants defined “Restaurants with Late Night Alcohol Service” as restaurants that serve alcohol after 11:00 pm.
- A new deemed approved ordinance<sup>25</sup> holds all on-sales and off-sales outlets, including new and existing outlets, accountable for safe and responsible operations through operating conditions (CUPs) previously applied only to bars and nightclubs. All existing outlets defined as Late-Night Restaurants are deemed existing non-conforming uses subject to CUP standards.
- Additional CUP requirements apply to new off-sales outlets whose primary activity is the sale of alcohol (not incidental sales in grocery stores and convenience stores).

*Local planning process.* A four-step participatory planning process invited all local stakeholders to articulate problems and possible solutions related to morphing at Downtown restaurants. The process explored ways to prevent problems related to excessive drinking and drunkenness through a combination of improvements to hospitality industry practices and greater local public oversight. The director of the SLO Community Development Department made efforts to keep the process thorough, inclusive, transparent, and civil. The city council kept up the pressure on all parties to act expeditiously.

(1) Documentation (August – October 2009).

The planning process began with comprehensive documentation of all police events at all retail alcohol outlets in the entire city for a full calendar year. Total calls for service and all AOD-related calls were summarized (54 police event categories) for each ABC-licensed alcohol outlet address by time (time of day, day of week, and month), and by ABC License Type. Police events at alcohol outlets were mapped using GIS displays. Tables were also provided to show the proportion of total police resources being devoted to management of retail outlets, in particular to the Downtown on-sales operating late at night. This documentation was presented to the City Council in a public meeting on October 20, 2009, in the form of a City of San Luis Obispo ASIPS/ GIS Community Tour report posted on the City Council’s website for public access (ASIPS/GIS = Alcohol/Drug Sensitive Information Planning System in a Geographic Information System format).<sup>26</sup> This report provided all stakeholders – owners/managers of the restaurants, neighbors, customers, health and social service providers, public officials, educators, concerned members of the public – with an accessible, complete, and neutral birds-eye view of community police experiences at all ABC-licensed outlets, presented in the context of total police events throughout the city.



<sup>24</sup> San Luis Obispo Community Development Department, Review of Alcohol Outlet Strategies – Enhanced Zoning regulations to improve public safety (R/TA 101) May 15, 2012

<sup>25</sup> Deemed Approved Alcoholic Beverage Sale Regulations, Ordinance No. 1578 (2012 series), amendments to Title 17 (Zoning Regulations), San Luis Obispo Municipal Code. Adopted by City Council on June 10, 2012.

<sup>26</sup> City of San Luis Obispo ASIPS/GIS Community Tour (CY 2008), CLEW Associates, Berkeley CA, October 15, 2009.



(2) Research on oversight methods and an SLO “Hospitality Zone” (January 2010 – January 2011). ASIPS reports are intended to support open community discussion to prevent community-level AOD problems by helping focus attention on management of the settings (locations) where AOD problems occur. To support this discussion, a policy memo accompanying the Community Tour report identified eight issue-areas for consideration regarding local control of retail alcohol outlets.<sup>27</sup> This memo helped frame action by owners/managers, occupants/neighbors, and officials/other interested parties to create local policies to minimize and prevent health and safety problems related to the outlets.<sup>28</sup> The SLO planning and police departments spent the year researching ordinances and oversight efforts by other cities to regulate on-sale alcohol outlets. Downtown bar-restaurant operators met regularly to explore creation of a hospitality zone for Downtown SLO in similar cities. The city obtained an ABC-funded local law enforcement assistance grant to help explore “hospitality zones” and “entertainment zones” in SLO.

Downtown On-Sale Outlets with 10+ AOD-Specific Events  
Ordered by AOD Events and Total Events, by Address  
Frequencies for Downtown San Luis Obispo, CA 2008

ABC Type	Establishment Address	Total Events	AOD Events	Arrests-Total
46	728 Higuera	72	33	32
75	1119 Garden	83	31	39
47	1023 Chorro	78	30	26
47	725 Higuera	91	24	27
47	600 Marsh	52	23	22
48	723 Higuera	59	17	14
48	1032 Chorro	40	17	18
47	673 Higuera	46	12	16

(3) Nightlife Public Safety Assessment (March – November 2011). The city simultaneously stepped up its current enforcement activity and formally explored the concept of developing a Hospitality Zone. The city used the ABC grant to contract with Responsible Hospitality Institute (RHI) to explore creation of a Hospitality Zone in Downtown SLO. RHI hosted four roundtable discussions (Community, Hospitality, Safety, and Development), conducted a leadership summit, and presented a final report to capture stakeholder sentiment for improved practices and oversight to reduce problems related to excessive drinking, drunkenness, and over-crowding. The bar-restaurant operators formed a “Safe Nightlife Association” (formerly

the Restaurant and Bar Owners Association) to prepare recommendations for improved practice. Meanwhile the city staff reported through the Chief of Police to City Council on November 15, 2011, that “Staff has developed an action plan that includes a new regulatory approach designed to mitigate the impact of nuisance and criminal activity caused by alcohol outlets, especially when voluntary compliance and education has not been effective” (p. B3-1).<sup>29</sup> City Council instructed staff to proceed with developing the regulatory approach into a formal policy recommendation for action by the council.

(4) Draft and approve new regulations (November 2011 – June 2012). During Spring, 2012, the planning department and police department developed language for the Deemed Approved Alcoholic Beverage Sale Ordinance adopted by the City Council in June. The city found that conventional definitions of “restaurant” (by ABC License Type, by percentage of food/alcohol sales, and by size/type of business or land-use) failed to predict which outlets experienced police problems related to morphing. The variable that worked best was time of day: Late-night operations, after 11:00 pm, as determined by a combination of police data and participants in the Nightlife Public Safety Assessment. Simultaneously, the Safe Nightlife Association announced its intention to adopt five programs for its members: SLO Safe Ride, Downtown Clean-Up, ABC LEAD training (RBS training), “One 86-All 86” plan to make sure a patron ejected from one bar is denied service at all bars, and Patron Responsibility (a marketing program focused on personal responsibility and safety for patrons).

Implementation of the new ordinance. The new DAO ordinance positions community stakeholders to grapple with long-standing morphing issues among Downtown outlets. None of the five programs offered by bar-restaurant operators impose a covenant among the operators to mitigate troublesome alcohol service and patron management

F. D. Wittman and F. Latcham, Public Oversight for San Luis Obispo Retail Alcohol Outlets: Issues for Planning and Zoning. Memo prepared by CLEW Associates. Berkeley, California, October 14, 2009.

28 A. Goldberg and F.D. Wittman, Taking Charge: Managing Community Alcohol and Drug Risk Environments. Developed for the California Dept of Alcohol and Drug Programs by the Community Prevention Planning Project. Institute for the Study of Social Change. University of California. Berkeley, 2005.

29 San Luis Obispo City Council Agenda Report from Chief of Police: “Update on Alcohol Outlet Public Safety Strategies,” November 15, 2011.



practices that clearly contribute to excessive drinking and drunkenness. Problems that stem from aggressive alcohol promotion and pricing, over-pouring policies, and failure to monitor patron status and condition fall outside of the scope of programs offered by the bar-restaurant operators. The new ordinance creates leverage for the city to mitigate such problematic policies and practices through conditional use permit requirements, including existing outlets through the DAO process. How this leverage is applied depends partly on whether high-risk operator practices continue (ideally, the bar-restaurant operators will help each other moderate their own behavior), and partly on whether community stakeholders vigorously demand action on their concerns for public health and safety. SLO city agencies will serve both as handmaidens to support efforts of these community stakeholders, and as arbiters to monitor outlet performance against CUP standards. City agencies plan to implement the new DAO as follows:<sup>30</sup>

- Continue surveillance of alcohol outlet performance. Routinely scan all retail alcohol outlets (both on-sale and off-sale) to verify compliance and to identify problems promptly, keeping the stage set for appropriate action as needed.
- Provide prompt and appropriate mitigation. Mitigate violations and irregularities as soon as they appear in a fair and proportionate way that builds good will by focusing on compliance and performance for the new DAO ordinance before seeking recourse through hearings, sanctions and punishment.
- Sustain transparency and provide feedback. Maintain stakeholder involvement regarding public safety and health issues, and keep abreast of quality of life issues. The City Council requires the Community Development Department to make an annual progress report to the city council.
- Integrate results of day-to-day oversight into the community's long-range plan. The Community Development Department is slated to create an "alcohol element," which includes retail alcohol outlets, during scheduled revisions to the county General Plan. Issues of appropriate density and best mixes of alcohol outlets with other land-uses will be addressed based partly on experience with implementation of the Deemed Approved Alcoholic Beverage Sale regulations and partly on further research. As experience accumulates with DAO administrative costs, City Council may shift these costs from SLO taxpayers to outlet operators.



## CONCLUSION

How can the restaurant industry, the ABC, and other State agencies better address public safety and health problems related to morphing at the community level? What more can be done to help local jurisdictions mitigate and prevent problems related to morphing?

The burgeoning restaurant / hospitality industry can be expected to seek expansion of its dining, drinking, and entertainment services. The ABC and local jurisdictions will continue their work to regulate this industry to protect

public health and safety, and to establish local land-use planning and zoning requirements that keep local retail alcohol outlets in balance with other competing uses. Challenges to effective ABC oversight of morphing can be expected to continue. State-level redefinitions of the ABC Act, increased staffing, and greater resources for training and enforcement are all unlikely at the present time due to the State's budget problems. Accordingly, at this writing it appears the prevention community's most effective path forward, while continuing to work closely with the ABC, is to pursue greater oversight by local jurisdictions and more self-policing by the industry.

On the positive side, two under-used oversight technologies are readily available to support local efforts to prevent problems with morphing. The first is responsible beverage service (RBS) training and management. The second technology is grounded in local land-use planning and zoning specifically to manage retail alcohol outlets.

<sup>30</sup> Telephone interviews by author with Doug Davidson (August 9, 2012) and Derek Johnson (August 17, 2012). Community Development Department, City of San Luis Obispo.



RBS training moderates the interaction between the establishment that pours the drink and the patron who consumes it. An RBS initiative developed at the city or county level considers the flow of this interaction from community oversight (zoning and law enforcement) to management practices, to server training. An effective municipal or county RBS initiative must go beyond training individual staff and post-hoc consulting with individual establishments since there is little indication that individual-oriented RBS efforts can mitigate alcohol problems at the community level. However, there is research to support the efficacy of community-level RBS initiatives that include strengthened management practices and increased law enforcement. These initiatives can also employ community mobilization, media campaigns and compliance-oriented consultation in addition to RBS training. (These measures taken together support server implementation of RBS training and signal to patrons and neighbors that excessive drinking and drunken behavior will not be tolerated.) In one community study with all these components in place, overall denial of service to intoxicated bar-restaurant patrons nearly doubled.<sup>31</sup>

RBS training programs in most California cities currently focus on training for individual servers and individual establishments. In addition to information about its LEAD program, the ABC website posts contact information for approximately 50 non-LEAD RBS training programs. These programs meet minimum curriculum standards but the ABC does not monitor or evaluate the programs, and therefore the site includes a disclaimer stating the ABC does not endorse these programs. It appears that most California cities requiring RBS training refer outlet operators and servers to ABC rather than develop their own programs. It also appears that few local jurisdictions maintain close oversight to assure operators and services are meeting RBS training requirements.

California communities thus experience a significant gap realizing the potential between current practice that requires RBS training for the individual server or establishment and a fully-developed community level RBS initiative capable of community-level reduction of problems with late-night service at morphing restaurants. What would happen to problematic morphing in California if local communities were to lift their focus on RBS training to development of a city- or county-level initiative based on full use of local zoning and enforcement powers to require preventive management of all on-sale outlets (bars, restaurants, nightclubs), including well-designed and well-managed RBS training? Will cities and counties develop sustainable oversight systems that eliminate hot-spots expeditiously and nip future problems in the bud by identifying them as soon as they appear, rather than wait for them to get visibly worse?

The answer depends on the extent to which California's cities and counties choose to take full advantage of their local planning and zoning ordinances. Similar to RBS training, local planning and zoning ordinances are currently underutilized with respect to retail alcohol outlets. An initiative that combines enhanced RBS programming with greater planning/zoning oversight offers considerable potential for reducing and managing late-night alcohol-related problems attributed to bar-restaurants. The problems stem largely from a nightly routine of over-serving practices and under-management of patron behavior and expectations, typically in high-volume, over-crowded conditions. These precursor circumstances could be managed on a preventive basis through enhanced RBS training and expanded CUP operational requirements, sited in facilities appropriately zoned, sized and designed to avoid creating disturbances, and applied on a sustainable basis to all existing (grandfathered) outlets through a DAO.

There are leadership opportunities for the ABC and other State agencies (Department of Alcohol and Drug Program, Department of Public Health, Office of Traffic Safety) to guide local jurisdictions towards RBS training and management and to promulgate RBS policies and practices to the field. Similarly, local jurisdictions (cities, counties, and their statewide organizations such as the League of California Cities) could make greater use of current planning and zoning powers to realize the benefits of active oversight for all retail alcohol outlets, including all restaurants, through conditional use permits (CUPs) and deemed-approved ordinances (DAOs).

<sup>31</sup> K. Warpenius, M. Holmila & H. Mustonen, "Effects of a community intervention to reduce the serving of alcohol to intoxicated patrons," National Institute for Health and Welfare (THL), Department of Alcohol, Drugs and Addiction, Helsinki, Finland, *Addiction*, 105, 1032-1040 (2010).



Expanded oversight at the city and county level offers all local stakeholders the opportunity to explore both the proper place (through land-use policies) and the appropriate operation of bar-restaurants (through CUPs and DAOs) in the community. Local agencies and concerned community groups, emboldened with the powers provided by local ordinances, planning tools, and use permits, can set effective limits on numbers, outlet types, locations, and operations to prevent restaurants from morphing into problem-outlets. As restaurant operators, the alcoholic beverage industry, and the hospitality industry continue seeking to expand, local agencies and community groups can develop local controls that set boundaries for density, location, and operation that keep alcohol-related problems in check. San Luis Obispo offers an example for other cities to use in designing their own CUP and DAO ordinances for all retail alcohol outlets – including restaurants – through healthy local debate that resolves differences between those who insist on “patron responsibility” (hold the drinker responsible) and those who demand “operator accountability” (hold the operator responsible). Such a public process, mediated by local officials and perhaps assisted by county alcohol/drug programs and the ABC, will allow the community to enjoy its restaurants, bars and nightclubs with a minimum of harm, damage, and public expense.

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## APPENDIX

### State ABC Act Definitions for restaurants and bars.

**ABC Act 23038: “Bona fide public eating place” (Restaurant)** means a place which is regularly and in a bona fide manner used and kept open for the serving of meals to guests for compensation and which has suitable kitchen facilities connected therewith, containing conveniences for cooking an assortment of foods which may be required for ordinary meals, the kitchen of which must be kept in a sanitary condition with the proper amount of refrigeration for keeping of food on said premises and must comply with all the regulations of the local department of health. “Meals” means the usual assortment of foods commonly ordered at various hours of the day; the service of such food and victuals only as sandwiches or salads shall not be deemed a compliance with this requirement. “Guests” shall mean persons who, during the hours when meals are regularly served therein, come to a bona fide public eating place for the purpose of obtaining, and actually order and obtain at such time, in good faith, a meal therein. Nothing in this section, however, shall be construed to require that any food be sold or purchased with any beverage.

**ABC Act 23039: “Public Premises” (Bar)** means premises licensed with any type of license other than an on-sale beer license, and maintained and operated for the selling or serving of alcoholic beverages to the public for consumption on the premises, and in which food shall not be sold or served to the public as in a bona fide public eating place, but upon which premises food products may be sold or served incidentally to the sale or service of alcoholic beverages, in accordance with rules prescribed by the department.

### Credits:

Thanks to readers who made helpful comments on earlier drafts – Chris Albrecht, Lauren Tyson, Dick Kite, Deborah Linden, Doug Davidson, and Derek Johnson. The idea for this Policy Brief emerged from discussions in the Redevelopment Committee, California Council on Alcohol Policy, after the author introduced the topic of bar-restaurant morphing to the committee in November 2007. With encouragement from Joan Kiley, president of Cal Council, the committee pursued morphing issues until it disbanded in 2011. Members of the committee were Ed Kikumoto (chair), Rick McGaffigan, Michael Sparks, and the author.

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Figure 1  
Bar-restaurant in Downtown San Luis Obispo

Figure 2  
Bar-restaurant in Downtown San Luis Obispo

Figure 3  
Police and security staff at bar-restaurant in Downtown San Luis Obispo

Figure 4  
Advertising for bar-restaurants in Downtown San Luis Obispo

Figure 5  
Advertising for bar-restaurants in Downtown San Luis Obispo

Figure 6  
Patrons crowd bar-restaurant in Downtown San Luis Obsipo

<sup>1</sup> These comments and the images were presented by Chief Deborah Linden, San Luis Obispo Police Department, at the Alcohol Policy XV Conference held in Washington, DC on December 7, 2010: Session C-28 How California restaurants morph into bars and what the state ABC and cities are doing about it.



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# Effectiveness of Policies Restricting Hours of Alcohol Sales in Preventing Excessive Alcohol Consumption and Related Harms

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**Abstract:** Local, state, and national policies that limit the hours that alcoholic beverages may be available for sale might be a means of reducing excessive alcohol consumption and related harms. The methods of the *Guide to Community Preventive Services* were used to synthesize scientific evidence on the effectiveness of such policies. All of the studies included in this review assessed the effects of increasing hours of sale in on-premises settings (in which alcoholic beverages are consumed where purchased) in high-income nations. None of the studies was conducted in the U.S. The review team's initial assessment of this evidence suggested that changes of less than 2 hours were unlikely to significantly affect excessive alcohol consumption and related harms; to explore this hypothesis, studies assessing the effects of changing hours of sale by less than 2 hours and by 2 or more hours were assessed separately.

There was sufficient evidence in ten qualifying studies to conclude that increasing hours of sale by 2 or more hours increases alcohol-related harms. Thus, disallowing extensions of hours of alcohol sales by 2 or more should be expected to prevent alcohol-related harms, while policies decreasing hours of sale by 2 hours or more at on-premises alcohol outlets may be an effective strategy for preventing alcohol-related harms. The evidence from six qualifying studies was insufficient to determine whether increasing hours of sale by less than 2 hours increases excessive alcohol consumption and related harms.

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## Introduction

Excessive alcohol consumption is responsible for approximately 79,000 deaths per year in the U.S., making it the third-leading cause of preventable death.<sup>1</sup> Binge drinking (consuming five or more drinks per occasion for men and four or more drinks per occasion for women) is reported by approximately 15% of U.S. adults aged  $\geq 18$  years and by approximately 29% of high school students in the U.S.<sup>2,3</sup> The direct and indirect economic costs of excessive drinking in 1998 were \$184.6 billion.<sup>4</sup> The reduction of excessive alcohol consumption

in general and binge drinking in particular are thus matters of major public health and economic interest. Reducing binge drinking among U.S. adults has been a public health objective in *Healthy People 2010*.<sup>5</sup>

In the U.S., local control of the total or specific hours during which alcoholic beverages may be sold (hereafter referred to as “hours of sale”) varies from one state to another. Some states allow cities, counties, and other local jurisdictions to enact their own alcohol control policies, and in these states, restrictions on hours of sale can vary from one location to another. In other states, local control may be pre-empted by state regulations that prohibit local authorities from enacting alcohol control regulations stricter than those that apply to the rest of the state.<sup>6,7</sup> As of 1953, American Indian reservations have the authority to establish their own alcohol-related policies, prior to which alcohol was formally prohibited.<sup>8</sup>

There is also wide variation among states in the specific restrictions they place on the hours of sale by retail setting (i.e., on- or off-premises) and by the day of the week.<sup>9</sup> For on-premises alcohol outlets, states allow facilities to serve alcohol for a median of 19 hours a day on weekdays and

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Saturdays. Nine states (Alabama, Florida, Georgia, Illinois, Louisiana, Maryland, Nevada, New Jersey, and South Carolina) have no limits on hours of sale for on-premises alcohol outlets.<sup>9</sup> On Sundays, alcohol may be served for a median of 17 hours at on-premises facilities, with seven states placing no restrictions on Sunday on-premises sales; four states allow no sales of alcohol at on-premises facilities on Sundays. In off-premises settings, hours of sale are limited to a median of 18 hours on weekdays and Saturdays. Restrictions range from no limits on hours of sale in Alabama, Florida, Georgia, Illinois, Louisiana, Maryland, and Nevada to 8 hours of sale allowed in Idaho. On Sundays, states allow a median of 13 hours of alcohol sales at off-premises facilities, with five states having no restrictions; 18 states with “blue laws” allow no off-premises sales.

This review uses the methods of the *Guide to Community Preventive Services (Community Guide)*<sup>10</sup> to assess the effects of changes in the hours during which alcohol is served on excessive alcohol consumption and related harms. A separate review published in this issue assesses the effects of changing days of sale on excessive alcohol consumption and related harms and concludes that increasing days of sale leads to increased consumption and related harms. The focal question of the present review is how, within allowable days of sale, the number of hours available for acquisition and service of alcohol affects excessive alcohol consumption and related harms.

### Findings and Recommendations from Other Reviews and Advisory Groups

Several scientific reviews<sup>11–14</sup> have concluded that restricting the hours when alcohol may be sold is an effective strategy for reducing excessive alcohol consumption and related harms. One review,<sup>11</sup> funded by the Center for Substance Abuse Prevention (CSAP), found substantial evidence of harms associated with expanding the hours and days of alcohol sales. This conclusion was based on previous empirical research indicating that the expansion of the hours and days of sale increased prevalence of excessive alcohol consumption and alcohol-related problems. Most prior reviews have combined findings on days and hours and none have examined a threshold effect. The CSAP review included studies prior to 1999; a recent review<sup>14</sup> includes studies published between 2000 and 2008. The present review covers both periods using the systematic methods of the *Community Guide* described below.

Several international bodies have also recommended the control of hours or days of sale, or both as means of reducing excessive alcohol consumption and related harms.<sup>15</sup> For example, a recent review<sup>16</sup> of alcohol control strategies by the WHO found that limiting of hours of sale was an effective method for reducing alcohol-related

harms. In Ireland, the Department of Health and Children's Strategic Task Force on Alcohol<sup>17</sup> concluded (p. 30) that “restricting any further increases in the physical availability of alcohol (number of outlets and times of sales)” is among the most effective policy measures for influencing alcohol consumption and related harms.

### Methods

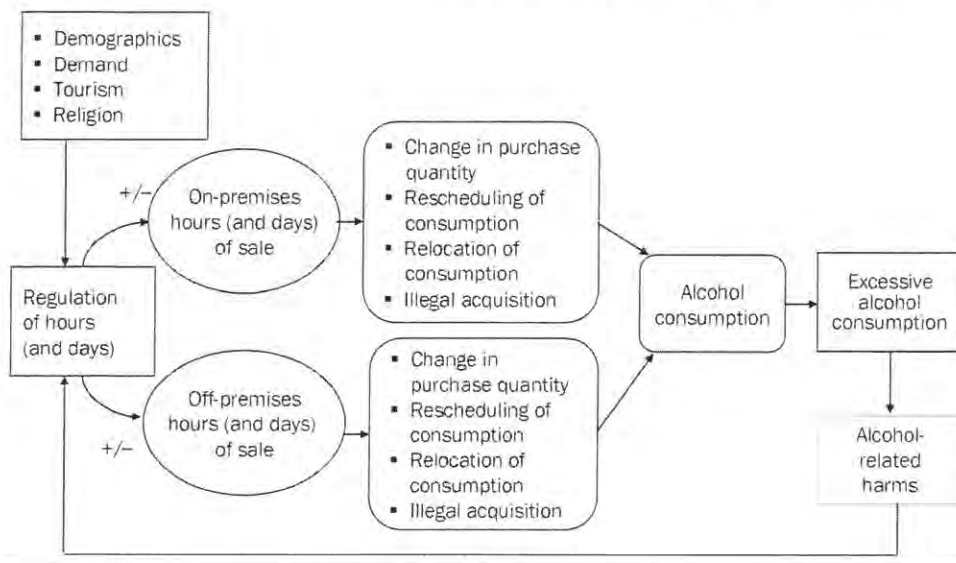
The methods of the *Community Guide* were used to systematically review scientific studies that have evaluated the effectiveness of limiting or maintaining existing limits on the hours of sale for preventing excessive alcohol consumption and related harms.<sup>10</sup> In brief, the *Community Guide* process involves forming a systematic review development team (review team), consisting of subject matter and methodology experts from other parts of the CDC, other federal agencies, and academia, and the Task Force on Community Preventive Services (Task Force); developing a conceptual approach for organizing, grouping, and selecting interventions; selecting interventions to evaluate; searching for and retrieving available research evidence on the effects of those interventions; assessing the quality of and abstracting information from each study that meets inclusion criteria; assessing the quality of and drawing conclusions about the body of evidence on intervention effectiveness; and translating the evidence on effectiveness into recommendations. Evidence is collected and summarized on (1) the effectiveness of reviewed interventions in altering selected health-related outcomes and (2) positive or negative effects of the intervention on other health and nonhealth outcomes. When an intervention is shown to be effective, information is also included about (3) the applicability of evidence (i.e., the extent to which available effectiveness data might generalize to diverse population segments and settings); (4) barriers to implementation; and (5) the economic impact of the intervention. To help ensure objectivity, the review process is typically led by scientists who are not employed by a program that might be responsible for overseeing the implementation of the intervention being evaluated.

The results of this review process are then presented to the Task Force, an independent scientific review board that objectively considers the scientific evidence on intervention effectiveness presented to them and then determines, with the guidance of a translation table, whether the evidence is sufficient to warrant a recommendation on intervention effectiveness.<sup>10</sup> Evidence can be found to be strong, sufficient, or insufficient. Sufficient or strong evidence may indicate benefit, harm, or ineffectiveness of the intervention whereas insufficient evidence indicates more research is needed.

### Conceptual Approach and Analytic Framework

The premise of this review is that increased availability of alcoholic beverages through any mechanism facilitates increases in excessive consumption and related harms, and that limiting hours of sale of alcoholic beverages is one way to reduce availability. The limitation of hours of sale of alcoholic beverages was defined as “applying regulatory authority to limit the hours that alcoholic beverages may be sold at on- and off-premises alcoholic beverage outlets.” Limiting may refer to either *maintaining existing limits* in response to efforts to expand hours of sale or *reducing current limits on hours of sale*. Hours of sale may be regulated at the national, state, or local level or some combination of these. *Off-premises retailing* refers to





**Figure 1.** Effects of regulation of hours (and days) of alcohol sales on excessive alcohol consumption and related harms

the sale of contained alcoholic beverages, for instance, at package stores, liquor stores, grocery stores, or convenience stores, for consumption elsewhere. *On-premises retailing* refers to the sale of alcoholic beverages for consumption at the point of sale, for example, at bars, restaurants, or clubs.

Policies that regulate the hours of sale may be influenced by various characteristics of the affected population, including the demand for alcoholic beverages, the age distribution of the population, the religious affiliation and involvement of residents, and the amount of tourism the area attracts. Policies reducing or expanding hours of sale are hypothesized to affect alcohol consumption and alcohol-related harms through the following means (Figure 1). First, increases or decreases in the hours of sale affect consumers' ability to purchase alcohol by changing its availability. Second, when access to alcoholic beverages changes, consumers may alter their purchasing habits in several ways, including changing their purchase volume, rescheduling their purchases, relocating their purchases, or obtaining alcoholic beverages illegally. Changes in their purchasing habits may then affect their drinking patterns or overall levels of alcohol use, resulting in changes in alcohol-related problems.

Changes in the hours of sale may also affect alcohol-related health outcomes by other means. For example, increases in the hours that alcohol is available at on-premises outlets may be associated with increased social aggregation, which, in turn, may increase aggressive behaviors that are exacerbated by alcohol consumption.<sup>18</sup> Increases or decreases in the hours that alcohol is available in one jurisdiction may also increase or decrease alcohol consumption in adjacent jurisdictions if consumers travel from a jurisdiction with fewer hours to one with greater hours. This may also affect the number of miles traveled to purchase alcohol, and therefore the probability of alcohol-related motor vehicle crashes.

The present review addresses the following research question: what are the effects on excessive alcohol consumption and related harms of changing the hours of sale at on- or off-premises outlets? It was hypothesized that there would be a dose-response relationship related to the magnitude of the change in hours (i.e., the amount by which hours of sale are increased or decreased). Based on this hypothesis, the body of evidence for this review was strati-

fied into studies examining changes of  $\geq 2$  hours and  $< 2$  hours per day. This cut point was chosen by the judgment of the review team that 2 hours might be a reasonable threshold for a substantial effect and on the distribution of available studies.

The process by which hours of alcohol sale are changed in different settings may also be an important variable to consider in evaluating the effects of such changes. In some settings in which the allowable hours of sale are increased, any licensed facility may extend hours. In others, facilities must apply for an extension and meet certain criteria, such as demonstrating a lack

of facility crowding in a neighborhood. It was hypothesized that the additional level of regulation required to apply for extended opening hours might reduce the potential harm from greater access by restricting the implementation and extent of added hours.

### Inclusion and Exclusion Criteria

To be included as evidence in this review, studies had to meet certain criteria. First, studies that assessed short-term changes in alcohol availability (e.g., alcohol sales related to a special event such as a sports competition) were not included. Second, eligible studies needed to assess the specific impact of changes in the hours of sale on excessive alcohol consumption, related harms, or both, as opposed to evaluating the effect of change in combination with other interventions. Studies of combined interventions may obscure the effects attributable specifically to changes in hours. Third, because the current focus was on the effects of changes in hours of sale in jurisdictions where these changes occurred, no review was made of studies that examined the effects of changes in hours in one jurisdiction on consumption elsewhere, for example, in neighboring jurisdictions or across a border. Fourth, to increase the applicability of the findings to the U.S., studies had to be conducted in countries with high-income economies<sup>a</sup> according to the World Bank.<sup>19</sup> Fifth, studies had to present primary research findings, not just review other research findings. Sixth, studies had to be published in English. Seventh, studies had to have a comparison group

<sup>a</sup>World Bank High-Income Economies (as of May 5, 2009): Andorra, Antigua and Barbuda, Aruba, Australia, Austria, The Bahamas, Bahrain, Barbados, Belgium, Bermuda, Brunei Darussalam, Canada, Cayman Islands, Channel Islands, Cyprus, Czech Republic, Denmark, Equatorial Guinea, Estonia, Faeroe Islands, Finland, France, French Polynesia, Germany, Greece, Greenland, Guam, Hong Kong (China), Hungary, Iceland, Ireland, Isle of Man, Israel, Italy, Japan, Republic of Korea, Kuwait, Liechtenstein, Luxembourg, Macao (China), Malta, Monaco, Netherlands, Netherlands Antilles, New Caledonia, New Zealand, Northern Mariana Islands, Norway, Oman, Portugal, Puerto Rico, Qatar, San Marino, Saudi Arabia, Singapore, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Trinidad and Tobago, United Arab Emirates, United Kingdom, U.S., Virgin Islands (U.S.).



or, at a minimum, compare outcomes of interest before and after a change in the policy related to hours of sale.

Specific types of alcohol-related harms of interest were alcohol-related diseases (e.g., liver cirrhosis), alcohol-impaired driving, alcohol-related crashes, unintentional or intentional injuries, and violent crime. When studies assessed multiple outcomes of interest, those outcomes with the strongest known association with excessive alcohol consumption were selected. Outcome measures that had the strongest known association with excessive alcohol consumption included binge drinking, heavy drinking, liver cirrhosis mortality, alcohol-related medical admissions, and alcohol-related motor vehicle crashes, including single-vehicle night-time crashes (which are widely used to indicate the involvement of excessive drinking).<sup>20</sup> Less-direct measures included per capita ethanol consumption, a recognized proxy for estimating the number of heavy drinkers in a population<sup>21</sup>; unintentional injuries; suicide; and crime, such as homicide and aggravated assault.

### Search for Evidence

The following databases were searched: Econlit, PsycINFO, Sociology Abstracts, MEDLINE, Embase, and EtOH. All years of records available on the databases were searched up to February 2008. Although the systematic search ended at this date, the review team is not aware of additional hours of sale research published since this time. (The search strategy will be available on the Community Guide website.) The reference lists of articles reviewed were also searched as well as reference lists from other systematic reviews. Government reports were considered for inclusion, but unpublished papers were not. Subject matter experts were also consulted to identify studies that might have been missed.

### Assessing the Quality and Summarizing the Body of Evidence on Effectiveness

Each study that met the inclusion criteria was read by two reviewers who used standardized criteria to assess the suitability of the study design and threats to validity.<sup>10</sup> Uncertainties and disagreements between the reviewers were reconciled by consensus among the review team members. Classification of the study designs accords with the standards of the *Community Guide* review process and may differ from the classification reported in the original studies.

Studies were evaluated based on their design and execution. Those that collected data on exposed and control populations prospectively were classified as having the greatest design suitability. Those that collected data retrospectively or lacked a comparison group, but that conducted multiple pre- and post-measurements on their study population(s), were rated as having moderate design suitability. Finally, cross-sectional studies, those without a comparison group, and those that involved only a single pre- or post-measurement in the intervention population were considered to have the least suitable design. Quality of execution was assessed by examining potential threats to study validity, including an inadequate description of the intervention or of the study population(s), poor measurement of the exposure or outcome, failure to control for potential confounders, and a high attrition rate among study participants. Based on these criteria, studies were characterized as having good quality of execution if they had at most one threat to validity; fair execution if they had two to four threats to validity, and limited quality of execution if they had five or more threats to validity. For example, studies that used only proxy outcome measures were assigned a penalty for this threat to validity. Only studies

with good or fair quality of execution were included in the body of evidence; studies with any level of design suitability were included, other than those with cross-sectional design.

Effect estimates were calculated as relative percentage change in the intervention population compared with the control population using the following formulas:

1. For studies with pre- and post-measurements and concurrent comparison groups:

$$\text{Effect estimate} = (I_{\text{post}}/I_{\text{pre}})/(C_{\text{post}}/C_{\text{pre}}) - 1,$$

where:

$I_{\text{post}}$  = last reported outcome rate or count in the intervention group after the intervention;

$I_{\text{pre}}$  = reported outcome rate or count in the intervention group before the intervention;

$C_{\text{post}}$  = last reported outcome rate or count in the comparison group after the intervention;

$C_{\text{pre}}$  = reported outcome rate or count in the comparison group before the intervention.

2. For studies with pre- and post-measurements but no concurrent comparison:

$$\text{Effect estimate} = (I_{\text{post}} - I_{\text{pre}})/I_{\text{pre}}$$

All studies included in this review assessed the effects of *increasing* hours of sale, and the control condition was *not increasing* hours of sale. Although the analysis here accordingly assesses the effects of increasing hours, the public health intervention of interest is the control condition, (i.e., *limiting or not increasing hours of sale*). This approach rests on the assumption that increasing availability by increasing hours is likely to increase excessive consumption and related harms, and thus not increasing hours when proposed is the public health intervention. For each body of evidence, the review reports a number of *events* of policy changes in hours in a given jurisdiction, each of which may have been the subject of more than one *study* (a research investigation carried out by a single researcher or research group), each of which, in turn, may have been reported in more than one *paper or report*.

## Results on Intervention Effectiveness

### Studies of Changes of >2 Hours in Hours of Sale

Ten studies<sup>22–31</sup> of six events that resulted in a change of  $\geq 2$  hours in the hours of alcohol sales met the inclusion criteria. Only one study<sup>22</sup> was of greatest design suitability; however, the principal analysis in this study was presented graphically and did not allow the estimation of a numeric effect size. One study<sup>23</sup> was of moderate design suitability and eight<sup>24–31</sup> were of least suitable design. All studies had fair quality of execution. (A summary evidence table [Table 1]<sup>22–40</sup> accompanies this review.)

Four of the six events studied occurred in Australia (in 1966, 1977, 1984, and 1998–2000); one in London, England (in 2005); and one in Reykjavik, Iceland (in 2005). All of the events led to increased hours of sale at on-premises alcohol outlets.

In Victoria, Australia, weekday and Saturday hours were extended from 6:00 PM to 10:00 PM in 1966. Hours allowed prior to this change were not reported. One

**Table 1.** Evidence of the effects of limits of sale of alcohol hours of sale on excessive alcohol consumption and related harm

Study/design/ execution	Population/study time period	Intervention/comparison	Analysis/outcome	Reported findings	Review/effect size
<b>Policies allowing a change of ≥2 hours—Increasing hours</b>					
El-Maayleh (2008) <sup>29</sup> Design suitability: Least Pre/post, no control Quality of execution: Fair (4 limitations)	Location: University College Hospital, London, England, and Wales Dates: November 24, 2005 Pre-intervention: November 24, 2004–April 30, 2005 Post-intervention: November 24, 2005–April 30, 2006	Intervention: Flexible opening hours: Potentially 24-hour opening, 7 days a week, dependent on special license Note: Granting of licenses subject to consideration of impact on local residents, businesses, and expert opinion Control: None	Analysis: Chi-square Outcome: ARMT (6 months before compared to 6 months after)	ARMT Pre: 1102 Post: 730	Relative % change (95% CI): –33.8% (–39.7, –27.3)
Newton (2007) <sup>27</sup> Design suitability: Least Pre/post, no comparison Quality of execution: Fair (3 limitations)	Location: London Dates: November 2005 Pre-intervention: March 2005 Post-intervention: March 2006 (9:00PM–9:00AM)	Intervention: Experimental unrestricted hours Control: None	Analysis: Mann-Whitney U test for differences in proportions Outcomes: Numbers and percentages of "alcohol-related" ER admissions, injuries, and hospital referrals	Significant increases in number of alcohol-related admissions, alcohol-related assault, alcohol-related injury, and alcohol-related hospital admissions	Relative % change (95% CI): Alcohol-related assault: 129.6 (46.1, 260.8) Alcohol-related injury: 193.2 (108.2, 312.8)
Babb (2007) <sup>28</sup> Design suitability: Least Pre/post, no comparison Quality of execution: Fair (3 limitations)	Location: London Dates: November 2005 Pre-intervention: December 2004–November 2005 (9:00PM–9:00AM) Post-intervention: December 2005–November 2006 (9:00PM–9:00AM)	Intervention: Experimental unrestricted hours, along with fines/penalties for service to drunk clients and children Control: None	Analysis: 30 of 43 home office police forces provide data on arrests for serious and less-serious violent crimes. Offenses not specified as alcohol-related	Moving averages calculated for nighttime arrests, 6:00PM to 5:59AM	Relative % change: Serious offenses (including homicide and manslaughter): –9.5% Less-serious offenses (with wounding): –5.4% Less-serious offenses (with wounding) in city centers and near licensed premises: –4.3% Assault without injury in city centers and near licensed premises: 3.1%
Ragnarsdottir (2002) <sup>26</sup> Design suitability: Least Pre/post, no comparison Quality of execution: Fair (3 limitations)	Location: "relatively small" city center, Reykjavik Dates: July 1999–July 2000 Pre-intervention: March 1999–April 1999 (8 weekend nights) Post-intervention: March 2000–April 2000 (8 weekend nights)	Intervention: Experimental unrestricted hours Control: Unchanged hours	Analysis: Percentages; no tests of significance Outcomes: • Emergency ward admissions (not specific to city center) • Suspected drunk driving cases	For all outcomes, location not specified as city center (the location of intervention) or outside city center. Emergency ward admissions: Weekend nights: 31% increase All-day: 3% increase Weekends (all day):	Relative % change: Weekend emergency ward admissions: 20%* Accidents and other mishaps: 23%* Fighting: 34%* Suspected drunk driving: 79.3% (13.8, 182.4)

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Table 1. (continued)

Study/design/execution	Population/study time period	Intervention/comparison	Analysis/outcome	Reported findings	Review/effect size
	* Weekend nights defined as Saturday or Sunday from 12:00 AM to 7:00AM				
Smith (1988) <sup>25</sup> Design suitability: Least Pre/post, no comparison group Quality of execution: Fair (3 limitations)	Location: Tasmania, Australia Dates: August 10, 1977 Pre-intervention: July 1, 1971-June 30, 1977 Follow-up: October 1, 1977-September 30, 1978	Intervention: Unrestricted hours allowed throughout week. Smith reports numbers of actual hours did not change, but hours shifted to later times. Exceptions (mandatory closing): Sundays 5:00 AM-12:00NOON Sundays 8:00PM-12:00MN Good Friday Prior hotel opening hours: Monday-Saturday: 10:00 AM-10:00PM Sunday: 12:00NOON-8:00PM Control: Number of injury crash from 6:00 PM to 10:00PM	Analysis: Chi-square Outcome: Crash injury between 10:00PM and 6:00AM	20% increase Weekdays: 2% decrease Reasons for admission include incidents often related to drinking: Accidents and other mishaps: 23% increase Fighting: 34% increase Non-alcohol-related admission types: No change Suspected drunk driving: 1999: 29 2000: 52  Traffic injury crash: Increased between 10:00PM and 6:00AM. Although the number occurring directly after the former closing time decreased, both the proportion and the absolute number of traffic injury crash from 12:00AM to 6:00AM increased, for a total overall increase.	Relative % change (95% CI): Traffic injury crash: 10.8% (-1.5, 21.2)
Raymond (1969) <sup>22</sup> Design suitability: Greatest Pre/post, no comparison. Quality of execution: 1964-1965 Fair (3 limitations)	Location: Melbourne, Victoria (Australia) Dates: February 1, 1966 Pre-intervention: 1964-1965 Follow-up: 1966-1967 after period Note: data collection begins January 1, 1966	Intervention: Closing time extended from 6:00PM to 10:00PM Control: Sundays	Analysis: Outcomes: ● Casualty accidents ● Total accidents ○ Pedestrian accidents ○ Single-vehicle accidents ○ Multi-vehicle accidents	Summary of major findings: Total accidents: No change Hourly distribution of accidents occurring from 6:00PM to 11:00PM changed significantly: Sharp decrease from 6:00PM to 7:00PM and an increase from 10:00PM to 11:00PM.	Graphical comparison of weekdays and Saturday with hours change vs Sunday without change: No effect
Williams (1972) <sup>23</sup> Design suitability: Moderate Interrupted time series	Location: Victoria, Australia Dates: Intervention:	Intervention: Closing time extended from 6:00PM to 10:00PM Control: None	Analysis: Maximum likelihood estimates Outcome:	Sales increase \$1.9 per quarter due to 10:00PM closing Equivalent to 12% increase	Consumption change: 12% (ns)* *CIs not calculable because of lack of data

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Table 4. Evidence of the effects of limits of alcohol hours of sale on excessive alcohol consumption and related harm (continued)

Study/design/execution	Population/study time period	Intervention/comparison	Analysis/outcome	Reported findings	Review/effect size
Quality of execution: Fair (2 limitations)	January 2, 1966 Pre-intervention: 1958-1966 Follow-up: 1966-1969	Intervention: Closing time extended from 6:00PM to 10:00PM Control: None	Consumption of alcohol in Aus\$ sales per capita controlled for price of beer and consumer price index  Injury crash change: Yearly vehicle crashes 3 years before and 1 year after the change in hours. No assessment of alcohol-relatedness of crashes	Note: Author reports no significant effect because SEs are large  An increase of 11.5% in automobile crash injuries associated with the change in hours (not taking entire day into account)	Relative % change (95% CI): 3.6% (-16.6, 28.8)
Smith (1988) <sup>24</sup>	Location: Victoria, Australia Dates: Intervention: January 2, 1966	Intervention: (1) Two 2-hour periods allowed on Sundays between 12:00noon and 8:00PM (2i) Full hours allowed between 12:00noon and 8:00PM on Sunday (2ii) Monday to Saturday sales extended from 10:00PM to 12:00AM (2iii) Sunday restaurant hours increased to 12:00 noon to 11:30PM (12:00noon-4:00PM and 6:00PM-10:00PM) Control: None	Analysis: Chi-squares Outcome: Traffic crash injury	Injury crash during the 4 hours after 8-hour Sunday session	Relative % change (95% CI): 8.5 (2.2, 15.2)
Smith (1990) <sup>30</sup> Design suitability: Least Pre/post, no comparison Quality of execution: Fair (3 limitations)	Location: Victoria, Australia Dates: Intervention: (1) July 13, 1983 (2) November 1984 Pre-intervention: January 1, 1980-December 31, 1983 Follow-up (1): January 1, 1984-December 31, 1984 Follow-up (2): January 1, 1985-December 31, 1985	Intervention: (1) 24-hour permit granted to some on-premises alcohol outlets	Analysis: descriptive statistics Outcomes: Number of assaults within outlets during study period	Summary of major findings: Authors claim that there is an association between 24-hour permits and high rates of assaults. However, findings appear contradictory and do not allow re-evaluation.	Inconclusive
Briscoe (2003) <sup>31</sup> Design suitability: Least Cross-sectional Quality of execution: Fair (3 limitations)	Location: Victoria, Australia Dates: Intervention: July 1998-June 2000	Intervention (1988): ETPs only (until 1:00AM instead of 12:00AM) Control: Hotels that served in standard hours (until 12:00AM) throughout study period (non-ETPs)	Analysis to test for ETP association: ● Paired t-tests ● Repeated measures analysis ● Multiple Linear Regression Outcomes: ● Monthly assault rates ● Impaired driver BAL	Monthly assaults per hotel: ETP hotels: Pre: 0.121; Post: 1.87 Non-ETP hotels: Pre: 0.112; Post: 0.133 *Adjusting for alcohol sales eliminated effect of ETPs (e.g., increased consumption accounted for increased harm)	Relative % change: Monthly assaults per hotel: 30.1% Wholesale alcohol purchases: 10.5% Alcohol-related road crashes: 51.3%
<b>Policies allowing a change of &lt;2 hours</b>					
Chikritzhs (1997) <sup>32-35</sup> Design suitability: Greatest Before and after design with comparison Quality of execution: Fair (3 penalties)	Location: Perth, Western Australia (WA) Dates: Data collected from July 1, 1991 to June 30, 1995 for: ● Assaults Data collected from July 1, 1990 to June 30, 1996 for: ● Roadblock breath testing ● Accidents	Intervention (1988): ETPs only (until 1:00AM instead of 12:00AM) Control: Hotels that served in standard hours (until 12:00AM) throughout study period (non-ETPs)	Analysis to test for ETP association: ● Paired t-tests ● Repeated measures analysis ● Multiple Linear Regression Outcomes: ● Monthly assault rates ● Impaired driver BAL	Monthly assaults per hotel: ETP hotels: Pre: 0.121; Post: 1.87 Non-ETP hotels: Pre: 0.112; Post: 0.133 *Adjusting for alcohol sales eliminated effect of ETPs (e.g., increased consumption accounted for increased harm)	Relative % change: Monthly assaults per hotel: 30.1% Wholesale alcohol purchases: 10.5% Alcohol-related road crashes: 51.3%

(continued on next page)

Table 1. (continued)

Study/design/ execution	Population/study time period	Intervention/comparison	Analysis/outcome	Reported findings	Review/effect size
			<ul style="list-style-type: none"> <li>Alcohol-related crashes</li> <li>Wholesale alcohol purchase</li> </ul>	<p>ETP hotels: Pre: 670,403; Post: 881,048 Non-ETP hotels: Pre: 686,094; Post: 815,822 Alcohol-related road crashes: ETP hotels: Pre: 0.0781; Post: 0.0808 Non-ETP hotels: Pre: 0.0731; Post: 0.0503</p> <p>Summary of major findings: Findings on this outcome not considered</p>	<p>Relative % change in motor vehicle fatalities: -2.7%</p>
Smith (1987) <sup>36</sup> Design suitability: Least Before and after design, no comparison Quality of execution: Fair (3 penalties)	<ul style="list-style-type: none"> <li>Routine police patrols</li> </ul> <p>Location: New South Wales, Australia Dates: Intervention: Weekday/Saturday closing hours: changed from 10:00PM to 11:00PM Pre-intervention: 1976-1979 Follow-up: 1980-1981</p>	<p>Intervention: Hours: Weekday/Saturday evening closing hours extended from 10:00PM to 11:00PM December 1979 Sunday hours and outlet types also expanded December 1980 BAC levels lowered from 0.08% to 0.05% Control: No comparison group</p>	<p>Analysis: Percentage change Outcomes: Motor vehicle fatalities</p>		
Knight (1980) <sup>37</sup> Design suitability: Least Before and after study without comparison Quality of execution: Fair (4 limitations)	<p>Location: 4 major cities and central belt of Scotland Dates: Intervention: Hours: December 13, 1976 Pre-intervention: October-November 1976 Follow-up: March 1977</p>	<p>Intervention: Hours: Evening closing hours extended from 10:00PM to 11:00PM in December 1977 (Sunday licenses issued October 1977) Control: No comparison group</p>	<p>Analysis: Percentage changes Outcomes: Consumption and patterns of consumption</p>	<p>Change in consumption (in standard units) from before to after the time change: Men: -0.9 units/week Women: 0.2 units/week</p>	<p>Relative % change in consumption following extended hour: Men: -4.9% Women: 3.8%</p>
Bruce (1980) <sup>38</sup> Design suitability: Least Before and after study with no comparison Quality of execution: Fair (2 limitations)	<p>Location: 4 major cities and central belt of Scotland Dates: Intervention: Hours: December 13, 1976 Pre-intervention: October-November 1976 Follow-up: March 1977</p>	<p>Intervention: Hours: Evening closing hours extended from 10:00PM to 11:00PM in December 1977 (Sunday licenses issued October 1977) Control: No comparison group</p>	<p>Analysis: Percentage changes Outcomes: Beer sales in bulk barrels</p>	<p>Beer sales in bulk barrels Mean 1970-1976/1977 3,7856,143/40,262,000 3,264,000/366,800</p>	<p>Relative % change: Beer sales in bulk barrels 5.7%</p>
De Moira (1995) <sup>39</sup> Duffy (1996) <sup>40</sup> Design suitability: Greatest	<p>Location: England/Wales Dates: Intervention:</p>	<p>Intervention: Extension of opening and Sunday hours Opening hour changed from 11:00AM to 10:00AM</p>	<p>Analysis: Logistic linear regression, analysis of deviance Outcomes:</p>	<p>Summary of major findings: Mortality: No increase in: Liver disease and cirrhosis</p>	<p>Relative % changes (95% CI): Mortality from diverse alcohol-related diseases: no effect Convictions for sales to underage patrons:</p>

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**Table 1.** Evidence of the effects of limits of alcohol hours of sale on excessive alcohol consumption and related harm (continued)

Study/design/execution	Population/study time period	Intervention/comparison	Analysis/outcome	Reported findings	Review/effect size
Prospective data collection with intervention and control populations Quality of execution: Fair (2 limitations)	August 1988 Pre-intervention: 1980-1988 Follow-up: 1988-1991	<ul style="list-style-type: none"> <li>● Extra hour on Sunday (hours allowed from 12:00<sup>AM</sup> until 10:30<sup>PM</sup>, with a mandatory break of 4 hours beginning at 3:00<sup>PM</sup>)</li> <li>● Drinking-up time increased from 10 to 20 minutes (weekdays only)</li> <li>● Off-premises sales allowed from 8:00<sup>AM</sup></li> </ul> Control: Scotland (positive control, having already extended hours several years previously)	<ul style="list-style-type: none"> <li>● Liver disease and Cirrhosis Mortality</li> <li>● Pancreatitis mortality</li> <li>● Alcohol poisoning</li> <li>● Alcohol-dependent syndrome</li> <li>● Alcohol psychosis</li> <li>● Workplace absenteeism</li> <li>● Workplace accidents</li> <li>● Road accidents</li> <li>● Positive breath tests</li> <li>● Drunk driving convictions</li> <li>● Drunkenness offenses</li> <li>● Crimes of violence</li> <li>● Underage drinking</li> </ul>	<ul style="list-style-type: none"> <li>● Pancreatitis</li> <li>● Alcohol poisoning</li> <li>● Alcohol-dependent syndrome</li> <li>● Alcohol psychosis</li> </ul> Workplace: No increase in: <ul style="list-style-type: none"> <li>● Workplace absenteeism</li> <li>● Serious or fatal workplace accidents</li> </ul> Increase in: <ul style="list-style-type: none"> <li>● Slight workplace accidents RR Scotland: 1.34</li> <li>● RR E and E: 1.01</li> </ul> Motor vehicle: No increase in: <ul style="list-style-type: none"> <li>● Drunk driving convictions</li> <li>● Positive breath tests</li> <li>● Fatal and serious road accidents</li> </ul> Increase in: <ul style="list-style-type: none"> <li>● Slight road accidents</li> </ul> Relative % change: 3.5% Public order: No increase in: <ul style="list-style-type: none"> <li>● Drunkenness offenses</li> <li>● Crimes of violence</li> <li>● Underage drinking</li> </ul>	64.1% (21.2%, 99.0%) Purchases by minors: -62.4% (72.9%, 46.5%) Recorded violent crime: 15.5% (14.0%, 17.0%)
Vingilis (2005) <sup>41</sup> Design suitability: Greatest Prospective data collection with intervention and control populations Quality of execution: Fair (3 limitations)	Intervention: May 1996 Pre-intervention: 1992-1996 Follow-up: 1996-1999	Intervention: On May 1, 1996, Ontario, Canada, amended the Liquor License Act to extended closing hours for alcohol sales and service in licensed establishments from 1:00 <sup>AM</sup> to 2:00 <sup>AM</sup> Control: Michigan and New York states, in which similar changes did not occur	Analysis: Supposedly interrupted time series, but results not given. Graphical analyses. Outcomes: Motor vehicle fatalities, alcohol-related and all Consumption	Summary of major findings: No significant change relative to controls Declines in consumption reported	Findings: No significant change relative to controls

\*CIs not calculable due to the lack of data.  
ARMT, alcohol-related maxillofacial trauma; ETP, extended trading permit



study<sup>22</sup> compared trends in motor vehicle–related outcomes on weekdays and Saturdays before and after the hours of alcohol sales at on-premises alcohol outlets in Victoria, Australia, were extended, to the same outcomes on Sundays, when there was no change in hours. The author found that the increase in hours of sales on weekdays and Saturday did not significantly affect the number of crashes that occurred on these days. However, she observed a change in the timing of crashes corresponding to the change in the closing time of the on-premises alcohol outlets. Thus, in this study, it appeared that although the number of events may not have been affected by the change in the closing time of alcohol outlets, their timing was affected. In contrast to this study's findings, two subsequent analyses of the same event concluded that the increase in hours was associated with increases in consumption<sup>23</sup> and motor vehicle crash injuries.<sup>24</sup>

In 1984, hours available for alcohol service in Victoria were extended from 10:00PM until 12:00MN on weekdays and Saturdays and in length of time open from 4 hours to 8 hours on Sundays (a day on which alcohol sales had been previously allowed). Information on hours prior to the weekday and Saturday extension is not given. A study of this event<sup>30</sup> found an increase in motor vehicle crash injuries associated with these increases in hours.

Between July 1998 and June 2000, Victoria granted 24-hour permits to some on-premises alcohol outlets. A cross-sectional study comparing rates of assaults in outlets granted and not granted 24-hour permits is inconclusive.<sup>31</sup> Although authors claim that higher rates of assault are associated with 24-hour facilities, their statements describing results are inconsistent, and the authors do not provide data to allow re-evaluation.

In Tasmania (Australia), licensed premises were allowed to stay open until any hour in 1977. Prior Monday–Saturday opening hours were 10:00AM–10:00PM; Sunday hours, 12NOON–8:00PM. The assumption by policymakers underlying unrestricted closing times was that possibly intoxicated clients would not be exiting the facilities at the same time, potentially decreasing risks, because different outlets would choose different closing hours. A study of this event<sup>25</sup> found an increase in motor vehicle crash injuries associated with these increases in hours.

In Reykjavik, licensed premises were allowed to stay open until any hour in the year 1999 on an experimental basis. Prior closing requirements were 11:30 PM on weekdays and 2:00 AM on weekends. Researchers found increases in emergency room admissions, injuries, fighting, and suspected driving while intoxicated.<sup>26</sup>

Finally, the United Kingdom's Licensing Act of 2003 allowed sales of alcoholic beverages 24 hours a day in England and Wales, beginning in November 2005, subject to local licensing requirements. Three studies assess-

ing the impact of this increase in hours of sale produced mixed results.<sup>27–29</sup> Two studies<sup>28,29</sup> found a relative decrease in harms (violent criminal offenses and alcohol-related maxillofacial trauma, respectively), whereas a third study<sup>27</sup> found a relative increase in harms (alcohol-related assault and injury) subsequent to this increase in hours of sale.

Among the ten studies in this body of evidence,<sup>22–31</sup> two studies<sup>28,29</sup> found that an increase of  $\geq 2$  hours in the hours of sale led to decreased alcohol-related harms (i.e., injury and serious violent crime), and six studies<sup>23–27,30</sup> found an increase in alcohol-related harms relative to the period before the increase in hours of sale took place (Figure 2). The study by Raymond<sup>22</sup> found no effect. One study<sup>23</sup> found a nonsignificant increase in alcohol consumption associated with the increase in hours in Victoria, Australia, in 1966.

Information on the requirement that premises seek permits prior to expanding hours may not have been complete in the studies reviewed. To the extent that stated permit requirements accurately reflect the expansion process, there appears to be no systematic effect of permitting. Although the harmful effects of permitted expansions appear to be larger than those in which permits were not required (Figure 2) there were also effects in the opposite direction for studies of permitted settings.

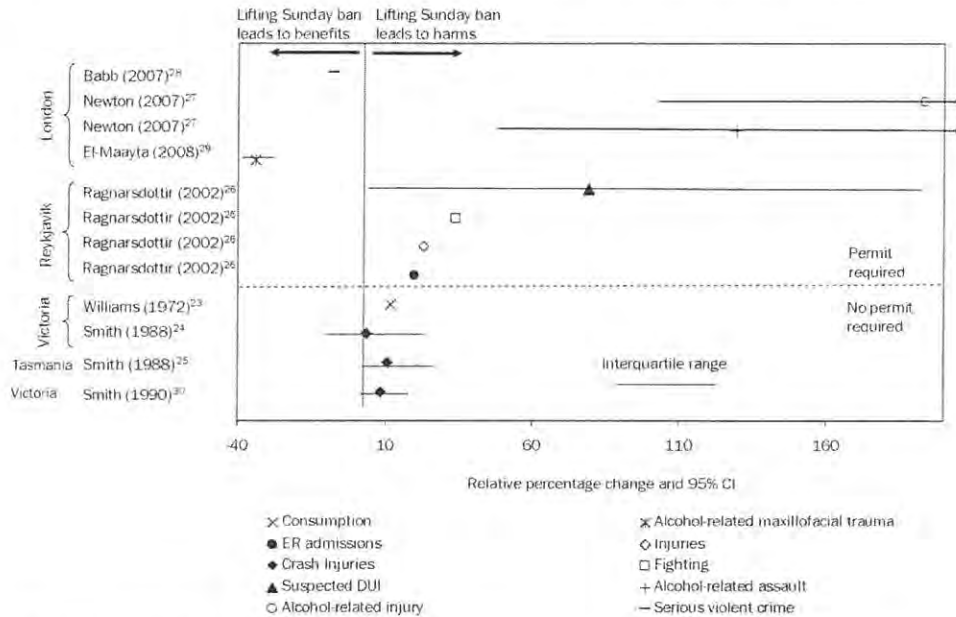
### Studies of Changes of <2 Hours in Hours of Sale

Six studies of five events (reported in ten papers<sup>32–41</sup>) that resulted in a change of <2 hours of sale met the inclusion criteria. All studies were of on-premises alcohol outlets. Three studies (seven papers<sup>32–35,39–41</sup>) were of greatest design suitability, three<sup>36–38</sup> were of least suitable design; all were of fair quality of execution. One study (two papers<sup>39,40</sup>) of the extension of opening hours in England and Wales in 1988 did not allow the calculation of effects for several outcomes, but it reported small and inconsistent results on multiple alcohol-related outcomes. One<sup>41</sup> provides graphics and report using interrupted time series but does not report numeric results.

In 1993, Perth, Australia allowed on-premises outlets to extend their closing time from 12:00MN to 1:00AM.<sup>32–35</sup> Findings were inconsistent, with a reported increase of alcohol wholesale but a decline in drunk driving and an increase in assaults and in alcohol-related crashes. None of these findings was significant.

In December 1979, the state of New South Wales in Australia expanded on-premises alcohol outlet closing hours from 10:00PM to 11:00PM, at the same time expanding Sunday hours and outlet settings. A study of these events<sup>36</sup> proposed using the weekdays as the control in an assessment of the effects of increased Sunday sales on





**Figure 2.** Relative percentage change in diverse outcomes associated with increases of  $\geq 2$  hours  
DUI, driving under the influence

motor vehicle fatalities. However, this comparison is biased toward a null effect, given the change in weekday hours. A comparison of weekday fatalities before and after the weekday expansion indicates a reduction of 2.7% in motor vehicle fatalities over the study period associated with the weekday increase of 1 hour in closing time. However, this outcome may be confounded by a reduction from 0.08% to 0.05% in maximum legal blood alcohol levels in December 1980, which would have been expected to deter drunk driving and reduce motor vehicle injuries.

In 1976, Scotland allowed on-premises outlets to extend their closing time from 10:00PM to 11:00PM.<sup>37,38</sup> Reported changes were small and not consistent in direction. Knight found increased consumption for women and decreased consumption for men, and Bruce reported a small increase in the per capita consumption of beer.

In 1988, England and Wales extended the closing hours at on-premises outlets from 10:30PM to 11:00PM and moved the opening time from 11:00AM to 10:00AM.<sup>39,40</sup> The outcomes, including mortality from liver disease and cirrhosis, pancreatitis, alcohol poisoning, "alcohol-dependent syndrome," alcohol psychosis, workplace absenteeism and injury, and various motor vehicle-related outcomes) assessed in these studies were heterogeneous and included the seemingly contradictory findings that in comparison with changes in the control setting (Scotland), convictions for sales to underage patrons increased by 64.1% (95% CI=21.2%, 99.0%), whereas sales to minors fell substantially. Another finding was

an increase in recorded violent crime of 15.5% (95% CI=14.0%, 17.0%). (See Table 1.)

Finally, in 1996, Ontario Province extended closing hours in on-premises alcohol outlets from 1:00AM to 2:00AM. A study<sup>41</sup> of this event used graphics and interrupted time series to assess the effects of this change on all and alcohol-related fatal motor vehicle crashes. Changes in Ontario were compared with changes in Michigan and New York, neither of which changed hours

of sale during the same period. The study also assessed changes in the sales of beer, wine, and spirits in Ontario from the period before to the period following the policy change. Numeric results are not reported. Beer consumption declined over the study period, whereas the consumption of wine and spirits declined in the early 1990s and then increased in the later 1990s. The authors conclude that changes in motor vehicle outcomes are "minimal." Their graphics suggest a shift of the timing of alcohol-related fatalities to later hours following the extension of hours of sale.

This small body of evidence indicates no consistent effects of changes of  $< 2$  hours on alcohol-related outcomes. Four events of increases in hours of sale were studied. Only one study of increased hours of sale in Perth, Australia, reported substantial increases in wholesale alcohol purchases, assaults, and motor vehicle crashes. Two studies (of events in England and Wales and in Ontario, Canada) did not provide numeric results but reported small and inconsistent changes in alcohol-related outcomes including alcohol consumption, multiple alcohol-related causes of mortality, and motor vehicle crashes. Two studies of increased hours of sale in Scotland also reported small and inconsistent changes in alcohol sales and consumption.

Again, information on the requirement that premises seek permits prior to expanding hours may not have been complete in the studies reviewed. To the extent that stated permit requirements accurately reflect the expansion

process, there appears to be no systematic effect of permitting (Figure 3).

### Applicability

The studies in this review were conducted in a variety of settings outside the U.S. and during a wide range of time periods. Nonetheless, the association between restrictions on the hours when alcohol may be sold and alcohol-related harms was consistent across most geographic locations (all in high-income countries) and time periods, and the findings of this review are likely to be relevant for considering the potential impact of modifying the number of hours when alcohol may be sold in the U.S.

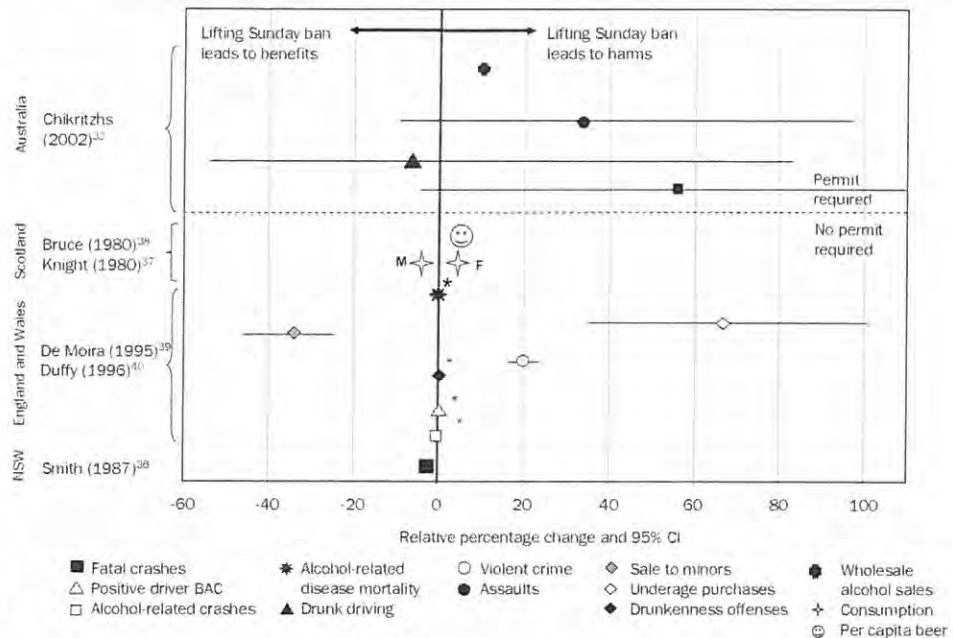
### Other Harms and Benefits

Maintaining hours of sale may sustain quality of life in communities by controlling alcohol availability, excessive alcohol consumption, and health and social harms resulting from excessive alcohol use (e.g., public drunkenness); evidence of effects on quality of life were not provided by the studies reviewed. Although it is possible that crimes such as illicit alcohol sales may increase in localities where the hours of sale are limited, no evidence of such effects was found in any of the studies evaluated. One study<sup>26</sup> noted increased workload among law enforcement personnel associated with expanded hours of sale.

### Barriers

The maintenance and reduction in the number of hours when alcohol may be sold may affect overall alcohol sales and may thus be opposed by commercial interests involved in manufacture, distribution, and sale of alcoholic beverages. The alcohol industry has generally supported policies that remove restrictions on the access to alcohol.<sup>42</sup>

State pre-emption laws (i.e., state laws that prevent the implementation and enforcement of local policies more restrictive than statewide regulations) can also under-



**Figure 3.** Relative percentage change in diverse outcomes associated with increases of <2 hours NSW, New South Wales

mine efforts by local governments to regulate hours of sale.<sup>6</sup> Indeed, the elimination of pre-emption laws related to the sale of tobacco products is one of the health promotion objectives in *Healthy People 2010*.<sup>5</sup> However, there is no similar objective in *Healthy People 2010* related to the local sale of alcoholic beverages.

### Economics

No studies were identified that assessed the economic impact of reducing the number of hours when alcohol may be sold. No study was found that specifically estimated the magnitude of commercial losses in sales and tax revenues because of a policy of restricting hours of alcohol sales.

### Summary

This review found that increasing the hours when alcohol may be sold by  $\geq 2$  hours increased alcohol-related harms. Evidence supporting this conclusion was based on studies conducted in on-premises settings outside the U.S. According to *Community Guide* rules of evidence, these findings provided sufficient evidence for the effectiveness of maintaining limits on hours of sale for the reduction of alcohol-related harms when efforts are made to increase hours by  $\geq 2$ .<sup>10</sup> Because no qualifying study assessed the effects of reducing hours of sale, the only direct inference that can be made is that reducing hours of sale by  $\geq 2$  is likely to avert alcohol-related harms. How-



ever, it may also be reasonable to expect that reducing hours of sale would also reduce alcohol-related harms.

Because there was no consistent effect on excessive alcohol consumption or related harms of increasing hours of sales by <2 hours, according to *Community Guide* rules of evidence, there was insufficient evidence that this intervention had a meaningful effect.<sup>10</sup> Insufficient evidence means that it is not possible to determine from the available evidence whether this policy change had a meaningful effect.

### Research Gaps

All existing research on hours of sale to date has been conducted in nations other than the U.S. It would be useful to have studies of changes in hours of sale in U.S. settings to confirm results from other settings. In addition, all research thus far has assessed the effects of *increasing* hours of sale. Although it may be a less-frequent event, evaluating the effects of *reducing* hours of sale for preventing excessive alcohol consumption and related harms would be useful. Evidence on changes in hours of sale of <2 hours is currently insufficient because of inconsistent findings. Thus, when such changes occur, it may be worthwhile to assess the effects of smaller changes in hours of sale on excessive alcohol consumption and related harms to improve our understanding of the “dose–response” and “threshold” relationships between changes in hours of sale and public health outcomes.

Additional research is also needed to more fully assess the costs and benefits of restricting the number of hours when alcohol is sold. From a societal perspective, economic elements should include intervention costs; loss in sales, tax revenues, and employment; reductions in fatal and nonfatal injuries, crime, and violence; gains in safety and public order; and averted loss of household and workplace productivity.

Finally, no studies were found that assessed the effects of changes in hours of sale in off-premises settings. Although consumers at off-premises settings are less likely to be directly affected by the effects of excessive consumption at the place of purchase, it is nevertheless possible that changes in availability in these settings may also affect alcohol-related harms. This issue merits investigation.

### Discussion

Based on a systematic review of qualifying studies, this review confirms the findings of previous reviews and adds details regarding a possible dose or threshold effect. Evidence of the effects of changes in hours of sale of <2 hours was insufficient to determine effectiveness because of inconsistency among findings in the body of evidence,

leaving unanswered the question of the effects of small increases in hours of sale. Data are not sufficient to allow systematic assessment of the relative percentage increase in hours (over a baseline) or the placement of the hours within the day.

All of the studies included in this review assessed the effects of increasing hours of sale at on-premises outlets, consistent with the international trend toward expanding the availability of alcoholic beverages. Further scientific evidence is needed to fully assess the symmetry between the effects of maintaining existing limits on the hours of sale compared with reducing hours of sale.

The only available evidence of the effects of reducing hours of sale was from a study in Brazil,<sup>43</sup> which did not qualify for inclusion in the review because Brazil is not a high-income nation, and, in general, studies of alcohol consumption from middle- and lower-income nations are thought not to be directly applicable to the contemporary U.S. context. In 1999, the city of Diadema had very high homicide rates; 65% of these were alcohol-related. Most of the homicides occurred between 11:00PM and 6:00AM. Diadema law allowed 24-hour opening of alcohol outlets. In July 2002, a new city law required bars to close at 11:00PM. From 2002 to 2005, homicide rates in the city declined by 44% (95% CI=27%, 61%), controlling for mortality trends. During this time period, there was also a 17% decline in assaults against women (the only additional outcome assessed); this finding, however, was not significant.

In addition to the lack of studies that assessed the effect of stricter limits on the hours when alcohol may be sold, the body of qualifying studies in this review had several other limitations. First, some studies did not directly assess the impact of relaxing restrictions on the hours of sales on excessive alcohol consumption and alcohol-related harms, but rather relied on proxy measures of these effect outcomes (e.g., criminal arrest rates). Second, nearly all of the studies relied on population-based data from public health surveillance systems that did not capture information on alcohol control policies. As a result, many of these studies were unable to control for some potential confounding factors. However, these studies generally assessed changes in the same geographic area before and after the implementation of changes in hours of sale over a fairly short time period. Other contextual factors that could also influence alcohol sales and consumption (e.g., changes in alcohol excise taxes) at the country, state, or community levels were likely to have remained fairly constant during the study periods, allowing for a valid assessment of the impact of changing hours of sale, independent of other factors, on alcohol-related harms.



The findings in this review support the potential value of allowing local communities to maintain restrictions on hours of sale. If further research supports the effectiveness of local restrictions on hours of sale, it would also argue for eliminating state pre-emption laws that prohibit local governments from enacting alcohol control policies more restrictive than those that exist statewide.

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The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the CDC.

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## Alcohol Risk Management in College Settings:

### The Safer California Universities Randomized Trial

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### Abstract

**Context**—Potentially effective environmental strategies have been recommended to reduce heavy alcohol use among college students. However, studies to date on environmental prevention strategies are few in number and have been limited by their non-experimental designs, inadequate sample sizes, and lack of attention to settings where the majority of heavy drinking events occur.

**Purpose**—To determine whether environmental prevention strategies targeting off-campus settings would reduce the likelihood and incidence of student intoxication at those settings.

**Design**—The Safer California Universities study involved 14 large public universities, half of which were randomly assigned to the Safer intervention condition after baseline data collection in 2003. Environmental interventions took place in 2005 and 2006 after 1 year of planning with 7 Safer intervention universities. Random cross-sectional samples of undergraduates completed online surveys in four consecutive fall semesters (2003–2006).

**Setting/participants**—Campuses and communities surrounding 8 campuses of the University of California and 6 in the California State University system were utilized. The study used random samples of undergraduates (~500–1,000 per campus per year) attending the 14 public California universities.

**Intervention**—Safer environmental interventions included nuisance party enforcement operations, minor decoy operations, DUI checkpoints, social host ordinances, and use of campus and local media to increase the visibility of environmental strategies.

**Main outcome measures**—Proportion of drinking occasions in which students drank to intoxication at six different settings during the fall semester (residence hall party, campus event, fraternity or sorority party, party at off-campus apartment or house, bar/restaurant, outdoor setting), any intoxication at each setting during the semester, and whether students drank to intoxication the last time they went to each setting.

**Results**—Significant reductions in the incidence and likelihood of intoxication at off-campus parties and bars/restaurants were observed for Safer intervention universities compared to controls. A lower likelihood of intoxication was also observed for Safer intervention universities the last time students drank at an off-campus party (OR=0.81, 95% CI=0.68, 0.97), a bar or restaurant

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(OR=0.76, 95% CI=0.62, 0.94), or any setting (OR=0.80, 95% CI=0.65, 0.97). No increase in intoxication (e.g., displacement) appeared in other settings. Furthermore, stronger intervention effects were achieved at Safer universities with the highest level of implementation.

**Conclusions**—Environmental prevention strategies targeting settings where the majority of heavy drinking events occur appear to be effective in reducing the incidence and likelihood of intoxication among college students.

## Introduction

There are over 1800 alcohol-related deaths each year among college students,<sup>1</sup> yet the negative effects related to college student drinking extend far beyond this figure to include: 590,000 unintentional injuries; more than 690,000 assaulted by another student; more than 97,000 victims of sexual assault or date rape; and about 25% reporting negative academic consequences. These estimates were a primary motive for the National Institute on Alcohol Abuse and Alcoholism (NIAAA) to form a national task force to address college student drinking.<sup>2</sup> In reviewing the research on college student drinking, however, the task force noted that studies done among college populations were limited largely to prevention aimed at individuals. Given the demonstrated efficacy of universal prevention strategies in general populations,<sup>3–5</sup> the task force strongly encouraged NIAAA and the research community to conduct studies that would evaluate the impact of universal strategies in the college setting. Three community interventions were singled out as successful examples for college settings: 6 The Massachusetts Saving Lives program, 3 Communities Mobilizing for Change on Alcohol (CMCA),<sup>5, 7, 8</sup> and the Community Trials Project.<sup>4</sup>

Since the task force report was issued, a few multicomponent community-based college interventions have been reported.<sup>9</sup> One of the better studies was an evaluation of the American Medical Association's "A Matter of Degree" program<sup>10</sup> that compared a comprehensive environmental community intervention at ten schools with a high prevalence of heavy drinking with 32 similar campuses. Although no significant reduction in drinking was found between the intervention and comparison schools, there were significantly lower levels of heavy drinking and alcohol-related negative consequences among a subset of five campuses that implemented the program with greater intensity. Additional studies of community-level interventions have reduced self-reported driving under the influence,<sup>11</sup> increased student support for anti-drunk-driving policies,<sup>12</sup> and reduced the prevalence of intoxication at off-campus parties proximal to the campus.<sup>13</sup>

In their review of environmental and policy interventions in college settings, Toomey and her colleagues<sup>9</sup> were disappointed with the quantity and quality of research to date. They conclude, "Future studies should continue to assess specific and multi-strategy environmental approaches, using randomized controlled trials or controlled time-series designs that are large enough to allow an assessment of causal effects." This is the need that the Safer California Universities Project was designed to address. The hypothesis is that implementing a multicomponent environmental prevention intervention will reduce intoxication at the targeted settings.

## Methods

### Design

The Safer California Universities study was designed to test the efficacy of a community-based environmental alcohol risk management prevention strategy applied to college campuses. The study used a control group, randomized experimental design involving 14 sites—8 campuses from the University of California (UC) and 6 campuses from the



California State University (CSU) systems. Campuses were matched within university system based on drinking data from the baseline surveys. A random lottery determined which campus of each pair would be the intervention site, or as control. Figure 1 summarizes the study design. IRB approval was given on July 16, 2001. Funding was provided by the National Institute on Alcohol Abuse and Alcoholism (NIAAA) with supplemental funding from the Substance Abuse and Mental Health Administration (SAMHSA).

## Intervention

The intervention's design was largely built on the successful Community Trials Project.<sup>4</sup> The objective was to combine elements of population-level alcohol control based on the general principles of deterrence<sup>14,15</sup> and reduced availability of alcohol<sup>5</sup> in order to obtain a synergy sufficient to achieve a measurable reduction in risky drinking and subsequent harm. The question was whether this approach could be transferred from general populations to college communities.

In the planning phase of the intervention, student survey data showed the relative magnitude of problems across settings. All experimental campuses subsequently chose to focus on off-campus parties, including Greek houses where they existed.

Planning groups were then given specific components from those recommended by the NIAAA task force, or by the IOM's report "Reducing Underage Drinking: A Collective Responsibility".<sup>16</sup> The intervention consisted of a set of alcohol control measures coupled with heavy publicity to give visibility to those enforcement activities. The enforcement combined (1) roadside DUI checks; (2) police compliance check operations using underage decoys to enforce laws prohibiting sales to minors; and (3) designated "party patrols" that would enforce local and state laws regarding provision of alcohol to minors or disturbing the peace. The objective was to implement any combination of 9 operations within the first 8–10 weeks of school. These operations were to be amplified by the use of local media reports and events to publicize the operations. Six different channels of communication (e.g., website; brochure; e-mails; newspaper pieces) were designated to achieve visibility. In addition, each site was asked to push for a so-called "response cost" ordinance, that would subject party hosts to an additional fine if police cited the same address twice or more within a window of time (e.g., 180 days).

These components were hypothesized to work synergistically via deterrence and reduced availability. The deterrence effect would apply to reducing retail sales of alcohol to not only minors and drinking drivers, but also potential hosts of private parties. The aim was to encourage hosts to exercise more control over their guests (e.g., by reducing the number of invitations, lowering noise, and curtailing obnoxious behavior) and also encouraging guests to reign in their own behavior and cooperate with the hosts. Although fewer than 10% of students reported driving while having too much to drink (or riding with someone who had), DUI enforcement was included in the mix to gain visibility for alcohol controls directly, and because students give DUI prevention high legitimacy.<sup>12</sup> A mix of targets for deterrence also helps overcome any one group's feeling unfairly targeted by enforcement.

At the same time, the intervention was intended to reduce the commercial sales to underage students, but also to reduce the number and size of private parties. Potential hosts may decide against throwing large parties, leaving fewer given, and thus, lower the social availability of alcohol.

Intervention campuses differed in their level of implementation. One campus was unable to take on the implementation at all, but is nevertheless included as an intervention site in all



the analyses reported here based on an “intent to treat” evaluation. In the first year of intervention, the range of DUI enforcement operations was 0 to 3 with a mean of 1.4. For decoy operations, the numbers were 0 to 5 and 2.4, and for party patrols, the range was 0 to 10 and a mean of 3.7. In the second year of intervention, there was a range of 0 to 3 DUI operations with a mean of 2, for decoy operations, a range of 0 to 5 with a mean of 2.1, and for party patrols, a range of 0 to 28 with a mean of 9.3 and median of 4.

On the side of publicity or visibility, the average number of campus news items for the 2 intervention years was 7.5 and 7.2, and dedicated websites grew from 3 to 5 campuses over the 2 years. All campuses but one had created a brochure focused on enforcement in the first year and continued into the second.

A major challenge for comprehensive, community prevention interventions is to maintain focus and to coordinate resources within a specific time frame. With college student drinking problems, there is research evidence,<sup>17</sup> that suggests problems are greater and more prevalent in the first weeks of the school year. Having a fixed deadline (first day of school) was a key advantage for accelerating implementation and maintaining focus.

Very specific direction was provided for planning through implementation, including specifying content for three planning meetings and three to five implementation meetings. The objective was having less discussion of what to do and much more on how to get it done. Follow-up interviews with liaisons showed that providing detailed instructions was appreciated (with minor exceptions).<sup>18</sup>

### Student surveys

Survey data were collected from random cross-sectional samples of undergraduate students attending the 14 California universities in four consecutive fall semesters or quarters from 2003 to 2006. Random samples of 2,000 students per school were initially targeted for surveys in fall 2003 followed by 1,000 per school in subsequent years. A pre-notification letter with a cashable \$10 check was first sent via U.S. mail to inform each sampled student about the study. An e-mail invitation followed with a URL that each student could click on to go to a website that hosted the survey. Two e-mail reminders were sent to students who had not completed the online survey 3 to 7 days after the first e-mail contact. On average, the questionnaire took approximately 25 minutes to complete.

### Measures

**Intoxication at settings/events:** Students were asked whether and how often they went to each of six settings where alcohol use may occur since the beginning of the semester (an average of 9.8 weeks before they completed the questionnaire), including a fraternity or sorority (“Greek”) party, a residence hall (“dorm”) party, a campus event (e.g., football game), a party at an off-campus house or apartment, a bar/restaurant, and an outdoor setting (e.g., public park). Based on the number of times students reported going to a particular setting, they were asked how many of those times they drank alcohol, and of the times they drank alcohol at the setting, how many times they drank enough to get drunk. They were also asked whether they drank enough alcohol to get drunk the last time they went to the setting.

Responses were used to compute the proportion of times at each setting students drank enough alcohol to get drunk and to also create dichotomous (0=no, 1=yes) measures indicating whether students drank enough alcohol to get drunk on *any occasions* at each setting or at any of the settings, and whether students got drunk the *last time* they went to each setting or the last time they went to any of the settings.

**Alcohol use in past year and heavy episodic drinking:** Students were asked how often they consumed any type of alcoholic beverage in the past 12 months, with eight possible response options ranging from “never had a drink of alcohol” to “once a day or more”. They were also asked how often in the past 2 weeks they consumed five or more consecutive drinks (men) or four or more consecutive drinks (women) in a row. Six possible response options ranged from “never” to “10 or more times”.

**Alcohol expectancies:** Respondents were asked, “How likely is it that each of the following things would happen to you personally if you were to drink three or four alcoholic beverages?” There were nine possible positive consequences (e.g., “feel relaxed,” “feel happy,” “feel more confident or sure of yourself”) and nine possible negative consequences (e.g., “get a hangover,” “get into trouble with police,” “do something you’d later regret”) with four response options (“very likely,” “somewhat likely,” “somewhat unlikely,” “very unlikely”) and corresponding values ranging from 1 to 4. After reverse coding some items, summative scores were computed for positive and negative expectancies (Cronbach alpha = .90 for both measures).

**Religiosity:** Students were asked, “How religious are you?” with four possible responses (“very,” “somewhat,” “a little,” “not at all”) and corresponding values ranging from 1 to 4. A higher value represented a higher level of religiosity.

**Grade point average:** Respondents were asked to report their cumulative GPA since they matriculated to the university.

**Health indicators:** Students were asked to report their general health status, with responses ranging from “poor” (1) to “excellent” (4), and also report their weight.

**Sociodemographic characteristics:** Respondents reported their age (treated here as an aged <21 years vs aged ≥21 years dichotomy), gender, race/ethnicity (treated here as a white vs nonwhite dichotomy), academic status or class (freshman, sophomore, junior vs senior), place of residence (house/apartment, fraternity or sorority house, student cooperative housing vs residence hall), marital status (married vs single), employment status (part- or full-time vs unemployed), Greek organization membership (yes/no), whether they were involved in intramural or intercollegiate athletics (yes/no), whether they had a motorized vehicle at school (yes/no), and whether they spent most of their weekends on or near campus (yes/no).

**University characteristics:** University-level characteristics included study experimental condition (Safer Intervention Condition vs Control), whether the school was in the University of California versus California State University system, percentage of students of non-Hispanic white race/ethnicity in 2003, percentage of students living on-campus in 2003, percentage of students in a fraternity or sorority in 2003, percentage of students who reported heavy episodic drinking (4+ consecutive drinks within 2 hours for women/5+ for men) on one or more occasions in the past 2 weeks in 2003, and whether the university was within 80 miles of a large metropolitan area (yes/no).

### Data structure and analysis

All four waves of cross-sectional survey data were included in a single student-level data set with a survey year (Time) variable representing 2003–2004 baseline and 2005–2006 intervention implementation years. A university-level data set was also created for multilevel analyses in HLM version 6.02 software.<sup>19</sup> The two data sets were linked by university identifiers. Descriptive analyses (chi-square tests) were conducted to compare

unadjusted baseline outcome measures and other student and university characteristics. These analyses were conducted in SUDAAN version 9.01 software<sup>20</sup> to adjust for sample weighting and clustering of student observations within each university. All student- and university-level covariates were included in subsequent multilevel regression analyses to rule out confounding and maximize the precision of Time × Intervention Condition effects.

Multilevel logistic and linear regression analyses were conducted to examine the effects of intervention condition on outcome slopes for dichotomous and continuous dependent variables, respectively. The general models and formal details may be found in Appendixes A and B (available online at [www.ajpm-online.net](http://www.ajpm-online.net)). HLM software provided adjustment for variance in outcomes that is attributable to clustering of student observations within universities.<sup>19</sup> Intraclass correlation coefficients (ICCs) for the outcomes ranged from .01 to .05 (M=0.03).

## Results

The overall survey response level and range of school response levels for each year were 50% (range 37%–64%) in 2003, 44% (range 33%–53%) in 2004, 41% (range 33%–55%) in 2005, and 39% (range 32%–46%) in 2006. Most important, response levels were similar across the 4 years for groups of schools in each study condition. The relative ranking of each school's response level also was consistent across the 4 years. Response levels were likely affected by the short time the survey was in the field (about 4 weeks). Post hoc sample weights for each university were developed based on the gender and racial/ethnic composition of the target sample at each university relative to the gender and racial/ethnic composition of survey respondents from each university.

### Descriptive baseline comparisons

Results of descriptive analyses are provided in Table 1. Schools in the intervention and control groups did not differ significantly on any of the background student characteristics, including age, gender, marital status, class composition, place of residence, and extracurricular activities. The relatively larger percentages of juniors and seniors (as compared to freshmen and sophomores) in the sample reflect students transferring from junior colleges into the UC system in their junior and senior years.

Intervention and control groups were also similar on all of the baseline outcome variables, as indicated in the bottom portion of Table 1. At least half of the students who went to a fraternity/sorority (Greek) or off-campus party reported getting drunk at those settings at least once during the fall semester, while at least 40% reported doing so at a residence hall party or bar/restaurant. On average, students reported getting drunk at about one third of the Greek and off-campus parties they attended, and about 30% of the residence hall parties and occasions at bars/restaurants.

### Multilevel regression analyses

Intervention effects on relative risk of intoxication the *last time* students went to each setting are represented by ORs for the Time × Condition term in Table 2. ORs < 1.0 generally indicated a relative reduction in risk of intoxication for most of the settings, with significant reductions for the last time at an off-campus party (OR=0.81,  $p<.05$ ), bar/restaurant (OR=0.76,  $p<.05$ ), and any of the settings (OR=0.80,  $p<.05$ ).

Some of the student covariates were consistently associated in the expected directions with getting drunk the last time at each setting (e.g., white race/ethnicity, living in a fraternity/sorority house, Greek organization membership, positive and negative alcohol expectancies, religiosity, GPA), while others were inconsistently associated with these outcomes. At the



university level, the prevalence of heavy episodic drinking was consistently and positively associated with risk of intoxication at the settings, while being located  $\geq 80$  miles from a large metropolitan area was inversely related to these outcomes in the presence of other university covariates.

Multilevel models with the same student- and university-level covariates were also run for any intoxication during the semester at each setting and proportion of occasions at each setting that students drank to intoxication. Results of these analyses were consistent with findings reported in Table 2, and are summarized in Table 3.

Though not shown here, an examination was made of whether there was any displacement of drinking as a result of the intervention efforts (i.e., “chasing” the drinking to some other setting). There was no change in drinking settings (e.g., to an outdoor setting). In addition, further analyses revealed significant differences in intervention effects based on the level of intervention implementation. Where implementation was at its highest level, so was the relative reduction in intoxication. At the lowest level of implementation (in fact, actually “no” intervention) there was no difference from the comparison sites. Figure 2 illustrates the nature of the observed Time  $\times$  Intervention effects on risk of intoxication the last time at targeted settings. Note that percentages in Figure 2 are adjusted for all model covariates.

### Practical significance of the Safer intervention effects

Relative reductions in risk of intoxication the *last time* at each setting were 9% for an off-campus party, and 15% for a bar/restaurant, and 6% for any setting. Relative percentage reductions were similar for any intoxication and proportion of times drunk at the settings during the semester. Substituting mean values into the full HLM models, these relative reductions translated into approximately 900 fewer students/university drinking to intoxication at off-campus parties and 600 fewer students/university getting drunk at bars/restaurants during the fall semester at Safer intervention schools relative to controls. Based on the average frequency that students went to these settings ( $M=6.8$  for off-campus parties,  $M=6.6$  for bars/restaurants), there were approximately 6,000 fewer incidents of intoxication/university at off-campus parties and 4,000 fewer incidents of intoxication/university at bars/restaurants during the fall semester at Safer intervention schools relative to controls.

### Discussion

The results support the conclusion that the comprehensive intervention was able to reduce the likelihood of intoxication at social gatherings in private homes off-campus. Where fraternity and sorority houses are part of the off-campus environment, there is evidence that the intervention had an impact there, too. Given that the intervention specifically targeted alcohol licensees (via an enforcement campaign against selling to minors), there was also a drop in intoxication in those settings. Seeing no similar impact in other settings (e.g., campus events, residence halls) boosts confidence that the impact was indeed tied to the intervention.

Nearly as notable is finding no concomitant increase in drinking at nontargeted settings. Some fear that more rigorous alcohol control measures will merely drive college student drinking to other, presumably more dangerous, settings, but that was not the case here. Future intervention studies may establish whether the concern for displacement is misplaced.

These findings should give college administrators some degree of optimism that student drinking is amenable to a combination of well-chosen, evidence-based universal prevention strategies. Here, one set of alcohol control strategies was found to be efficacious, but other

combinations may work as well, or even better. With a growing body of such evidence, and combined with strategies already shown to be effective, it will be possible to craft a comprehensive prevention program that ratchets down the harm currently produced by alcohol use on and near college campuses.

The success of this intervention lies in the choice of prevention strategies, but was also dependent on the ability of campus prevention specialists to translate the concept into concrete action. Their ability to do so depended on their training, experience, and skill in mobilizing both university and community departments and stakeholders. They provided many suggestions for overcoming potential and actual obstacles. Implementation per se has been largely ignored by the research community, despite its centrality to conducting efficacy studies. It is highly doubtful that the results here could have been achieved without the campus partners' willingness to commit to the intervention, even as it raised new and difficult problems for them. For the research community, much more work is needed to identify the implementation tactics and strategies employed by campus personnel that are sufficient, or even necessary to duplicate the effects reported here.

## Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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**Figure 1.**  
Flow of clusters (university campuses) through the group-randomized prevention trial.



**Figure 2.** Trends in percentage of students who reported getting drunk the last time they went to (a) an off-campus party, (b) a bar/restaurant, and (c) any setting, by time and intervention condition; and (d) last time at any setting by time by intervention intensity. Percentages are adjusted for model covariates indicated in Table 2. All differences in slopes are significant (see Table 2).

Table 1

Baseline student characteristics by intervention condition

Variable	14 Universities (N=19,791)	7 Intervention schools (n=9,732)	7 Control schools (n=10,059)
<b>Demographics</b>			
Aged <21 years (%)	53.1	50.6	55.6
Male, %	45.0	43.4	46.6
White, %	49.1	49.1	49.1
Married, %	5.3	6.3	4.4
<b>Class</b>			
Freshman, %	20.2	19.5	20.8
Sophomore, %	17.7	16.9	18.4
Junior, %	29.0	27.7	30.3
Senior, %	33.1	35.9	30.5
<b>Place of residence</b>			
House/apartment, %	76.3	77.7	74.9
Residence hall, %	20.9	19.1	22.8
Fraternity/sorority house, %	1.6	1.5	1.7
Other, %	1.2	1.7	0.6
<b>Extracurricular activities</b>			
Employed part-/full-time, %	51.8	50.5	53.0
Greek organization member, %	8.6	8.3	9.0
Athlete, %	15.9	14.4	17.3
<b>Intoxication at settings during semester<sup>a</sup></b>			
Any fraternity/sorority (Greek) parties, %	57.3	56.7	57.9
Last fraternity/sorority (Greek) party, %	46.6	45.9	47.2
% of Greek parties got drunk, M (SD)	0.34 (.40)	0.34 (.40)	0.35 (.40)
Any residence hall (dorm) parties, %	49.5	49.6	49.4
Last residence hall (dorm) party, %	37.1	37.2	37.0
% of dorm parties got drunk, M (SD)	0.31 (.40)	0.31 (.40)	0.31 (.40)
Any campus events, %	26.8	26.4	27.2
Last campus event, %	19.7	19.3	20.0
% of campus events got drunk, M (SD)	0.17 (.35)	0.16 (.33)	0.18 (.36)
Any off-campus parties, %	55.4	56.4	54.4
Last off-campus party, %	42.2	43.4	41.1
% of off-campus parties got drunk, M (SD)	0.34 (.39)	0.35 (.39)	0.33 (.38)
Any occasions at bar/restaurant, %	46.9	48.6	45.2
Last time at bar/restaurant, %	33.2	35.2	31.0
% of times at bar/restaurant got drunk, M (SD)	0.28 (.38)	0.30 (.38)	0.27 (.37)
Any occasions at outdoor settings, %	31.6	33.7	29.8
Last time at outdoor setting, %	22.3	23.0	21.7
% of times at outdoor setting got drunk, M (SD)	0.22 (.39)	0.24 (.40)	0.22 (.38)



Variable	14 Universities (N=19,791)	7 Intervention schools (n=9,732)	7 Control schools (n=10,059)
Any occasions at any setting, %	57.1	57.5	56.8
Last time at any setting, %	47.6	48.2	47.0
% of times at all settings got drunk, M (SD)	0.28 (.34)	0.29 (.34)	0.28 (.34)

<sup>a</sup>Based on students who provided complete data for background variables and responded to initial questions about each setting ( $n_1$ ) and/or subsequent questions about the last time at each setting ( $n_2$ ) in baseline survey years: fraternity/sorority party ( $n_1=5,211$ ,  $n_2=5,181$ ), residence hall party ( $n_1=4,047$ ,  $n_2=3,998$ ), campus event ( $n_1=3,289$ ,  $n_2=3,280$ ), off-campus party ( $n_1=13,232$ ,  $n_2=13,126$ ), bar/restaurant ( $n_1=7,239$ ,  $n_2=7,210$ ), outdoor setting ( $n_1=3,273$ ,  $n_2=3,263$ ), any setting ( $n_1=15,997$ ,  $n_2=15,857$ ).

Table 2

Multilevel logistic regression models predicting risk of intoxication last time at each setting, OR (95% CI)

Predictor	Greek party	Dorm party	Campus event	Off-campus party	Bar/restaurant	Outdoors	Any setting
Time × Condition	0.86 (0.58, 1.26)	0.93 (0.59, 1.47)	0.89 (0.59, 1.34)	0.81 (0.68, 0.97)	0.76 (0.62, 0.94)	1.13 (0.56, 2.27)	0.80 (0.65, 0.97)
Intervention group	1.15 (0.73, 1.82)	0.92 (0.52, 1.65)	0.90 (0.50, 1.64)	1.29 (0.99, 1.69)	1.66 (1.13, 2.46)	0.86 (0.33, 2.23)	1.30 (0.99, 1.72)
Control group (ref)	—	—	—	—	—	—	—
Time (survey years)	—	—	—	—	—	—	—
2005–2006 (intervention)	1.27 (0.97, 1.66)	1.24 (0.91, 1.69)	1.46 (1.12, 1.90)	1.28 (1.14, 1.45)	1.17 (1.01, 1.36)	0.50 (0.31, 0.82)	1.24 (1.07, 1.42)
2003–2004 (baseline, ref)	—	—	—	—	—	—	—
Student covariates <sup>d</sup>	—	—	—	—	—	—	—
University covariates	—	—	—	—	—	—	—
UC vs CSU system	0.84 (0.59, 1.18)	1.25 (0.85, 1.84)	0.72 (0.48, 1.10)	1.00 (0.84, 1.19)	0.63 (0.40, 0.99)	0.74 (0.39, 1.40)	0.89 (0.76, 1.05)
% white	1.00 (0.99, 1.02)	1.01 (0.99, 1.03)	0.99 (0.97, 1.01)	1.00 (0.99, 1.01)	1.00 (0.99, 1.02)	1.01 (0.99, 1.04)	1.00 (0.99, 1.01)
% living on campus	0.99 (0.97, 1.00)	0.99 (0.97, 1.00)	1.01 (0.99, 1.02)	1.00 (0.99, 1.01)	1.02 (1.00, 1.04)	1.00 (0.98, 1.03)	1.00 (0.99, 1.01)
% Greek members	1.08 (1.03, 1.12)	0.99 (0.95, 1.03)	1.01 (0.96, 1.06)	1.00 (0.98, 1.02)	1.00 (0.95, 1.06)	0.98 (0.91, 1.05)	1.01 (0.99, 1.03)
% heavy episodic drinking	5.39 (1.77, 16.43)	3.29 (0.83, 12.9)	6.10 (1.59, 23.4)	3.24 (1.83, 5.74)	2.71 (0.58, 12.69)	3.36 (0.42, 26.8)	4.06 (2.34, 6.94)
≥ 80 mi. from lg. city	0.35 (0.18, 0.67)	0.45 (0.23, 0.88)	0.60 (0.29, 1.24)	0.64 (0.46, 0.89)	0.90 (0.36, 2.25)	0.60 (0.18, 2.00)	0.60 (0.44, 0.81)

<sup>d</sup>The full model (too large to include here) includes 25 student-level covariates. The complete table is provided in Appendix B (available online at [www.ajpm-online.net](http://www.ajpm-online.net)).

**Table 3**Summary of Safer intervention (Time × Condition) effects on risk of intoxication at each setting<sup>a</sup>

Setting	Logistic regression OR (95% CI)		Linear regression beta coefficient (SE)
	Drunk at setting at least once during semester	Drunk last time at setting	Proportion of times at setting got drunk
Greek party	1.05 (0.63, 1.74)	0.86 (0.58, 1.26)	.001 (.03)
Dorm party	1.05 (0.67, 1.65)	0.93 (0.59, 1.47)	.04 (.04)
Campus event	0.98 (0.67, 1.46)	0.89 (0.59, 1.34)	-.01 (.03)
Off-campus party	0.74 (0.62, 0.89)**	0.81 (0.68, 0.97)*	-.04 (.01)*
Bar/restaurant	0.76 (0.58, 0.98)*	0.76 (0.62, 0.94)*	-.04 (.02)*
Outdoor setting	0.90 (0.66, 1.22)	1.13 (0.56, 2.27)	-.02 (.02)
Any setting	0.83 (0.69, 0.99)*	0.80 (0.65, 0.97)*	-.03 (.01)*

\* p&lt;0.05,

\*\* p&lt;0.01

<sup>a</sup> All multilevel regression models included covariates specified in Table 2.



# ALCOHOL INDUSTRY 101

ITS STRUCTURE & ORGANIZATION



American Medical Association

Physicians dedicated to the health of America



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Drinking Through Coalitions**

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**KEY FEATURES OF  
THE ALCOHOL INDUSTRY:**

LARGE, COMPLEX AND INCREASINGLY  
INTERNATIONAL IN OWNERSHIP

POLITICALLY POWERFUL AND ABLE TO INFLUENCE  
AND GUIDE MANY NATIONAL, STATE AND LOCAL  
ALCOHOL CONTROL POLICIES

EFFECTIVE IN INFLUENCING HOW THE  
MEDIA, PUBLIC AND DECISION MAKERS THINK  
ABOUT ALCOHOL, ALCOHOL CONSUMPTION,  
AND ALCOHOL PROBLEMS

CONSTANT IN ITS POLICIES, EDUCATIONAL  
ACTIVITIES AND MARKETING: DRINKING IS  
AN INDIVIDUAL CHOICE, PROBLEMS DERIVE FROM  
IRRESPONSIBLE INDIVIDUAL DRINKERS (MOST  
DRINKERS ARE RESPONSIBLE), AND CONTROL  
POLICIES OUGHT TO FOCUS ON PUNISHING  
"IRRESPONSIBLE" INDIVIDUAL DRINKERS –  
NO ONE ELSE.



## INTRODUCTION

This primer is an overview of the alcohol industry, its influential role in normalizing drinking and its opposition to prevention policies and programs it perceives as threats to its bottom line. This primer is a follow-up to *The Alcohol Industry: Partner or Foe?* published by the American Medical Association (AMA) Office of Alcohol and other Drugs and examined the industry's funding of others as well as its prevention programs. It is available online at [www.AlcoholPolicyMD.com](http://www.AlcoholPolicyMD.com). The information in this primer was current as of January 2004.

Like the tobacco industry, the alcohol industry produces a legal, widely consumed drug; is dominated by relatively few producers; and utilizes a powerful combination of advertising dollars, savvy marketing, political campaign contributions, and sophisticated lobbying tactics to create and maintain an environment favorable to its economic and political interests. It requires the recruitment of new, youthful drinkers to maintain and build its customer base. It distances itself as far as possible from research findings that show alcohol is an addictive, albeit legal, drug that has harmful effects on mental, physical and community health.

Although the industry presents substantial information that reflects favorably upon its economic and social roles, it has received little external scrutiny regarding its political strategies and how it implements them. The industry is highly visible as a producer, advertiser and supporter of community groups including impaired driving prevention groups. It has been barely visible as a powerful political complex with major policy and cultural influences on how we think about and manage alcohol problems.

The alcohol industry has effectively shaped the public image to always focus on the consumer and not on the sellers, producers and promoters of the product. As a chemical that affects our bodies, alcohol is a powerful drug resulting in more premature deaths

and illnesses than all illicit drugs combined. Yet the industry has shaped public opinion and forced government to treat it not as a drug but as a cultural artifact, a valued legal commodity, almost a food, even a necessity of life. While always acting as a business it has obscured that role with constant information portraying it as a concerned citizen interested solely in the pleasure and safety of its customers. To encourage a more thoughtful debate and understanding of this industry, this primer examines its:

- Structure and diversity
- Production and distribution systems
- Marketing and promotion strategies
- Marketing campaigns to promote "safe" drinking policies
- Lobbying tactics and efforts to defeat regulation and restriction on its operation.

The examination of the above topics dispels the myth of excessive drinking as solely the product of individual choice while underscoring the role the alcohol industry plays in contributing to the health risks, fatalities, violence, and other problems associated with underage and high-risk consumption of alcohol.



## THE ALCOHOL INDUSTRIAL COMPLEX: AN OVERVIEW

Alcoholic beverages annually generate over \$137 billion in sales in the United States for a total consumption of 7.3 billion gallons in 2002<sup>1</sup>. The alcohol industry is a powerful multinational business complex. It includes not only the producers of beer, wine and distilled spirits (“hard liquor”) and their labyrinthine network of distributors and wholesalers, but also related “hospitality” and entertainment industries such as restaurants, hotels, tourism, professional sports, and retailers from resorts and clubs to bars and convenience stores. Many additional business sectors earn substantial profits from the sale and/or promotion/advertising of alcohol: mass media, advertising industry, groceries and gas stations (in some states). Through the use of advertising dollars, the alcohol industry also exerts economic and political influence over the mass media and the public that consumes the media.

### U.S. Alcohol Retail Sales and Advertising Expenditures - 2002<sup>2</sup>

	On-Premise	Off-Premise	Total Sales	Advertising Expenditures*
<b>Beer</b>	\$ 35,920,000,000	\$ 38,515,000,000	\$ 74,435,000,000	\$ 1,169,801,000
<b>Wine</b>	9,160,000,000	11,370,000,000	20,530,000,000	122,417,000
<b>Liquor</b>	23,584,000,000	18,566,000,000	42,150,000,000	408,131,000
<b>Total</b>	\$ 68,664,000,000	\$ 68,451,000,000	\$ 137,115,000,000	\$ 1,700,348,000

\*These figures do not include additional expenditures for promotions, sponsorship, discounting, and other marketing activities. Total marketing expenditures, including advertising, have been estimated at between \$4 and \$6 billion.

Through extensive campaign contributions to members of both parties, at all levels of government, the industry maintains great political influence. Through its business presence in every community it maintains strong connections to local communities, state government and governing bodies at every level. Communities in need of new businesses in downtown areas often recruit or accept alcohol retailers to fill vacant store fronts. Community organizations and colleges may turn to the industry for donations and sponsorship – and remain uncritical of the problems that alcohol creates.

The various segments of the alcohol industry do not act as one, but they do share many common interests:

- Normalize (regularize) and encourage the consumption of alcohol
- Minimize government checks and regulation on their ability to market, advertise and distribute their product
- Minimize taxes and law violation penalties on the sale of their products

- Maximize the focus of alcohol control laws on consumer rather than corporate or retailer responsibility for harm resulting from use of their product
- Distance themselves and their product from the problems inevitably associated with its use
- Obscure and misrepresent the causes and effects of those problems in general. [This, for example, is a major reason why the industry opposes alcohol being labeled a “drug” and opposes the inclusion of alcohol in the “war on drugs.”]

The history of alcohol in America since Prohibition (1920-1933) is a story of increasing corporate and market consolidation. Between 1934 and 1982, the number of brewing companies in the U.S. shrank from 756 to 44.<sup>3</sup> The consolidation has been vertical: producers have exerted more control and ownership up and down the line from production to local distribution. The consolidated companies are active at all political levels – national, state and local (legislative and administrative). Integration has also been horizontal as companies acquire each other to reduce the number of major competitors. In the 1970s and 1980s industrial giants Philip Morris, Coca Cola and R.J. Reynolds began entering the alcohol market as well. By the early 1980s the bulk of the market was shared by a small circle of companies. And the circle has only tightened in the last two decades: the top 10 beer companies now control 95 percent of the beer market.<sup>4</sup> Some recent noteworthy consolidations were: the merger of Grand Metropolitan and Guinness in 1997, to form the multinational conglomerate and global spirits leader Diageo; the divestment by Seagrams of its drinks portfolio, which was bought up by Diageo and Pernod Ricard in 2001; the 2002 purchase by South African Breweries of control of Miller Brewing from Philip Morris (which still retains some ownership); the 2003 purchase by Constellation Brands, Inc. of BRL Hardy, Australia’s largest wine producer, to make Constellation the world’s largest wine company.

With concentration has come increased political influence. Alcohol producers have successfully chipped away at many of the restrictions on retail sales placed in state codes in the 1930s. The dramatic increases in consumption since prohibition have simultaneously provided state and federal governments with revenue from taxes on alcohol and alcohol sales. Alcohol policy has always been shaped by economic and political, as much as and often more than health, agendas.

## PRODUCTS, PRODUCTION AND DISTRIBUTION

### REGULATION

Although Prohibition was repealed in 1933, in part to reduce the violence and costs associated with an illicit alcohol market, the costs of alcoholism, social problems associated with alcohol and the negative effects of alcohol abuse on families and children remained. Reflecting these concerns, a national consensus continued to treat alcohol as a dangerous product that needs to be heavily regulated in its production, distribution and sales. Within this perspective, the public perceived distilled spirits and to some extent wine as presenting greater potential dangers to consumers and society than beer. Thus, the regulations, restrictions and taxes regarding distilled spirits are often more extensive than for beer.

### FEDERAL REGULATORS

Alcohol products, production and sales are subject to government regulations at the federal and state, and occasionally, the local level. Regulation affects distribution, labeling, advertising, credit, container characteristics, alcoholic content, tax rates (set by Congress), and litter assessments. Until recently, nearly all federal regulations involving alcohol were issued by the Treasury Department Bureau of Alcohol, Tobacco, and Firearms (BATF), established by the Federal Alcohol Administration Act of 1935

and the 1968 Gun Control Act.<sup>5</sup> However, in 2002, under the Homeland Security Act, the bureau was divided. The part remaining in the Dept. of the Treasury was renamed the Alcohol and Tobacco Tax and Trade Bureau (TTB). A new Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF) was formed in the Department of Justice. The TTB continues to administer and enforce existing Federal laws and tax code provisions related to the production and taxation of alcohol and tobacco products, and to collect excise taxes on the manufacture of firearms and ammunition. The new ATF enforces federal laws and regulations relating to alcohol, tobacco, firearms and explosives by working directly and in cooperation with others.

## STATE LICENSING

Most states operate under a *license-to-sell* system; i.e., one is required to have a state issued license to sell alcohol. Most licenses are issued, regulated and enforced by state agencies although some states allow for local licensing. Licenses to sell beer are often separate, less expensive and easier to obtain than licenses to sell distilled spirits or wine. Licensing law enforcement (including regulations banning sales to minors or to intoxicated drinkers) varies from state to state although most states maintain some state enforcement agency and allow for local enforcement agency roles as well. Specific alcohol taxation (as opposed to more general sales taxes) is primarily a federal and state right although some states permit some additional local taxation. Enforcement of alcohol sales laws in some states has been combined recently with enforcement of tobacco control laws, but in most cases state enforcement, licensing and revenue collection of alcohol and tobacco are handled separately.

## CONTROL STATES

A second, but shrinking, system of sales is known as the *control state system*; i.e., the “control” state is involved in the distribution and sale of some alcohol products (usually only wine and spirits). After

Prohibition, numerous states took control of many facets of alcohol sales and distribution. Since then under constant pressure from the alcohol industry and other businesses wanting a share of the sales market, the number of such states has greatly declined. However, 18 “control” states still maintain some direct control over certain sectors of the alcoholic beverage market.<sup>67</sup> Montgomery County, Maryland, is the only non-state government to participate in this control system.

The “control” states that sell alcohol participate in a unique way as part of the alcohol industry. They have a direct interest in the levels of revenue – profit-produced by alcohol sales – but they also have public health and safety concerns and obligations. Thus, they may exert more extensive controls on the conditions of sale and promotion. Some extend this to how alcohol is advertised. Several include extensive public alcohol education activities and focus on prevention of sales to minors.

In every state, controlled or not, the license to sell beer is more widely permitted: e.g. in liquor stores, convenience stores, supermarkets, restaurants and taverns, and sports arenas. Permits to sell and/or serve are often granted for special public events – festivals, fairs, races – and for institutional events and facilities (fund raisers, parties, campus pubs, etc.).

## INDUSTRY REGULATORY STRATEGIES

Often, the private alcohol industry heavily and persistently pushes to reduce regulation through various strategies:

- Whittle away at existing state controls
- Reduce the number and functions of control states and replace these with licensing regulations
- Limit resources available for alcohol law enforcement
- Limit (preempt) the ability of municipalities and counties to enact (often stronger) local control ordinances or to provide expanded enforcement



of state regulations [For more information on this topic, see *The Perils of Preemption* at [www.AlcoholPolicyMD.com](http://www.AlcoholPolicyMD.com).]

- Expand the number of places, situations, and times in which alcohol can be sold
- Resist or reduce any restrictions on alcohol advertising (e.g., signage; advertising content)
- Decrease existing or resist new alcohol excise taxes, license and penalty fees

Although states bear much of the burden of handling the health care and social disruption costs of alcohol consumption, they also gain significant revenue from alcohol taxes and frequently have close working relationships with industry representatives. Most governmental attention to alcohol in recent decades has focused on harm reduction: restricting when and sometimes where people drink and educating the public about potentially high-risk consumption (e.g., while operating cars and machinery; drinking during pregnancy; underage drinking; outdoor consumption). At the same time government has been used to protect and even expand the opportunities to promote, sell and consume alcohol. While there has been a clear governmental focus on treating alcoholism, prevention is usually lumped in with all other drug abuse prevention – where alcohol is treated as one amongst many, and usually not the most dangerous substance. As the federal and state governments annually declare one illicit drug crisis after another, alcohol, the most widely abused and used recreational drug, remains in the background.

“The lower priority assigned to alcohol compared with other drugs may be due in part to voter attitudes. Voters have demanded action to stop illicit drug problems, but have not expressed similar concerns about alcohol. Most voters are not aware of the costs associated with alcohol abuse, and congress does not hear from large numbers of constituents that alcohol abuse presents a problem.”<sup>8</sup>

## INDUSTRY ORGANIZATION OF SALES AND DISTRIBUTION

### A THREE-TIERED SYSTEM

The industry is organized into a three-tiered system of producers, distributors and sellers of alcohol. As explained above, when states took over regulation of these three tiers after Prohibition, they chose to either license or directly control sales and distribution. These laws (known as “tied house” laws), adopted at the state and federal levels, regulate how alcoholic beverages are marketed and how the various tiers of the industry interact. The term “tied house” dates back to before Prohibition when saloons were often tied, by ownership links or contractual obligations, to a specific manufacturer.

Although sharing many common interests, each industry tier has its own perspectives and concerns. The three tiers might conflict with each other when, for example, a manufacturer decides to increase charges to wholesalers who pass them on to retailers and ultimately consumers. Laws which give advantages to one tier over the others might be opposed by those other tiers. When producers fail to focus state laws on consumer responsibility they may shift the focus to seller responsibility. Rarely are producers held liable for the harm caused by their products. As beer production concentrated nationally, the producers focused on national regulation and sales concerns. Local retailers (i.e., local businesses) more fully integrated into local communities and cultures, tend to reflect local values and policy concerns more than a national producer. The good will of the community surrounding them can make them more responsive to addressing the negative impacts of alcohol sales and consumption – felt more strongly at the local than at the state (e.g., distributor) or national (e.g., producer) level. Conversely, they will also use their clout to influence local and state policy decisions to favor their interests.

## MOVEMENT TOWARDS ONE TIER, ONE OWNER

In recent years, there has been a strong shift away from the spirit of the “tied house” laws. The major producers have tried to eliminate these tiers by taking ownership and control at all levels (i.e., vertical integration). The distinction between the three tiers has become increasingly blurred as producers exert more control over, or even absorb, distribution networks and exert more control over retailing. Politically, this has led to national producers becoming more involved in trying to influence local alcohol policy decisions. Communities concerned with local alcohol problems now need to cope with the presence of lobbyists and opposition from national and even international producer headquarters.<sup>9</sup>

This type of vertical integration effectively consolidates power in a few hands and assists the leading producers in achieving a virtual stranglehold on market share. Although retailers are generally more subject to regulation, particularly by the states, their policies and those of the distributors, are now largely dictated by the producers themselves. Thus, the producers have created the appearance of product diversity in the various alcohol markets, with multiple low-end and high-end brands seeming to compete with each other.

But, in many cases, the “competition” is between several brands of the same parent company, as in the case of Budweiser, Bud-Light, Busch, Michelob and Corona beers - all brand names owned by Anheuser-Busch.

A new area of integration has been the development of collaborations between the beer and distilled spirits industry – industries that traditionally have seen themselves as competitors who often disagreed in key legislative area. So, we now see a number of high alcohol content malt beverages that are regulated, taxed, and sold as beer but which are packaged and named to look like well-known distilled spirits brands.

A consequence of integration is that the policy and economic interests of the three tiers have blended in favor of national and international producers. The expressed interests of some retailers, for example, have become more similar to those of the producers who increasingly sponsor and fund (and thus influence) the state activities of various retailer associations. Thus, one might find local retailers taking one stance on local public policies and a state association taking another stance representing the interests of the producers.

Anheuser-Busch, the leading brewer nationally and globally, no longer allows its distributors to carry any products other than its own, and has been involved in several high-profile legal battles in its attempts to assert control over its distributors. In 1996, August Busch III's daughter Susie Busch Transou was given responsibility for AB's Florida distributors, including the Gainesville distributorship which was awarded to baseball star Roger Maris by Cardinals team owner August Busch Jr. after the 1967 world series, and owned and operated by the Roger Maris family for 30 years. When the Maris family rejected Busch's buyout offer as unreasonably low, the beer giant terminated the contract and sold the Gainesville franchise, alleging mismanagement and falsified documents. The Maris family sued for breach of contract and in 2002, was awarded \$50 million by a circuit court judge.<sup>10</sup> Diageo, the world's largest spirits marketer, has also recently re-organized its vast network to accomplish similar goals.

## SOME COMMENTS FROM A STATE REGULATOR

The 1990s brought some new challenges to state and local governments who are the primary regulators of alcohol sales and consumption. These stem from a few key mergers in the 1990s coming on top of a gradual process of consolidation in the alcohol industry over the past 30 years. Increasingly, the dominant players are national, multi-national or foreign-owned businesses. These present several issues for local and state regulators:

1

National or international businesses are more difficult to work with just because their head office or management is out of state or in another country. Communication is more difficult and a company's representative often has "marching orders" without the ability to compromise.

2

Foreign-owned businesses have no history with the U.S.'s unique style of alcohol regulation. Not only are they confronted with different regulations in each state, but also tied house laws prohibit connections with the retail sector. No doubt, the newly formed companies react negatively to this chaotic array of regulations, seeing them as barriers to business. They may or may not be aware that the "three-tiered system" was designed to prevent the abuses experienced in this country prior to prohibition. Before prohibition, large alcohol manufactures owned strings of retail outlets that were pressured to engage in heavy promotion of intoxication.

3

Small operators—usually in the wine and microbrewery business—are generally responsible operators. These are craft operators who are primarily interested in selling the quality of their product but not quantity consumption. However, they have a difficult time competing and some get bought out by large concerns or are just muscled out of business.

4

Associations of licensees—grocers, restaurateurs—are often powerful political forces. But, because their members have families that live in local communities, they are usually careful not to advocate for something that would clearly offend or be a danger to our communities. It is usually easier to work with these groups in the typical "give and take" arena of politics. This could change, however, as mergers impact this business sector as well. Large chains of grocers and restaurants are gaining in dominance.





## BEER

Beer is the largest alcohol segment nationwide and internationally, accounting for roughly 86 percent of all alcohol volume sold in the United States and annually generating over \$74.4 billion in retail sales.<sup>11</sup> The industry has continued to grow and increase its profitability despite economic and even consumption downturns. For example, at the start of 2003 Anheuser-Busch had experienced 16 straight quarters of earnings-per-share growth.<sup>12</sup> The beer industry, like that of spirits and wine, is organized in a “three-tier” distribution system consisting of producers, wholesalers (or distributors) and retailers.

The beer industry is a vast global network of transnational producers, subsidiaries and joint ventures with local partners. Beer itself has many variations, from light beer, clear beer, ice beer to higher alcohol content brews such as stout, ale, or malt liquor. Technological advances in manufacturing, transportation and refrigeration make it possible to cheaply produce, store and ship large quantities of beer. These techniques have spread rapidly around the globe. The beer market is the most concentrated of the three alcohol sectors. Anheuser-Busch is the number one seller and the world’s largest brewer; in 2003 it had over 50 percent of the domestic U.S. market share.<sup>13</sup> Combined with South African Breweries’ Miller Beer (SABMiller is the world’s second largest brewer), these two companies account for over 70 percent of all U.S. beer sales.<sup>14</sup> The top 10 beer companies combined now control 95 percent of the beer market. Of the \$19.1 billion in federal, state and local taxes paid by the alcohol industry in 1999, more than \$9 billion came from the beer industry (spirits contributed \$8.1 billion and wine just over \$2 billion).<sup>15</sup> Although some beer companies operate as regional or even local beers, these continue to decline in number, often closing or being sold to a larger national brewer.

**Craft beer:** This industry segment includes about 1,400 brewpubs, microbreweries, regional specialty breweries and contract brewing companies. Although proliferating, they still only account for a small share of the market and cater to more local tastes and interests. In 2001 they produced 6.4 million barrels of beer with a total industry annual retail sales of

\$3.8 billion. The regional specialty breweries account for almost 60 percent of the production volume in this industry segment.<sup>16</sup> Some microbreweries are owned by the larger breweries or are themselves part of small brewery/restaurant chains.

## SPIRITS

Spirits, strong alcoholic liquor produced by distillation, generated \$42.1 billion in retail sales in 2002.<sup>17</sup> While the beer and spirits markets have much in common, there are some important distinctions. Distilled spirits are more complex, often costlier products to produce and require substantial know-how to produce in large quantities. Some products (e.g., whiskey, cognac) which require aging have added storage costs over time. As a result of these factors, production of spirits is more localized than that of premium beer. More typically, spirits producers export bulk concentrate for local mixing and bottling. Spirits also vary widely in terms of strength, although products with an alcohol content higher than 50 percent (100 proof) are rare except in the informal production sector, which is minimal in the U.S. While the distilled spirits market's concentration is less pronounced than that of beer, it is still very high and increasing: the top five spirits marketers control 59 percent of the U.S. market.<sup>18</sup>

## WINE

Wine, both in terms of production and consumption, is the smallest of the three main types of alcohol. In 2002, total U.S. wine sales were \$20.5 billion.<sup>19</sup> The wine industry has suffered a decline in recent years and many wine-making countries or regions have responded to the oversupply by limiting production and focusing on other grape-derived products such as non-alcoholic fruit juices. The wine industry is most significant in terms of its ownership ties to the major spirits producers: Constellation Brands, United Distillers & Vintners (Diageo) and Brown-Forman occupy the number two, seven and 9 slots, respectively, in the U.S. wine market with a combined market share of 23.7 percent.<sup>20</sup> E. & J. Gallo Winery is the world's largest wine maker. It produces about 30 percent of the wine sold in the U.S.<sup>21</sup>

## SOME IMPLICATIONS OF INDUSTRY CONCENTRATION

With increased concentration comes increased wealth, and a growth of the political and market influence of a relatively small number of players. For example, where once many regional and local beer brands were key economic and political players in their regions, we now see only three corporations with extensive influence at all levels. This translates into:

- Increased purchasing influence (e.g., in the mass media)
- Influence over organizations they sponsor and for whom they are a major purchaser of services
- Increased ability to operate politically at all fields (campaign contributions, placement of lobbyists and representatives in the field)
- Movement of key political and economic decision making away from state and local bodies to national and international levels.

This makes the expression of community concerns extremely difficult. It is often easiest for concerned citizens to act locally on business, political and media activities. They know who to influence and have the resources to approach and influence them. Not surprisingly, the strongest alcohol control policies have been local and then state. Citizen input at the national or international level is greatly diminished, far costlier, and harder to organize – if possible at all. As the level to impact goes up citizens are faced with opponents with far greater economic resources and abilities to influence decision makers. As a smaller number of brand names dominate the consumer market, they become increasingly familiar as household names. Youth especially begin to express brand loyalties and awareness along these lines which can then carry over into adult behaviors.

## MAJOR PLAYERS IN THE U.S. ALCOHOL INDUSTRY – A QUICK PICTURE

	Beer	Liquor	Wine
<b>Largest Producers</b>	<ul style="list-style-type: none"> <li>Anheuser-Busch</li> <li>Coors</li> <li>Pabst</li> <li>SAB/Miller</li> </ul>	<ul style="list-style-type: none"> <li>Allied Domecq</li> <li>Bacardi-Martini</li> <li>Brown-Forman</li> <li>Constellation Brands</li> <li>Fortune Brands</li> <li>Guinness-UDV (DIAGEO)</li> <li>Heaven Hill Distilleries</li> </ul>	<ul style="list-style-type: none"> <li>Constellation Brands</li> <li>E. &amp; J. Gallo Winery</li> <li>The Wine Group</li> </ul>
<b>Industry Advocacy &amp; Lobbying</b>	<ul style="list-style-type: none"> <li>American Beverage Institute (ABI)</li> <li>American Beverage Licensees (ABL)</li> <li>Association of Brewers</li> <li>Beer Institute</li> <li>National Beer Wholesalers Association</li> <li>www.beerservesamerica.org</li> </ul>	<ul style="list-style-type: none"> <li>ABI</li> <li>ABL</li> <li>Distilled Spirits Council of the United States (DISCUS)</li> <li>Wine &amp; Spirits Wholesalers of America (WSWA)</li> </ul>	<ul style="list-style-type: none"> <li>ABI</li> <li>ABL</li> <li>Wine Institute</li> <li>American Vintners Association</li> <li>WSWA</li> </ul>
<b>Alcohol Education &amp; Research</b> primarily industry funded	<ul style="list-style-type: none"> <li>Alcohol Beverage Medical Research Foundation (ABMRF)</li> <li>International Center for Alcohol Policies (ICAP)</li> <li>"We I.D."</li> </ul>	<ul style="list-style-type: none"> <li>Century Council</li> <li>ICAP</li> <li>Point of Sale Campaign/Front Lines</li> <li>Responsible Hospitality Institute</li> </ul>	<ul style="list-style-type: none"> <li>ICAP</li> <li>Responsible Hospitality Institute</li> </ul>
<b>Alcohol Education &amp; Research</b> some programs and organizations with substantial industry funding and/or support	<ul style="list-style-type: none"> <li>Boost Alcohol Consciousness Concerning the Health of University Students &amp; Greeks Advocating Mature Management of Alcohol (BACCHUS &amp; GAMMA)</li> <li>National Collegiate Athletic Association (NCAA) Choices program</li> <li>National Collegiate Alcohol Awareness (NCAA) Week</li> <li>National Commission Against Drunk Driving (NCADD)</li> <li>National Social Norms Resource Center (Northern Illinois University)</li> <li>Training for Intervention Procedures by Servers of Alcohol (TIPS)</li> <li>"Family Talk About Drinking"</li> </ul>	<ul style="list-style-type: none"> <li>Alcohol 101®</li> <li>BACCHUS &amp; GAMMA</li> <li>Full House at Prom Night</li> <li>Promising Practices Sourcebook (college)</li> <li>Ready or Not:® Talking with Kids About Alcohol</li> <li>Training for Intervention Procedures by Servers of Alcohol (TIPS)</li> <li>Cops in Shops</li> </ul>	

**Common State and Local Level Allies (can vary considerably by location and issue):** State and local alcohol producers and their associations: microbreweries, vineyards, etc.

**Retail associations often representing alcohol vendors:** bars/taverns/clubs, distributors and wholesalers, restaurants, hotels and resorts, convenience stores, grocers and supermarkets, liquor stores, drug stores and gas stations (in some states).

**Business sectors that often benefit from alcohol sales, promotion, advertising or alcohol industry funding or sponsorship:** mass media (television, radio, magazines, newspapers) advertising and marketing industry, professional sports teams and associations, tourism bureaus, some higher education and arts organizations; some community fund raising groups; some community festivals/fairs.



## TOP TEN WINE BRANDS, 2002

(thousands of 9-liter cases)

Rank	Brand	Supplier	2002
1	Franzia Wine Taps	The Wine Group	20,892
2	Carlo Rossi	E & J Gallo Group	12,900
3	Twin Valley	E & J Gallo Group	10,000
4	Almaden	Constellation Brands*	9,680
5	Livingston Cellars	E & J Gallo Group	7,200
6	Sutter Home	Trincherro Family Estates	7,083
7	Beringer	Beringer Blass Wine Estates	7,000
8	Woodbridge	Robert Mondavi Winery	6,785
9	Boone's	E & J Gallo Group	4,700
10	Inglenook	Constellation Brands*	4,340

\*Current corporate name; formerly named Canandaigua Wines Source: Adam Wine Handbook, 2002 Edition.

## TOP TEN WINE SUPPLIERS, 2002

Rank	Supplier	Sales \$Millions	Sales Share	Volume Cases	Volume Share
1	E & J Gallo Group	\$1,298	18.4%	64,575	26.2%
2	Constellation Brands*	895	12.7%	36,785	14.9%
3	The Wine Group	806	11.4%	31,383	12.7%
4	Beringer Blass Wine Estates	552	7.8%	10,435	4.2%
5	Robert Mondavi Winery	427	6.1%	8,857	3.6%
6	Kendall-Jackson Wine Estates	336	4.8%	4,686	1.9%
7	Brown-Forman Beverages	307	4.4%	5,680	2.3%
8	Trincherro Family Estates	240	3.4%	7,925	3.2%
9	Southcorp Wines, USA	225	3.2%	4,268	1.7%
10	Allied Domecq Wines, USA	193	2.7%	2,486	1%

\*Current corporate name; formerly named Canandaigua Wines Source: Adam Wine Handbook, 2002 Edition.

## TOP 10 U.S. LIQUOR MARKETERS, 2002 - PERCENT MARKET SHARE BY VOLUME

Rank	Distiller	Percent Market Share
<b>1</b>	Diageo PLC	20.0
<b>2</b>	Constellation Brands	9.7
<b>3</b>	Jim Beam Brands/Future Brands	9.5
<b>4</b>	Allied domecq Spirits USA	7.9
<b>5</b>	Bacardi USA	7.8
<b>6</b>	Brown-Forman Beverages	7.0
<b>7</b>	Heaven Hill Distilleries, Inc.	4.8
<b>8</b>	Schieffelin & Somerset	3.8
<b>9</b>	Pernod Ricard USA	3.4
<b>10</b>	Absolut Spirits Co./Future Brands	2.9
	Total Top 10	76.8

Source: Adam Liquor Handbook, 2003 Edition.

## TOP TEN LIQUOR BRANDS, 2002

Rank	Brand	Supplier
<b>1</b>	Bacardi - Rum	Bacardi USA
<b>2</b>	Smirnoff - Vodka	Diageo
<b>3</b>	Absolut - Vodka	Absolut Spirits/Future Brands
<b>4</b>	Captain Morgan - Rum	Diageo
<b>5</b>	Jack Daniel's - Straight	Brown-Forman Corp.
<b>6</b>	Jose Cuervo - Tequila	Diageo
<b>7</b>	Jim Beam - Straight	Jim Beam Brands
<b>8</b>	Crown Royal - Canadian	Diageo
<b>9</b>	Seagram's Gin	Pernod Ricard USA
<b>10</b>	Dekuyper - Cordial	Jim Beam Brands

Source: Adam Liquor Handbook, 2003 Edition.

## TOP TEN U.S. COMMERCIAL BREWERS, 2002<sup>22</sup>

Rank	Brewer	Sales – 31-Gallon Barrels	Percent Share of U.S. Sales Market
<b>1</b>	Anheuser-Busch	101,800,000	50.03
<b>2</b>	Miller	39,660,000	19.49
<b>3</b>	Adolph Coors	22,688,000	11.15
<b>4</b>	Pabst *	8,500,000	4.18
	<i>Imports: Heinekin, Labatt, Barton/ Gambrinus (Corona), Barton and Diageo (Guinness)</i>	<i>Est. 4,000,000 each</i>	
<b>5</b>	Boston Beer	1,280,589	0.63
<b>6</b>	D.G. Yuengling & Sons	1,220,000	0.60
<b>7</b>	LaTrobe	1,040,000	0.51
<b>8</b>	Genesee	900,000	0.44
<b>9</b>	Sierra Nevada	566,098	0.28
<b>10</b>	City (LaCrosse)	510,000	0.25
	<b>Total Domestic**</b>	<b>180,400,000</b>	<b>88.7</b>
	<b>Total Import</b>	<b>23,070,000</b>	<b>11.3</b>
	<b>Total U.S. Export</b>	<b>4,350,000</b>	
	<b>Total</b>	<b>207,820,000</b>	

\* Pabst Brewing Company has closed its breweries and is now produced under contract by SABMiller.

\*\* Figures do not include exports

## TOP TEN BEER BRANDS, 2002

Rank	Brand	Supplier	2002 (Thousands of 2.25-Gallon Cases)
<b>1</b>	Bud Light	Anheuser-Busch	505,000
<b>2</b>	Budweiser	Anheuser-Busch	423,000
<b>3</b>	Coors Light	Coors Brewing	232,500
<b>4</b>	Miller Lite	Miller Brewing	214,500
<b>5</b>	Natural Light	Anheuser-Busch	113,500
<b>6</b>	Busch	Anheuser-Busch	99,500
<b>7</b>	Corona Extra	Barton/Gambrinus	91,278
<b>8</b>	Busch Light	Anheuser-Busch	78,300
<b>9</b>	Miller High Life	Miller Brewing	73,000
<b>10</b>	Miller Genuine Draft	Miller Brewing	66,500

Source: Adams Beer Handbook, 2003 Edition



## THE INTERNATIONAL PICTURE— WHAT LIES AHEAD AT HOME

The vast majority of alcohol production is consumed in domestic markets. Thus, alcohol is of limited significance as an export product; it constitutes about 10 percent of international trade.<sup>23</sup> However, the export of brand names and brand recipes is a major component of the marketing and distribution philosophies of the leading alcohol producers. During the last 30 years they have systematically expanded into the developing world, spearheaded by sophisticated marketing and advertising strategies. Diverse, scattered local production facilities have been incorporated into the global network of multi-national corporations, which have come to dominate world alcohol trade. In the annual reports of the top producers, these goals are stated explicitly. Graham MacKay, chief executive of South African Breweries, the world's 2nd largest brewer, observed, "All the growth to be had is outside the developed world."<sup>24</sup> The third sentence in Seagram's 1996 annual report proclaims: "Our single biggest opportunity is global expansion."

Alcohol production is now the end result of a complex set of global economic and trade processes with major producers increasingly operating on an international scale. As Anheuser-Busch actively expands in Europe and China, South African Breweries' purchase of Miller Brewing made it the second largest U.S. beer producer. Diageo, an English firm, purchased Seagrams and a number of U.S. distilled spirits and wine brands. International free trade agreements, focused on reducing impediments to free trade, will increasingly come into play to challenge local, state and even national restrictions on a wide range of products, including alcohol. Efforts at local control policies will face additional international challenges by international companies with international brands. Policies to protect communities from the alcohol-related harm will be challenged as unfair restraints of trade and impediments to free access to markets (i.e., consumers). Local and national cultural differences are challenged by international marketing and promotion techniques. The chief executive of a leading Asian beer

company explains: "A beer is a beer is a beer... So therefore it is all about brands... We are not selling beer, we are selling image."<sup>25</sup>

A reduction in the number of competitors, particularly at the national level, and a near-monopolistic dominance, provides the springboard for the next step: international expansion. This is illustrated clearly by the fact that the top 20 brewers account for more than 65 percent of the world beer market.<sup>26</sup> While the beer, wine and spirits sectors each continually strives to increase its share of the consumer market, mergers and new product introduction continue unabated and concentration of ownership and supply rapidly grow.

## A BRIEF INTRODUCTION TO ALCOHOL MARKETING: HOW TO WIN FRIENDS AND INFLUENCE PEOPLE

As a whole, the alcohol industry spends in excess of \$4.8 billion a year in the U.S., or the equivalent of \$13 million a day, on promotional activities, including advertising and sponsorships.<sup>27</sup> To put this in perspective, \$70.5 million is spent on milk ads per year, about what the alcohol industry spends in one week.<sup>28</sup> The entire 2005 budget of the National Institute on Alcohol Abuse and Alcoholism was only \$442 million, or about 10 percent of the alcohol industry's marketing budget.<sup>29</sup> The impact of these marketing dollars on our consumption habits and acceptance of alcohol's role in our lives—and acceptance of industry supported policies—cannot be overestimated. For example, college students annually (1991) spend an estimated \$5.5 billion on alcohol, mostly beer. This is more than they spend on books, soda, coffee, juice and milk combined.<sup>30</sup> With the exception of ongoing campaigns against drinking and driving, and to prevent fetal alcohol syndrome, there have been no national, federally funded media campaigns focused on preventing underage drinking or other alcohol-related problems since the early 1980s. Alcohol has been legislated out of the focus of the War on Drugs and is only considered

one among many drugs in other drug abuse prevention activities. In effect, in the mass media, the alcohol industry has been a primary and a pervasive source of public information about the product and its impacts. This helps frame public discourse about alcohol, its benefits, and why consumers, more than the industry, are held responsible for any alcohol-related harms.

After Prohibition's repeal, alcohol companies were still wary of alienating or upsetting the public. The public's concerns, especially about the negative impact of distilled spirits consumption, was reflected in higher taxes and greater controls on liquor than on beer or wine. For a good many years alcohol advertising was mainly limited to specific, product-based advertising. As television grew, the liquor industry voluntarily excluded itself from advertising in that media. It wasn't until the late 1970s, when Philip Morris purchased Miller Beer, that things began to change. When Philip Morris entered the beer market, it brought with it the advertising strategies that had helped it sell cigarettes. This marked the beginning of a shift towards "lifestyle" marketing that would eventually have a profound and revolutionary effect on the advertising of the alcohol industry as a whole.

Marketing plays a critical role in the globalization of patterns of alcohol use and reflects the revolution that is occurring in advertising in general. The same types of marketing images appear internationally.

## BRANDING

In today's marketplace where consumers can choose among competing brands of the same product, brand and image promotion is preeminently important. Among U.S. brand names, only 25 percent of expenditures are used to purchase mass media ads (known as measured media) while 75 percent goes to promotional enterprises ("unmeasured" media) such as:

- sponsorships of professional and collegiate sports, concerts, community events and groups, educational and art institutes

"...the global brand owners in the beer and spirits categories have kept tight control over their products. Although they may not directly control production of their products, they are likely to dictate marketing approaches to promote a consistent product image worldwide. Sophisticated market research tools combined with the use of religious and cultural symbols, coupon and sweepstakes schemes, sexual innuendo and health and strength claims, have been used to encourage consumption of the companies' products.

The ability and willingness of the global producers to spend heavily to maintain product image create high barriers to entry for other firms, whether local or international . . . . accelerating the trends towards concentration in ownership of the alcohol supply worldwide. The health danger of this concentration lies in the economic and political influence that may accrue to the leading companies. This may give them the potential to block or temper efforts to control alcohol consumption and problems at the same time that they rely on huge marketing budgets to encourage consumption of their products.

. . . Developing a policy infrastructure able to monitor and regulate alcohol markets is an important public health challenge."

World Health Organization. Global Status Report on Alcohol. Geneva: Substance Abuse Department, Social Change and Mental Health, World Health Organization, 1999: Pp 35-36.

- product tie-ins such as clothing and recreational paraphernalia, product placement in movies and TV
- special contests.<sup>31</sup>

These sponsorships and products provide direct ways for the alcohol industry to use a wide range of community institutions to promote their names, and products, and to create a positive, even emotional, relationship between the brand and consumers. Loyalty and personal brand connections contribute to ongoing purchases. This bonding creates a positive image of the producer as a friend so as to diminish positive responses to criticisms of that “friend” or to sellers of the product. This type of loyalty can often be seen on college campuses among students who not only have brand loyalty and possess a wide range of brand paraphernalia (posters, neon signs, mugs and glasses, towels, etc.) but who rarely see that their relationship to that brand is simply a commercial transaction – they pay and consume, someone else profits. Activities are designed to integrate the product into consumer and societal lifestyles – which then respond by viewing the industry’s goals as their own. Ivan Menezes, Diageo’s director of commercial global strategy, states explicitly the process by which a brand of alcohol is depicted as representing personal “values”:

“We’ve got to own the emotional heartland of the category and connect with the consumer in a way that goes beyond the rational aspects of the brand... The emotional high ground we believe Johnnie Walker [whisky] can hold surrounds the area of inspiring personal progress. That whole area carries a set of values that works extremely well across borders.”<sup>32</sup>

## RESOURCES DIRECTED AT KEY CONSUMER TARGETS

National data and scientific research indicate that the age of drinking initiation has declined (to age 11 or 12), binge drinking among adolescents has increased, and the long term effects on adolescent development and maturation can increase life long risks for alcoholism, injury and other alcohol-related problems. Thus, alcohol’s role in the lives of young people is a major public health and alcohol control policy concern. Promotion strategies to position alcohol products as integral to particular lifestyles or cultural or ethnic experiences are seen in the various promotions employed to tie products to sports and popular music desired by the target – young people. Young populations, formerly seen as off-limits and not an appropriate target for advertising, have now become the focus of efforts to build brand recognition and lifetime consumption. The alcohol industry is not alone in this marketing revolution, but it is a vibrant, innovative part of it.

“Alcohol advertising is designed to highlight the attractions of using alcohol, especially to enhance the enjoyment of social occasions, and to induce or persuade potential customers to feel favorably towards the promoted product. Even though these messages may not be intentionally targeted at youths under 21, messages aimed at “young adults” (e.g., ages 21- to 25-year olds) will inevitably reach older teens . . . many of those messages will also be attractive to children and teenagers (those under 16).”

(National Research Council and Institute of Medicine *Reducing Underage Drinking: A Collective Responsibility*, Committee on Developing a Strategy to Reduce Underage Drinking, Richard J. Bonnie and Mary Ellen O’Connell, eds. Washington, DC: The National Academies Press. 2003; p135.)



## SPORTS MARKETING

Sports marketing offers another highly effective means to reach young drinkers. Sporting events attract substantial young audiences, particularly young men, who studies show are the heaviest consumers of alcoholic beverages. Alcohol industry sponsorship of college sports has become a common feature of university life. Just look up at the scoreboard at many major college or professional sports events. College football, especially, is associated with heavy drinking, beer brand sponsorship of athletic department activities and televised broadcasts. In 2001, of the \$811 million spent on television alcoholic beverage advertising, \$491 million was spent on sports programs and had the largest youth ad viewing audience of any type of programming with alcohol advertising.<sup>33</sup> Alcohol industry sponsorship of major national and international sports competitions such as the Super Bowl, Olympics and World Cup assure brand familiarity throughout the world.

### "Sports sponsorships connect with adult consumers

Budweiser's backing of the world's most popular sporting event, the World Cup, is a prime example of how Anheuser-Busch uses sports sponsorships to connect with adult consumers from a wide demographic background. Anheuser-Busch brands sponsor the Ladies Professional Golf Association, Major League Baseball, Major League Soccer, NASCAR, the National Basketball Association, the National Football League, the National Hockey League, the Professional Golfers' Association and the Women's National Basketball Association."

"Budweiser and Bud Light broadened their appeal to contemporary adults by stepping up music sponsorships in 2002. . . . which includes "One Night Stand" concerts . . . in small venues where attendance is open only to those who get tickets through Budweiser."

"Recognizing the potential to reach consumers in their homes, Anheuser-Busch was the first brewer to sponsor a national television show."

*Source: Anheuser-Busch Annual Report 2002, p. 10*

## YOUTH MARKETING

On both the big and small screens (TV and computer), alcohol is highly visible to young people. The Federal Trade Commission reported that eight of the largest alcohol companies had made product placements in "PG" and "PG-13"-rated movies with primarily young audiences, and on eight of the 15 television shows most popular with teenagers.<sup>34</sup> A 2002 Center for Science in the Public Interest (CSPI) survey found that more than 73 percent of teens ages 12 to 18 had seen alcohol beverage television advertisements after 9 p.m. on school nights, including 71 percent of youths ages 12 to 13.<sup>35</sup> A study of alcohol advertising in a sample of 35 magazines, 1997 to 2001, found that beer and distilled liquor ads appeared more frequently in magazines with higher adolescent readership and that this advertising was "increasing exponentially as adolescent readership increased."<sup>36</sup> Illustrating the fact that advertisers "may be aware of adolescent consumption demographics," the authors pointed out that wine advertising was associated with higher income adults and young adult readership. Ads for wine do not appear in magazines with youth readership – producers know who is and should be drinking their product and advertise accordingly. An analysis of 289,381 alcohol ad placements on television in 2002 found that youth 12-20 saw two beer and distilled spirits ads on television for every three seen by adults and nearly three ads for low alcohol refreshers for every four seen by the adults. The study concludes that the alcohol industry's voluntary guidelines for alcohol ad placements are inadequate and allow for alcohol ads to be placed on programs where there are twice as many youth as in the viewing population.<sup>37</sup>

During the past two decades the alcohol industry has invested heavily in production and promotion of drinks that will appeal to youth - "alcopops," pre-mixed cocktails and "energy drinks"- sweet, energy drinks, fruity drinks with a high alcohol content at an affordable price. The brand names of these drinks, which blur the distinction between alcohol and soft drinks, are far more likely to be recognized by teenagers than by adults.<sup>38</sup> Additional malt liquor drinks (that offer high alcohol content at low prices), "test tube" shots in dynamite-shaped packages,

beverages that change the color of the drinker's tongue, products with labels like "hot sex" and other novelty beverages are all designed to encourage heavy drinking among young people by introducing "fun," affordable ways to consume alcohol. Many of these products are not noticed by adults who might object to their use by children. They provide a new access to the underage market without consideration for the health impacts on that market. Again, one impact is that alcohol products are placed within the existing lifestyles of young people.

### MARKETING TO MINORITIES

While a major target for alcohol producers is youth, the alcohol industry also understands the importance of niche marketing - an approach crafted to appeal principally to only a segment or segments of the population. Minority populations are seen as more accessible and offer the alcohol industry an opportunity to exploit culture and community.

Traditional promotion and advertising campaigns include billboards, magazines, broadcast and in-store displays. The 1990s saw the industry sponsoring music festivals and neighborhood events. In addition, minority-based nonprofit organizations were pursued by alcohol companies as opportunities for corporate donations. Every year, nearly all the nation's major Latino groups receive thousands of dollars - sometimes millions - in alcohol industry donations.<sup>39</sup> These donations allowed the companies to associate themselves with good works and activities.

Alcohol industry advertisements often exploit important cultural symbols especially in Latino and African-American communities.<sup>40</sup> Commemorative celebrations such as Cinco de Mayo have become ripe

opportunities for the alcohol industry to sell more product, promote the use of its product as an appropriate way to celebrate and to associate a particulate company as a champion for a particular cultural event. What was once a holiday representing Mexican Americans' fight for civil rights, Cinco de Mayo has hit a fiesta-fever pitch, recognized as a "drinking holiday" fueled by alcohol companies advertising.<sup>41</sup>

"It's just an excuse to drink - like St. Patrick's Day," said Faris Bushnaq, manger of Chevy's Fresh Mex Restaurant in Hollywood. "...This will be our biggest event of the year - something for the whole family"<sup>42</sup>

In five media markets in 2002—San Antonio, Los Angeles, Miami, Houston, and San Francisco—Hispanic youth were overexposed to English-language radio alcohol advertising even more than non-Hispanic youth. These five markets were also among seven markets that accounted for 85% of alcohol advertising spending on Spanish-language television.<sup>43</sup> The beer and ale industry was the seventh highest-spending industry on Spanish-language television in 2002, outspending the makers of cats, soft drinks, and motion pictures.<sup>44</sup>

The marketing of alcohol products in African-American communities has, on occasion, stirred national controversy and met with fierce resistance from African Americans and others. Charges of over-concentration of alcohol billboards in African-American neighborhoods have prompted protests and legislative fights in Chicago, Milwaukee, Baltimore, Los Angeles and elsewhere.<sup>45</sup>

Alcohol advertisers placed ads on 86 programs on BET (Black Entertainment Television) in 2002, but 65% of advertising spending and two-thirds of the ads were on

just six programs. According to audience data obtained from BET, youth in general were more likely to see all six of these programs than adults, and four of the six drew disproportionate numbers of African-American youth relative to African-American adults.<sup>46</sup>

### MARKETING HEALTH AND PERCEPTIONS

In recent years the wine industry, now joined by the beer and liquor industries, has been notable for its aggressive promotion of research indicating the limited health benefits, but not the extensive risks of alcohol consumption. These marketing tactics sell their products and support policy changes favorable to alcohol producers. This research has been used to:

- Argue for changes in wine labeling to reflect the health benefits
- Reduce taxes on these “health producing” products
- Support the concept that moderate, i.e. “healthy,” drinking is beneficial and therefore policies which restrict the rights of moderate drinkers are unhealthy and misguided

Some scientists have become involved in industry-sponsored initiatives while the industry interprets and promotes the research which favors its cause. Industry sponsored commentators also attack independent researchers and policy makers who set research agendas.<sup>47</sup> These efforts reached one crescendo following the issuance of new U.S. Dietary Guidelines in 2000. Warning that even one drink per day can slightly increase the risk of breast cancer, the Guidelines noted that moderate consumption (defined as no more than one drink a day for women or two drinks a day for men) may reduce the risk of coronary heart disease in certain individuals. The guidelines indicate that these possible benefits do not apply to:

- Youth under 21
- Women who are or may become pregnant
- Individuals taking prescription or over-the-counter medications that can interact with alcohol

- Individuals of any age who cannot restrict their drinking to moderate levels
- Individuals who plan to drive, operate machinery, or take part in other activities that require attention, skill, or coordination

The Wine Institute has used research on the health benefits of wine and similar findings to promote increased alcohol consumption and availability. In a widely publicized proposal to the Bureau of Alcohol, Tobacco and Firearms in 1996, it offered a new container label referring wine drinkers to the Dietary Guidelines “to learn the health benefits of moderate alcohol consumption.” However, the ATF refused to sanction the claim and the wording of the proposal was changed to health “effects”.<sup>48</sup>

As additional research has confirmed the possible cardiovascular benefits of light drinking (no more than one or two drinks per day in most studies) for some populations, these studies have also shown those benefits are primarily for white males over 40 and women over 50 and excluded some specific populations as well as those identified by the Dietary guidelines. The alcohol industry, aided by simplistic media headlines indicating that daily drinking is good for you (i.e., everyone), has extensively exaggerated, simplified and promoted these findings to indicate that regular moderate drinking is healthy – a vast overstatement of benefits found to help only some of the total population. It should be noted that at this point, most of these studies have not been conducted prospectively (i.e., introduce alcohol to a population and follow them and the effects over time) which would present a far more accurate picture of effects. Nor do these studies look at total risks or potential harms for even the populations who might receive cardiovascular benefits from consumption but for whom consumption may pose risks to other body organs or other potential health risks.



The National Institute on Alcohol Abuse and Alcoholism (NIH, USDHHS) in its State of the Science Report on the Effects of Moderate Drinking concludes that ...“moderate alcohol use” should not be construed as “healthy alcohol use”. . . the relationship between moderate alcohol consumption and disease outcome is confounded and modified by numerous individual differences – age, gender, genetic susceptibility, metabolic rate, co-morbid conditions, lifestyle factors, and patterns of consumption, just to name a few. Protective and detrimental levels of alcohol consumption cannot be generalized across the population...The potential for moderate alcohol consumption to increase risk for one disease may be offset or outweighed by its potential to decrease risk for another disease, depending on the individual’s family history, medical history, genetic makeup, and lifestyle. The current scientific knowledge on the risks and benefits related to various levels of alcohol consumption does not suggest a need to modify the existing guidelines on moderate alcohol use. Except for those individuals at particular risk (as are described in the current guidelines), consumption of two drinks a day for men and one for women is unlikely to increase health risks. As risks for some conditions and diseases do increase at higher levels of consumption, men should be cautioned to not exceed 4 drinks on any day and women to not exceed 3 on any day.

([www.niaaa.nih.gov/publications/ModerateDrinking-03.htm](http://www.niaaa.nih.gov/publications/ModerateDrinking-03.htm))

## ALCOHOL INDUSTRY PREVENTION ACTIVITIES – THE ANTIDOTE TO DEMANDS FOR GREATER INDUSTRY ACCOUNTABILITY

Over the years, the alcohol industry has answered critics of its promotional tactics by launching big-budget public education campaigns ostensibly aimed at encouraging Americans to drink safely while promoting the assumption that people will “drink.”

In fact, only half (50.1 percent) of Americans aged 12 or older reported being current drinkers – defined as having at least one drink during the past month. This includes binge drinkers and heavy users.<sup>49</sup> Although the rates are somewhat higher for ages 18 to 25 (61.4 percent) and those aged 26 or older (52.5 percent), the number of citizens who rarely drink, drink very little, or drink not at all is substantial but invisible in public discourse.

### INDUSTRY PREVENTION GOALS

Alcohol industry “prevention” and education programs reflect industry marketing and policy goals:

- Normalize drinking within the social context to exaggerate actual levels of consumption and to make drinking the norm
- Minimize the responsibility of alcohol producers and retailers for the various adverse consequences of drinking in society
- Improve the public image of the producers (as good corporate citizens doing all they can to ensure that their product is used responsibly)
- Emphasize individual voluntary (rather than legislative) solutions to alcohol-related problems (thereby enabling the industry, as much as possible, to operate without control or accountability)

- Imprecisely define those problems only in terms of individual responsibility or irresponsibility (thus not setting limits to how much drinking is responsible – i.e., no limits to sales and consumption while diverting attention and anger away from the product and its producers)
- Exclude corporate roles and accountability (thus, the focus of any legislation passed will be to punish individual transgressors, not the business structure that assisted them in their behaviors, nor to focus on the product that is common to all alcohol-related problems – alcohol, itself)
- Supplant policy and regulatory enforcement strategies with solely education, information and consumer oriented strategies that are easy to do, ineffective and mislead participants to thinking that's all there is so nothing else can be done. When these fail to work, a common community response is “we tried everything, nothing works, nothing changes.” The energy of concerned citizens gets used up with little energy left for the more difficult and contentious strategy of changing policies and how alcohol is sold and marketed.

Industry prevention initiatives are often crafted in direct response to alcohol policy campaigns that threaten its marketing interests. They have fought the environmental approach (legal mandates and control, restrictions of promotion and advertising, increased taxation and enforcement) to alcohol-related problems favored by most health and safety policy advocates.

#### **IMPAIRED DRIVING**

The industry has actively highlighted the problem of impaired driving (focusing on the individual) and has actively participated with a wide array of groups seeking to prevent it. This effort has been genuine, extensive and biased in its favor. Thus, it has also blocked effective measures (e.g., reduced number of outlets and hours of sale; server liability) that might also reduce over all consumption or which look to place responsibilities on anyone other than the individual driver. The industry's recognition that drinking and driving is a major

concern and hazard for all is not a recognition that the product involved is a problem (only how it is used) nor that the causes of the problem can be multiple. It has supported effective laws to reduce underage drinking and driving, to punish drinking drivers and to wage public media campaigns against drinking and driving. Simultaneously, most of the industry has actively resisted or tried to discredit policies to lower the legal permissible alcohol level or that point to server, seller and advertiser contributions to the problem. These efforts have been part of the nation's success in reducing drink/drive fatalities and simultaneously limiting national options for doing so.

This effort has helped draw attention away from the alcohol industry's role in blocking other effective policies and has given the appearance of extensive collaboration which exists only in so far as it supports their over all mission of normalizing drinking and maintaining widespread availability. Through participation in

The National Association of Attorneys General at their March 22-24, 2000, meeting passed a resolution that commended The Robert Wood Johnson Foundation for its funding of an alcohol policy advocacy program (Reducing Underage Drinking through Coalitions), and called upon the Federal Trade Commission to review its 1999 report on alcohol advertising to minors which concluded that the industry was taking steps to prevent underage drinking. Shortly thereafter, Anheuser-Busch invited the Attorneys General to send a letter to the parents in their states at the company's expense and accompanied by company parents' oriented materials and containing company logos. The now former attorney general of Texas mailed such a package.

anti-impaired driving collaborations, it adds its support to policies it favors, while blocking directions other collaborators might want to take but which the industry opposes. Because of this opposition, a consensus cannot be reached and advocates often wind up only working on industry approved steps. Some independent organizations such as Mothers Against Drunk Driving (MADD) set their own directions regardless, but many transportation groups receive federal funding which requires that all players – including the alcohol industry – be allowed to participate.

### EDUCATION FOR INDUSTRY GOALS

The industry produces attractive, expensive “education” materials it widely disseminates free to a public starved for good quality, inexpensive materials. The industry uses drink-in-moderation messages simultaneously for public education, public relations and policy purposes. The messages are disseminated by numerous industry representatives (e.g., DISCUS, the Beer Institute), industry-created social concerns organizations (e.g., ICAP, The Century Council), and industry-funded organizations that promote strategies and messages the industry supports as some social norms campaigns which may argue against policy changes (e.g., in 2000, Anheuser-Busch provided a \$105,000 to open a social norms research center at Northern Illinois University and then contributed nearly \$400,000 to social norms marketing programs on seven university campuses<sup>50</sup>).

**The policy implications of industry messages are consistent:** Environmental and legislative strategies are not the answer (“we have too many”; “they don’t work”; “they punish the vast majority”), and the responsibility for “safe” drinking lies solely with the individual drinker (or, in the case of underage drinking, with the individual’s parent as well) and education of the drinker.<sup>51</sup> Policies which penalize individual consumers for transgressions are supported; those that hold or restrict sellers, advertisers or producers are strenuously opposed. The industry is quick to claim credit for any statistical reductions in alcohol-related harm, and equally quick to oppose measures most scientific studies

indicate result in those reductions (minimum-age drinking laws, not allowing minors’ entry to bars, BAC level reductions, drunk-driving laws, tax increases, etc.). It takes out ads to congratulate parents for working with them to reduce underage drinking but then also blames parents for any remaining underage drinking that continues - while admitting no industry responsibility for such problems. Also absent are discussions or portrayals of problems related to alcohol use – alcohol abuse, alcoholism, overdose, hangover, domestic violence, etc. In effect, the industry blames its customers for problems while excusing its own or its product’s liability.

Vague, catchy slogans such as “think before you drink” and “know when to say when” promote the assumption that drinkers, if properly warned, can best decide for themselves or even know how much is “too much.” These decisions are encouraged among drinkers who, the messages fail to say, have been drinking and thus not able to think clearly. In fact, research on self-assessment indicates that drinkers cannot accurately assess their levels of blood alcohol and impairment.<sup>52</sup> While ostensibly encouraging moderation, industry-sponsored messages carefully avoid any exact definition of moderate drinking, which has been defined by the U. S. Department of Agriculture as no more than two drinks a day for men and no more than one drink a day for women.<sup>53</sup> As only 25 percent of alcohol consumption occurs at or below these levels,<sup>54</sup> the industry’s incentive with regard to the promotion of moderate drinking is not difficult to ascertain. Anheuser-Busch’s \$40 million “Responsible Drinking” campaign, launched in 1999,<sup>55</sup> focused on re-enforcing the responsibility of retailers, designated drivers and parents. But notably absent from the many television, radio and print ads was any mention of exactly when to say “when,” i.e., when to stop buying and drinking. Independent, scientific verification that these programs work is rarely found in the research literature.<sup>56</sup> In fact, they have been little studied and the industry has not produced any evidence that they do work – except that participants like them and use them and that the industry widely distributes them.



Each industry segment produces merchant and server education materials and programs to prevent over-service, service and sales to minors, and to prevent problems related to alcohol in drinking establishments. These have had some positive impacts and improved the industry's public image. But research has also indicated that without legal mandates and enforcement, these voluntary policies have very limited impact.<sup>57</sup> However, mandated server training, sales to youth compliance checks, management of legal accountability for employee behaviors, and strictly enforced licensing laws are vigorously opposed by the industry.

### COUNTER-PREVENTION

To fend off accusations or deter reform initiatives, industry prevention groups rely on misleading and emotionally charged responses. Activists spotlighting the industry's or product's role in facilitating alcohol-related problems, or lawmakers attempting to target alcohol companies with tax increases or other regulatory initiatives are quickly labeled "neo-prohibitionists" or interfering "nannies." These terms evoke an image of extremism and intolerance which has proven effective messaging to state and federal legislators and in opinion polls. Other common industry arguments against controls on alcohol are:

- Price increases or tax hikes target the poor and working class (hence, restricting their ability to purchase a more expensive product);
- Price has no impact on consumption
- Alcoholics and those who abuse alcohol are going to drink "no matter what"
- Restrictions on the industry will result in loss of jobs and unemployment
- Only a small percentage of people drink irresponsibly and therefore alcohol problems are grossly exaggerated
- The industry is already heavily regulated and taxed and, besides, can monitor itself
- Controls mean total prohibition – the denial of the right to drink and feel good.

Industry educational materials are often a direct response to prevention efforts or lobbying that could potentially threaten their marketing practices. Its various anti-drunk driving educational campaigns are a counter to the efforts of Mothers Against Drunk Driving and other organizations to enact various alcohol policy measures to address the issue. When law enforcement began focusing on illegal alcohol sales to minors, the Century Council, a distilled spirits-funded organization, developed the "Cops in Shops" program to shift the responsibility from the retailer to the underage buyer.<sup>58</sup> The industry has supported penalties for underage possession and consumption of alcohol but opposes compliance checks that focus on apprehension of adult sellers and the reduction of sales to minors.

Industry-sponsored college campus programs emerged after several alcohol-related school tragedies led to a reexamination of collegiate environments and efforts to remove alcohol promotions and sales from college campuses. The Century Council, for example, created a publication (*Promising Practices: Campus Alcohol Strategies*, 1996) it sent free to every university president and their boards of trustees highlighting "programs of excellence for America's Colleges and Universities." As is often the case with industry "prevention" materials, there was no evaluation of whether these programs were effective. Discussion of law enforcement centered on punishment of student drinking violations, and there was little indication that there was a wide range of possibilities regarding community alcohol policy research, alcohol policies and university collaboration with their communities on these policies. In fact, a number of the campus programs cited also included extensive policy components that failed to make it into the book. None of the scientific policy research which was easily identified a few years later for the National Institute on Alcohol Abuse and Alcoholism, seemed to have been noticed. According to Peter Cressy, the CEO of Distilled Spirits Council of the United States (DISCUS), whose members fund the Century Council (for which Cressy often appears at major press events),

“DISCUS is working to ensure cultural acceptance of alcohol beverages by “normalizing” them in the minds of consumers as a healthy part of a normal lifestyle.”<sup>59</sup>

Prevention materials and ads, with company and brand names prominently placed, have an added effect of boosting brand and corporate name recognition, particularly among young people, at whom many of the ads are targeted. One evaluation even found that the beer industry’s moderation messages were confusing and often perceived as encouraging alcohol use.<sup>60</sup> At any rate, compared to their product advertising, the level of industry contributions to “responsibility advertising” (i.e., to warn against drinking and driving, encourage use of designated drivers, advise consumers to drink responsibly, inform that the legal drinking age is 21) is miniscule. A 2003 report from the Georgetown University Center on Alcohol Marketing and Youth<sup>61</sup> found that in 2001 the alcohol industry placed 208,909 commercials promoting alcoholic beverages at a cost of \$811,166,404 (95.7 percent of the total) compared to its 2,379 responsibility ads at a cost of \$23,217,943 (2.7 percent of total). Compared to the responsibility ads, the product ads had over 45 times more TV audience (ages 12+) exposure and were seen more by adults than youth (including drinking age ads). Industry-wide, Anheuser-Busch and Coors accounted for 95 percent of the reported responsibility advertising. This report did not include ads paid for by industry associations or industry funded organizations nor alcohol education expenditures outside of television advertising.

Industry sponsorship and contributions to prevention and social causes also help to increase influence among recipients – some of whom may also come to depend on those funds for particular activities.<sup>62</sup> Recipients of such funds are more likely to have a positive image of the donor and are less likely to criticize them or support measures those donors oppose – for fear of having funds cut off. Of course, donations do not usually go to groups that might criticize industry behaviors or highlight the negative impacts of alcohol on society (including treatment programs). But one can also see a more pervasive impact when one looks at some community

funding groups who abstain from funding advocacy programs that might target major funding sources (e.g., alcohol and tobacco companies). Funding recipients may very well receive a warning to discontinue their critiques if they want their funding to continue. In addition to attempt to control an organization that funds, the industry uses the organization it supports to buy credibility. It co-opts the good name of these community/civic groups and connects their good work with the name of the alcohol industry funder. For a further discussion of the impacts of alcohol industry funding on recipients, see *Partner or Foe?: The Alcohol Industry, Youth Alcohol Problems, and Alcohol Policy Solutions* at [www.AlcoholPolicyMD.com](http://www.AlcoholPolicyMD.com).

Another example of the alcohol industry’s questionable commitment to safe drinking is the case of warning labels. In 1988 Congress passed the Alcohol Beverage Labeling Act, requiring alcohol companies to inform the public and alcohol consumers of serious risks related to alcohol consumption. But in a national survey, nearly three out of four drinkers agreed with the statement that warning messages “sometimes appear in the least prominent place on containers, making them difficult to notice and read.” Among drinkers, only 34 percent said they generally noticed the warning label.<sup>63</sup> There has been no industry demand that the labels contain the U.S. Dietary Guideline recommendations limiting consumption to no more than one or two drinks per day. As with other commercial warning labels, these also have the potential of reducing the liability of alcohol producers who can claim that consumers were forewarned.

## **POLICY**

The alcohol industry has ample political muscle and can be a formidable foe. In the late 1980s and early 1990s, the Center for Substance Abuse Prevention (CSAP), a federal agency within the Department of Health and Human Services, was a strong proponent of environmental-based strategies for dealing with alcohol-related problems. It funded numerous community action programs that included such strategies.<sup>64</sup> However, aggressive attacks by the alcohol



## "SHOULD FEDERAL PROGRAMS LINK THE USE OF ILLEGAL DRUGS WITH THE CONSUMPTION OF BEER?"

### National Beer Wholesalers Association Position:

"It is misrepresentative to state that beer is a drug. Beer is deemed legal for persons over 21, consumed safely and responsibly by 85 million Americans, has food value and is the beverage of choice for many adults. Increasingly medical evidence shows the moderate consumption of beer to be beneficial to health, and the American Cancer Society reports that moderate drinkers have a 30-40 percent lower risk of dying of cardiovascular disease. Attempts to link beer with illegal drugs weaken the greatly needed credibility of legitimate and properly targeted programs established to treat alcohol abuse and illegal drug use."

Source: NBWA

Web Site: [www.nba.org/policy/link\\_beer.html](http://www.nba.org/policy/link_beer.html); visited 02/20/2003

The American Cancer Society actually emphasizes the connection between breast cancer risk and moderate alcohol use: "Alcohol Increases Hormone Levels, Raising Breast Cancer Risk" – "Drinking a daily glass of wine may ward off heart problems, but the opposite may be true when it comes to breast cancer. Even small amounts

of alcohol may increase hormone levels circulating in the blood that could raise breast cancer risk..." and "Alcohol Intake Tied to Breast Cancer Risk Even Moderate Drinking Affects Chances" – Despite earlier reports, more recent studies leave little doubt that alcohol intake increases breast cancer risk."

The cancer society goes on to associate alcohol consumption with other cancers. According to *The Complete Guide – Nutrition and Physical Activity*, "If you drink alcoholic beverages, limit consumption. People who drink alcohol should limit their intake to no more than 2 drinks per day for men and 1 drink a day for women... Alcohol is an established cause of cancers of the:

- Mouth
- Pharynx (throat)
- Larynx (voice box)
- Esophagus
- Liver
- Breast

Alcohol may also increase the risk of colon cancer."

Source: [www.cancer.org](http://www.cancer.org)

industry effectively dismantled this portion of CSAP's programs. Reflecting industry pressures to not have alcohol labeled as a drug, the agency's terminology changed from "alcohol and other drugs" to "substance abuse" (which minimized attention to alcohol) and "alcohol and drug abuse" (which implies that alcohol is not a drug). The industry has successfully derailed advertising and tax reform, and has thwarted many local city or county-based initiatives by lobbying on behalf of weaker, less likely to be enforced statewide ordinances.<sup>65</sup>

Increasing excise taxes can be an effective means to reduce underage drinking. This is especially true for beer, the most popular alcoholic beverage consumed by youth.<sup>66</sup> Although in general the industry actively opposes increases in taxes upon its products and services, one sector might not complain when another sector is

threatened with an increase in tax rates. It is more likely, however, that the sectors most heavily taxed (wine and distilled spirits) want rates equalized to the lowest common denominator (i.e., beer). Occasionally one might see active support for a tax increase if the tax will be used to benefit that sector (e.g., to assist product research or promotion).<sup>67</sup>

### INFLUENCING LEGISLATORS

Like most industries, "the alcohol industry pays careful attention to legislative processes and commits considerable resources to making its concerns known to elected and appointed officials in all levels of government. Trade groups such as the Distilled Spirits Council of the United States, the National Beer Wholesalers Association, and the Wine and Spirits Wholesalers of America represent alcohol industry interests to the media, the public and especially the government.



Through its political action committees (PACs), the alcohol industry gave \$2.3 million to Federal candidates during the 1997-1998 campaign cycle.<sup>76</sup>

"If our products are culturally accepted and our legislators and regulators recognize that this is part of a normal, healthy lifestyle, we think we can create an environment where we are not demonized, where we're not subject to stings every other week, where we are recognized as a responsible part of the community." Peter Cressy, CEO, DISCUS<sup>69</sup>

The industry has contributed \$27.3 million to national parties and federal candidates since 1991, including \$13.6 million in soft money between 1995 and 2001. In the 2000 election year alone, over \$7.9 million was donated by alcohol interests and affiliates to various state and local candidates. These donations are firmly bipartisan and effective at promoting the industry's legislative agenda.<sup>70</sup> Thirty out of 34 Senators elected in 1998 - including 15 Republicans and 15 Democrats - accepted contributions from alcohol PACs, totaling more than \$400,000.<sup>71,72</sup> The alcohol industry like other lobbying groups also recruits from among former federal and state elected and administrative officials. For example, former New York Congresswoman Susan Molinari is the Chairman of The Century Council (the liquor industry-funded group that deals with drunk driving and underage drinking). Ron Sarasin, another Congressman, went on to serve as President of the National Beer Wholesalers Association. Former U.S. Federal Trade Commissioner Roscoe B. Starek, III was their Senior Vice President of Government Affairs. John De Luca, former head of the Wine Institute, previously headed the government's NIAAA.

In 2000, Congress finally passed legislation that would require states to lower the minimum blood alcohol level allowed for operating a motor vehicle to .08, but pressure from the alcohol industry was instrumental in blocking the legislation for years, despite overwhelming support from health, medical, insurance, and consumer groups, as well as public opinion polls. In 1999 the alcohol industry successfully blocked legislation in

Congress to earmark a portion of the \$195 million set aside for anti-drug advertisements for ads to prevent underage drinking. "I guess this was a real experience in how powerful outside interests can be, regardless of the merits of the case," concluded Rep. Lucille Roy-bal-Allard, who sponsored the legislation in the House.<sup>73</sup>

The industry also has a number of allies that often collaborate with it at the state and local level. Most of these are groups that typically also profit from the sale of alcohol (depending on what state laws allow): convenience stores, restaurants and taverns, grocers, gas stations, pharmacies, tourism groups, hotels, billboard and advertising groups. Other groups who may have shared interests are business associations (especially regarding taxes), the tobacco industry and groups that sell their products to the alcohol industry. The particular configuration may vary by state and municipality but the industry rarely has to act without allies.

#### **POWERFUL, YET NOT INVINCIBLE**

At the local level, when not preempted from doing so by state laws, one commonly sees ongoing, often successful efforts to curb practices that lead to the violence, injury and property damage related to alcohol use. Communities are far more prone to restrict alcohol advertising (e.g., near schools and churches, on billboards), to uphold health and safety codes, and to generally express concerns about the problems alcohol may pose.<sup>74</sup> While alcohol industry interests are present in every community, municipalities supported by local citizen action groups have a track record of passing more stringent policies than are typically passed at the state level.<sup>75</sup>

However, state legislatures are also the scenes of serious successful efforts to control the harm that alcohol may cause. In 1994, the California State Legislature passed the "Three Strikes and You're Out" law which permits alcohol license revocation if a vendor is caught selling alcohol to minors three times in a three-year period.

## BEER, WINE & LIQUOR DONATIONS FOR THE 2001-2002 ELECTION CYCLE

(These figures do not include additional contributions for local and state elections.)

### TOTAL INDUSTRY DONATIONS TO BOTH PARTIES COMBINED: \$5,465,718

To Democrats (Total for all 30 donors listed - \$2,517,812.)		To Republicans (Total for all 59 donors listed - \$2,947,906)	
10 Largest Donors	Total	10 Largest Donors	Total
Anheuser-Busch Co Inc	\$726,914	Anheuser-Busch Co Inc	\$1,040,902
Stryker, Pat	710,000	National Beer Wholesalers Assn	260,166
E&J Gallo Winery	205,000	Distilled Spirits Council of the US Inc	209,166
Diageo PLC	116,375	Diageo PLC	188,802
Distilled Spirits Council of the US Inc	103,800	Brown-Forman Corp	148,586
Philip Morris Cos Inc	93,000	Phillips Products Co	125,000
Brown-Forman Corp	80,000	Coors Brewing	122,932
National Beer Wholesalers Assn	69,090	Allied Domecq Spirits & Wine USA Inc	119,118
Southern Wine & Spirits	68,352	Wine & Spirits Wholesalers of America	118,480
Bacardi Martini USA Inc	60,000	Silver Eagle Distributors Inc	112,350
Vivendi Universal	60,000		

Source: [www.commoncause.org](http://www.commoncause.org); "Soft Money Laundromat – Soft money donors matching the industry of "Beer, Wine & Liquor" for the 2001-2002 election cycle."

The law also gave community members concerned with underage sales to minors the mechanism to shut down retailers that would not comply with the law. In addition, that same year, the California Supreme Court ruled that minors could be used as decoys to conduct compliance checks on licensees. In 1998, a California state senator from San Diego introduced Senate Bill 1696, which essentially allowed a fourth violation in a three-year period and restricted the Alcohol Beverage Service Department's grant funding for decoy programs. Multiple food and beverage retail associations, big breweries such as Anheuser-Busch and Miller, as well as the Wine Institute, supported the bill.

But after health and safety groups opposing the bill successfully used media advocacy to target the industry and the bill's sponsor, the bill was amended by removing the fourth strike provision and keeping the grant funding for the minor decoy programs.<sup>76</sup>

Although tax increases have been shown to be the single most effective means of lowering the rates of alcohol-related problems - among young people in particular - attempts to increase alcohol taxes have been far less successful than similar efforts to raise taxes on tobacco products. In 1991, for example, the alcohol industry spent an estimated \$30 million

to defeat the relatively benign “nickel a drink” tax in California, and the industry’s diligence has resulted in the derailment of similar measures in other states.<sup>77</sup> The relatively static rate of alcohol taxes has also meant that alcohol prices have increased far less than those of other consumer goods. It is not uncommon for beer to be available at corner stores for less than the price of milk or water. However, when governments find themselves with shrinking revenue bases, the appeal of increasing alcohol excise taxes greatly increases.

Victories can be won when a broad coalition of grassroots community people speak up. In 2002, the State of Alaska equalized the taxes on alcohol products to 10 cents on each, and Puerto Rico raised the alcohol tax on beer, wine and spirits by 30 percent. In 2001-2002 local and state victories were achieved through campus-community activist coalitions seeking to enact

policies to reduce high risk and binge drinking by college students. See A Matter of Degree Advocacy Initiative at [www.AlcoholPolicyMD.com](http://www.AlcoholPolicyMD.com).

Currently, the beer industry, led by the National Beer Wholesalers Association, is urging Congress to lower the federal excise tax on beer, and more than 200 U.S. lawmakers, many of whom receive political contributions from the alcoholic-beverage industry, have indicated their support for the tax cut proposals.<sup>78</sup> Campaigning by the beer industry focuses on the harm done to working-class Americans by the “unfair” and “regressive” beer tax,<sup>79</sup> although a national public opinion poll released by Center for Science in the Public Interest showed that by a 2 to 1 margin, Americans oppose rolling back the federal excise tax on beer.<sup>80</sup> Anheuser-Busch has even devoted an entire website to the cause: [www.rollbackthebeertax.org](http://www.rollbackthebeertax.org).



## CONCLUSION

The alcohol industry is a complex, international industry with great economic and political power and impacts at all levels of society and around the globe. It is powerful but not invincible and not always united. It seeks to keep everyone's focus on what may be desirable and pleasant about the product. But it also knows it has a major source of weakness: alcohol itself and the dangers, risks and great harm to life, health and community well-being that it engenders. Although industry segments may conflict over particular issues and fight for market share, as a whole it seeks to maximize its profits and create a policy and legislative environment favorable to its operations with as few controls as possible. As a whole the industry seeks to build, maintain and expand product and brand loyalty and sales, and to obscure its role as anything other than a good corporate citizen. While marketing and promotion promote consumption and sales through an image of alcohol's connections with all the good things in life (and none of the bad), the goal of the industry is to act to increase profits and sales, to maintain and enlarge its consumer base, and to create an environment (political, economic, cultural) conducive to reaching these goals. It is not interested in reducing its scale, consumption of its product or its abilities to operate as it sees fit. Anyone concerned about the harms related to alcohol consumption needs to keep this in mind.

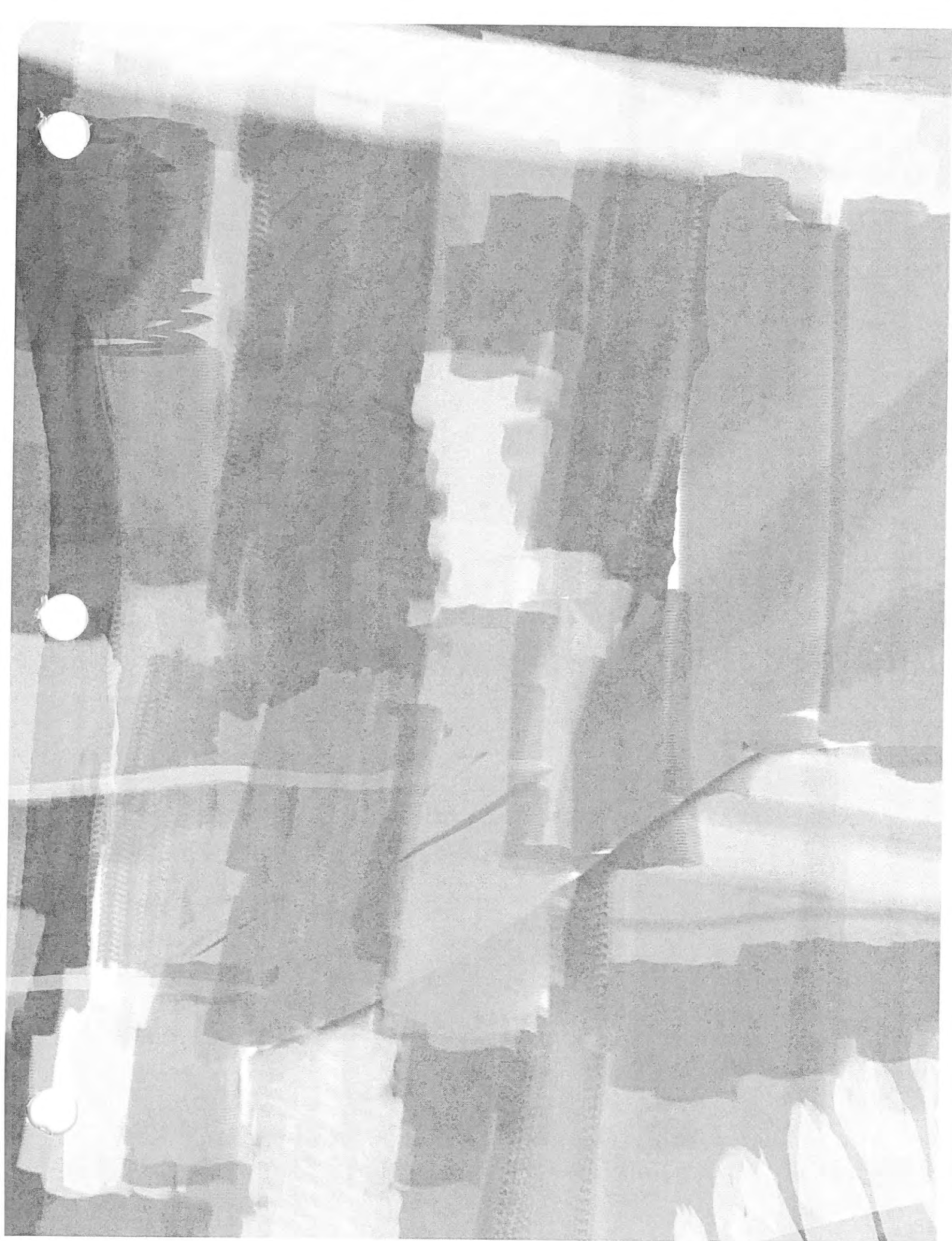
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- <sup>49</sup> 2001 National Household Survey.
- <sup>50</sup> Murray, S, & Gruley, B. "On many campus, big brewers play a role in new alcohol policies." *Wall Street Journal*, November 2, 2000.
- <sup>51</sup> An example of these stances was seen in a May 15, 2001 industry letter attacking a local Tallahassee alcohol control coalition (PAR - Partnership for Alcohol Responsibility) action plan. The letter was signed by the Florida Restaurant Association, Retail Beverage Council of the Florida Retail Federation, Wine and Spirits Distributors of Florida Association, Florida Beer Wholesalers Association (including Tri-Eagle Sales) [Tri-Eagle is the largest state distributor for Anheuser-Busch and is run by a member of the Busch family]. Some statements contained in the letter include: "Problems cannot be legislated out of existence"; "Additional laws aren't needed. We support and encourage enforcement of what's already on the books."; "We strongly favor and have worked to reiterate voluntary responsible advertising and promotion guidelines."
- <sup>52</sup> United States Department of Transportation. Driving Under the Influence: A Report to congress on Alcohol Limits. National Highway Traffic Safety Administration; October, 1992; D1-3.
- <sup>53</sup> United States Department of Agriculture website. <http://www.usda.gov/>
- <sup>54</sup> 2001 National Household Survey. *supra* n. 20.
- <sup>55</sup> "A-B debuts \$40 million responsibility campaign." *Beverage Dynamics*, 110(9):5, November/December, 1999.
- <sup>56</sup> The Committee on Developing a Strategy to Reduce and Prevent Underage Drinking of the Institute of Medicine National Research council indicated that they were "aware of only one industry-sponsored education program that has been independently evaluated - Alcohol 101." They went on to recommend that "industry efforts to prevent and reduce underage drinking, however sincere, should be redirected and strengthened." (National Research Council and Institute of Medicine Reducing Underage Drinking: A Collective Responsibility. Committee on Developing a Strategy to Reduce Underage Drinking, Richard J. Bonnie and Mary Ellen O'Connell, eds. Washington, DC: The National Academies Press. 2003; pp131-132.) TIPS has been independently evaluated as effective in some respects by the NIAAA, whose founder, Morris Chafetz originally designed the program. There have been many evaluations of drink drive policy and reduction campaigns in which the alcohol industry participates.
- <sup>57</sup> Prevention Research Center (Berkeley, CA). Guide to Responsible Alcohol Sales: Off-Premise Clerk, Licensee, and Manager Training. Calverton, MD:



- Pacific Institute for Research and Evaluation, 1999.
- <sup>58</sup> Mosher, J. The merchants, not the customers: Resisting the alcohol and tobacco industries' strategy to blame young people for illegal alcohol and tobacco sales. *Journal of Public Health Policy*, 16:412-429, 1995.
- <sup>59</sup> As reported in the March 2000 Nightclub Magazine, Mitchell Diggs, "Growth Prospects. Cultural Acceptance seen as Key to Boosting Industry Sales." [www.nightclub.com/magazine/March00/growth.html](http://www.nightclub.com/magazine/March00/growth.html)
- <sup>60</sup> DeJong, et al. "A critical analysis of 'moderation' advertising sponsored by the beer industry: Are 'responsible drinking' commercials done responsibly?" in *Milbank Quarterly*, 70:661-679, 1992.
- <sup>61</sup> Center on Alcohol Marketing and Youth. Drops in the Bucket: Alcohol Industry "Responsibility" Advertising on Television in 2001. Georgetown University, Center on Alcohol Marketing and Youth, Washington, DC: 2003.
- <sup>62</sup> Center for Science in the Public Interest. Paying the Piper. The Effect of Industry Funding on Alcohol Prevention Priorities. March 1996.
- "Sell a Case, Save a Kid? Activists Knock Health Charities for Taking Alcohol \$." The Marin Institute for the Prevention of alcohol and Other Drug Problems. Winter 1993.
- Wallack L. "Warning": the alcohol industry is not your friend? *Addiction* 87:1109-1119;1992.
- <sup>63</sup> Center For Science in the Public Interest. "Alcohol warning labels go unnoticed, poll finds." CSPI News Release, August 20, 2001.
- <sup>64</sup> Mosher, J. "Absolute Influence: The structure, wealth, and power of the alcohol industry." Slide Set 5 in The Alcohol Policy Slide Set Series: Resources for Organizing and Advocacy. San Rafael, CA: The Marin Institute for the Prevention of Alcohol and Other Drug Problems, 1997.
- <sup>65</sup> Mosher, J. The Perils of Preemption. Briefing paper. Chicago, IL: American Medical Association, 2001.
- <sup>66</sup> See National Research Council and Institute of Medicine Reducing Underage Drinking: A Collective Responsibility. Committee on Developing a Strategy to Reduce Underage Drinking, Richard J. Bonnie and Mary Ellen O'Connell, eds. Washington, DC: The National Academies Press. 2003; pp242-246.
- <sup>67</sup> For example, in both 1983 and 2002 a 6 cents per gallon increase on wine taxes passed without opposition and with industry support. The tax increase was earmarked for research and promotion of Missouri wine! (for bill language see [Http://www.moga.state.mo.us/statutes/C300-399/3110554.HTM](http://www.moga.state.mo.us/statutes/C300-399/3110554.HTM)). Conversely, the low rates on beer, and the liquor tax rate have not been increased since 1970 and all proceeds go to state General Revenue. At the same time, the state's Division of Liquor control has had its budget reduced by 30 percent in the last few years.
- <sup>68</sup> Drug Strategies. Keeping Score on Alcohol. Washington, DC: DrugStrategies,1999. p. 33.
- <sup>69</sup> As reported in the March 2000 Nightclub Magazine, Mitchell Diggs, "Growth Prospects. Cultural Acceptance seen as Key to Boosting Industry Sales." [www.nightclub.com/magazine/March00/growth.html](http://www.nightclub.com/magazine/March00/growth.html)
- <sup>70</sup> Common Cause. Under the Influence: Congress Backs Down to Big Booze. Follow the Dollar Report. At [www.commoncause.org/publications/booze-exec.htm](http://www.commoncause.org/publications/booze-exec.htm). 1998.
- <sup>71</sup> The National Institute on Money in State Politics website. <http://www.followthemoney.org>
- <sup>72</sup> Common Cause website. <http://www.commoncause.org/>
- <sup>73</sup> Common Cause. "Addiction Industries and Campaign Finance Reform (factsheet)." Washington DC: Common Cause, June, 2001.
- <sup>74</sup> See, for example the following publications produced by the Center for Science in the Public Interest (CSPI) ([www.cspinet.org](http://www.cspinet.org)): McMahon ET, Taylor PA. Citizens' Action Handbook on Alcohol and Tobacco Billboard Advertising; Erenberg DE, Hacker GA. Last Call for High-Risk Bar Promotions that Target College Students.
- <sup>75</sup> See Ch 11, "Communities" in National Research Council and Institute of Medicine, Reducing Underage Drinking: A Collective Responsibility. Committee on Developing a Strategy to Reduce Underage Drinking, Richard J. Bonnie and Mary Ellen O'Connell, eds. Washington, DC: The National Academies Press. 2003; pp. 218-233.
- <sup>76</sup> Ryan, BE, & Mosher, JF The campaign against SB 1696: No 4th strike for California retailers who sell alcohol to minors. San Rafael, CA: The Marin Institute for the Prevention of Alcohol and Other Drug Problems, 2000.
- <sup>77</sup> Alcohol-Related Injury & Violence (ARIV). Taking Initiative: The 1990 Citizens' Movement to Raise California Alcohol Excise Taxes to Save Lives. San Francisco, CA: Trauma Foundation. <http://www.tf.org/tf/alcohol/ariv/case3.html>.
- <sup>78</sup> Hanks, N. Moyses, M. "Safety, consumer group, American public just say no to beer industry's "roll back the beer tax". MADD Press Release, April 16, 2002.
- <sup>79</sup> Beer Institute Online website. [http://www.beerinst.org/pp\\_fedexcisetax.htm](http://www.beerinst.org/pp_fedexcisetax.htm).
- <sup>80</sup> Hanks, N. Moyses, M. supra n. 48.



**Police Standard Conditions**  
**Type 20 and 21 Liquor store, Minimarts, Grocery stores**  
**Off-Sale Alcohol Establishments**

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- 1) Licensee and all sellers or servers shall complete a course in Responsible Beverage Service (RBS) within sixty days of license granting and/or date of employment. Training can be arranged through the Department of Alcoholic Beverage Control.
  - 2) There shall be no advertising of alcoholic beverages visible from the outside of the establishment, including advertising directed to the exterior from within, promoting or indicating the availability of alcoholic beverages.
  - 3) Any signs, advertisements or decorations placed upon the windows shall not exceed 20% of the overall window area. Additionally, there shall be no other obstructions placed near the windows that exceed 20% of the overall viewing area including display racks, stored products, shades or blinds.
  - 4) Upon any individual transfer (person-to-person) of the subject Alcoholic Beverage Control License, or if the business is ever deemed a nuisance as defined by Chico Municipal Code, the Police Department may apply or remove conditions as appropriate to mitigate existing or potential problems.
  - 5) The Licensee agrees to suspend sales of alcohol for the below listed times if there is a single serious violent crime or single significant incident to which multiple police units or multiple police jurisdictions respond associated with the operation of this establishment within the previous revolving 365 day period, which the Chief determines is detrimental to the public safety or health.
    - 7 days for a first incident
    - 15 days for a second incident
    - 30 days for each subsequent incident
- Nothing in this condition shall preclude the Police Department from pursuing a "Disorderly House" accusation with the Department of Alcoholic Beverage Control for multiple incidents described above.
- 6) Any graffiti painted or marked upon the premises or on any adjacent area under the control of the Licensee shall be removed or painted over within twenty-four (24) hours of being applied.
  - 7) The Licensee shall be responsible for maintaining free of litter the area adjacent to the premises over which they have control. This includes the rear of the business.
  - 8) Any rear door of the premises shall be equipped on the inside with an automatic locking device, shall be closed at all times, and shall not be used as a means of access by patrons to and from the licensed premises. Temporary use of these doors for delivery of supplies or disposal of trash does not constitute a violation.

**ATTACHMENT R**



- 9) Employees shall not be allowed to consume alcoholic beverages at any time during their shift or at any time within eight (8) hours prior to the beginning of their shift.
- 10) The parking lot and adjacent areas of the premises shall be equipped with lighting of sufficient power to illuminate and make easily discernable the appearance and conduct of all persons on or about the area. This includes the rear of the business.
- 11) There shall be no pay phones installed inside the premises nor shall there be any pay phones installed outside within 100 feet of the premises.
- 12) Licensee shall regularly police the area under Licensee's control (including the rear of the business) in an effort to prevent the loitering of persons about the premises.
- 13) In the areas surrounding the business the Licensee shall post prominent, permanent signs indicating that loitering, open containers and the consumption of alcoholic beverages is prohibited. This includes the parking lot and other adjacent areas under Licensee's reasonable control.
- 14) Coolers shall be maintained in such a way as to allow for them to be locked during hours of prohibited sale and shall, in fact, be secured during the hours from 11:00 PM to 9:00 AM.
- 15) Coolers or displays containing alcoholic beverages shall be separate from other coolers or displays and shall be positioned so as to allow maximum visibility to cashiers, clerks or employees. Alcohol displays shall not be positioned near customer entry/exit doors, nor shall they be in a location that allows for an easy and unobstructed path to any entry or exit. It is recommended that the alcohol displays or coolers be positioned near the middle of the store where the cashiers or clerks have a clear view from their normal work stations of the activity of persons in the alcohol aisle.
- 16) There shall be no amusement machines or video devices maintained on the premises at any time.
- 17) No single containers, 12 oz., 16 oz., 20 oz., 24 oz., 32 oz., or 40 oz., of beer or malt liquor shall be sold.
- 18) No fortified wine products shall be sold with an alcohol content greater than 14% by volume. This does not exclude Licensee from selling Port, Sherry, Marsala, Madiera, Muscat, Saki and Vermouth fortified products unless otherwise prohibited.
- 19) Prominent signs shall be posted stating, in effect, "No persons under 21 will be served alcoholic beverages" and "Valid ID is required to purchase alcoholic beverages." These signs shall, at a minimum, be posted at each point of sale and near any alcohol display or coolers.
- 20) No open floor displays of alcoholic beverages are allowed, including but not limited to "beer mountains" and portable coolers.

**ATTACHMENT R**

- 21) There shall be no self-service displays of any type of tobacco product including, but not limited to cigarettes, cigars and smokeless tobacco.
- 22) Security cameras shall be installed to monitor the premises and be positioned to monitor at minimum the entry/exit, all points of sale, alcohol coolers and the areas immediately surrounding the exterior of the business. The camera system shall comply with the following minimum standards:
  - a. The cameras shall be color cameras, made by a reputable manufacturer and maintained to current industry standards. They shall have low light capability and be capable of identifying persons conducting transactions at the stores' registers or entering/exiting the business.
  - b. The system shall utilize a Digital Video Recorder (DVR). The use of videocassette recorders (VHS and other formats) is prohibited. The DVR shall allow recording, live viewing and playback of recorded video for a period of least 30 days. DVR shall perform all recording, viewing (local and remote), playback (local and remote), queries and backup functions simultaneously, with no interruption of any other function.
- 23) Licensee shall establish responsible cash handling procedures to reduce the likelihood of robberies and thefts.
- 24) Licensee shall bolt down all cash registers to service counters in order to prevent the entire device from being stolen during a burglary or robbery.
- 25) Licensee shall have drop-safes installed or implement other safe cash handling procedures to allow employees to deposit daily receipts throughout the day as the amounts exceed allowable levels in the register (typically \$50).
- 26) Licensee shall install signage which indicates that employees do not possess keys to safes and that minimal levels of cash are available in register.
- 27) Licensee shall install height gauges at all exit doors.
- 28) Licensee shall install an electronic intrusion detection system that detects portal openings, glass break, and interior motion.
- 29) Licensee shall equip each point of sale with a silent robbery alarm.
- 30) The subject Alcoholic Beverage License shall not be exchanged or upgraded for any other type Alcoholic Beverage License without Police Department or City Council approval.
- 31) A copy of these conditions must be maintained on the premises and made available upon the demand of any peace officer at all times.

**ATTACHMENT R**

**Police Standard Operating Conditions**  
**Type 41 and 47 Restaurant**  
On-sale standard conditions

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- 1) Sales and service of alcoholic beverages shall be permitted only between the hours of 11:00 a.m. to 10:30 p.m. Sunday through Saturday with consumption of alcoholic beverages ending no later than 11:30 p.m. During the special event dates commonly referred to as St. Patrick's Day, Cesar Chavez Day, Labor Day weekend and Halloween, the hours of sales, service or consumption of alcoholic beverages will be restricted to certain hours on certain days of the week as follows:
  - Sales and service of alcoholic beverages shall be permitted only between the hours of 11:00 a.m. and 10:00 p.m. with consumption until 11:00 p.m. on St. Patrick's Day, March 17<sup>th</sup>, of each year.
  - Sales and service of alcoholic beverages shall be permitted only between the hours of 11:00 a.m. and 10:00 p.m. with consumption until 11:00 p.m. on Cesar Chavez Day, March 31<sup>st</sup>, of each year.
  - Sales and service of alcoholic beverages shall be permitted only between the hours of 11:00 a.m. and 10:00 p.m. with consumption until 11:00 p.m. on the Friday and Saturday of CSU, Chico graduation weekend in May of each year.
  - Labor Day weekend (September of each year): Sales and service of alcoholic beverages shall be permitted only between the hours of 11:00 a.m. and 10:00 p.m. with consumption until 11:00 p.m. Thursday through Monday of the Labor Day weekend.
  - Sales and service of alcoholic beverages shall be permitted only between the hours of 11:00 a.m. and 10:00 p.m. with consumption until 11:00 p.m., on Halloween, October 31<sup>st</sup> of each year.
- 2) The quarterly gross sales of alcoholic beverages shall not exceed the gross sales of food during the same period. Licensee shall at all times maintain records which reflect separately the gross sales of food and the gross sales of alcoholic beverages of the licensed business. Said records shall be kept no less frequently than on a quarterly basis and shall be made available to the Police Department or ABC upon demand.
- 3) Sales of alcoholic beverages shall be incidental to the sale of food. It shall not be considered a violation of this condition if customers, who are waiting to be seated for the service of food, are served alcoholic beverages in a staging area. Employees shall make a good faith effort to ensure that all customers being served alcoholic beverages are also on the premises for the purpose of consuming food items.
- 4) Alcoholic beverages shall not be offered at significantly reduced prices that are meant to encourage greater consumption of alcohol such as during "happy hour" type promotions. Licensee shall not develop any other promotional activity that is designed to encourage excessive drinking of alcoholic beverages. Promoting a "happy hour" or other event that offers reduced prices on food or other items shall not be considered a violation of this condition and are actually encouraged.



- 5) There shall be no advertising of alcoholic beverages visible from the outside of the establishment, including advertising directed to the exterior from within, promoting or indicating the availability of alcoholic beverages.
- 6) The sale of alcoholic beverages for consumption off the premises is strictly prohibited, at any time.
- 7) Entertainment shall not be audible beyond the area under the control of the licensee(s).
- 8) There shall be no live entertainment of any type, including but not limited to live music, disc jockey, karaoke, topless entertainment, male or female performers or fashion shows.
- 9) The premises shall be equipped and maintained in good faith as a bona fide restaurant and shall possess, in operative condition, such conveniences for cooking and storage of foods such as stoves, ovens, broilers, refrigeration or other devices, as well as pots, pans or containers which can be used for cooking or heating foods on the type heating device employed.
- 10) The premises shall be maintained as a bona fide restaurant and shall provide a menu containing an assortment of foods normally offered in restaurants.
- 11) The subject alcoholic beverage license shall not be exchanged for a public premises type license nor operated as a public premise.
- 12) Licensee and all sellers or servers shall complete a course in Responsible Beverage Service (RBS) within sixty days of license granting and/or date of employment. Training can be arranged through ABC.
- 13) Licensee, all sellers or servers and all general managers, managers or policy makers shall complete a Licensee Education on Alcohol and Drugs (LEAD) Program (available through ABC) within 12 months of license granting and/or date of employment.
- 14) The premises shall be equipped with an adequate number of seats to accommodate all customers. There shall be no service area that is designed or used as a standing area only or as a combined standing and seating area.
- 15) Alcoholic beverages shall be served in standard sizes that are consistent with the industry and shall not be served by the pitcher, "bucket" or similar high capacity amounts.
- 16) Employees shall not be allowed to consume alcoholic beverages at any time during their shift or at any time within eight (8) hours prior to the beginning of their shift.
- 17) Licensee shall not create any bar, lounge or other area in which the exclusive use would be the service of alcoholic beverages. Food shall be made available in all areas where customers are seated. An area designated for customers who are waiting to be seated at a food service table shall not be considered a violation of this condition as long as the area is not used primarily for the service of alcohol. Condition number 3, above, shall be adhered to regardless of where customers are seated.

## ATTACHMENT R

**Police Standard Operating Conditions**  
**Type 42 and 48 Public Premise**  
On-sale standard conditions

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- 1) Licensee and all sellers or servers shall complete a course in Responsible Beverage Service (RBS) within sixty days of license granting and/or date of employment. Training can be arranged through the Department of Alcoholic Beverage Control.
- 2) Licensee, all sellers or servers and all general managers, managers or policy makers shall complete a course in the Licensee Education on Alcohol and Drugs (L.E.A.D) within 12 months of license granting and/or date of employment (available through the Department of Alcoholic Beverage Control).
- 3) When the Licensee hosts an event that includes live entertainment or amplified music, security guards are required and must be present at least 30-minutes prior to and after the event.
  - Licensee shall provide one guard for 25-50 persons and one guard for each additional 50 people.
  - During such events, there shall be at least one security guard present to monitor the area immediately surrounding the exterior of the premises that is under the reasonable control of the Licensee.
  - Security and other staff must not permit people to loiter outside or otherwise disrupt or annoy any nearby residents or businesses.
  - Security guards are defined as any person licensed by the State of California pursuant to Chapter 11.5 (commencing with section 7580) of Division 3 of the Business and Professions Code, or who is employed by such a licensed person as a security guard, and who wears a uniform with a badge identifying the person as a security guard, and who has no duties in the premises except duties related to security.
- 4) When security personnel are present or required, Licensee shall maintain accurate records of all security personnel on the premise at any given time and make those available to the police upon demand. These records shall, at a minimum, provide the name, date of birth, copies of security guard credentials or license and any other permits or certifications related to security work. This would include copies of permits for weapons or other tools the guard may be authorized to carry. Security personnel shall remain in compliance with updated training related to their work as set forth by any existing or future state and/or local regulations.
- 5) The Licensee agrees to suspend sales of alcohol for the below listed times if there is a single serious violent crime or single significant incident to which multiple police units or multiple police jurisdictions respond associated with the

operation of this establishment within the previous revolving 365 day period, which the Chief determines is detrimental to the public safety or health.

- 7 days for a first incident
- 15 days for a second incident
- 30 days for each subsequent incident

Nothing in this condition shall preclude the Police Department from pursuing a “Disorderly House” accusation with the Department of Alcoholic Beverage Control for multiple incidents described above.

- 6) The use of any amplifying system or device shall not be audible outside the premise nor shall it be disruptive to neighboring businesses or residences.
- 7) There shall be no advertising of alcoholic beverages visible from the outside of the establishment, including advertising directed to the exterior from within, promoting or indicating the availability of alcoholic beverages.
- 8) The sale of alcoholic beverages for consumption off the premises is strictly prohibited.
- 9) Alcoholic beverages shall be served only in mugs, glasses or clear plastic cups. The service of alcoholic beverages in bottles or cans is strictly prohibited.
- 10) Sales of alcohol shall not occur between the hours of 11:00 p.m. and 11:00 a.m.
- 11) Alcoholic beverages shall not be offered at significantly reduced prices that are meant to encourage greater consumption of alcohol such as during “happy hour” type promotions. Licensee shall not develop any other promotional activity that is designed to encourage excessive drinking of alcoholic beverages. Promoting a “happy hour” or other event that offers reduced prices on food or other items shall not be considered a violation of this condition and are actually encouraged.
- 12) Alcoholic beverages shall be served in standard sizes that are consistent with the industry and shall not be served by the pitcher, “bucket” or similar high capacity amounts.
- 13) In the areas surrounding the business, not otherwise licensed by the Department of Alcoholic Beverage Control allowing the service of alcohol, Licensee shall post prominent, permanent signs indicating that loitering, open containers and the consumption of alcoholic beverages is prohibited. This includes the parking lot and other adjacent areas under Licensee’s reasonable control.
- 14) If alcoholic beverages are to be sold and consumed in any patio area, the patio must be properly permitted through the City of Chico Planning Department and licensed by the Department of Alcoholic Beverage Control. The entire patio shall



be adequately enclosed to the satisfaction of the Police Chief. Low or excessively wide spaced fencing will not be considered sufficient.

- 15) Prominent signs shall be posted stating, in effect, "No persons under 21 admitted" and "Valid ID is required to purchase alcoholic beverages".
- 16) Employees shall not be allowed to consume alcoholic beverages at any time during their shift or at any time within eight (8) hours prior to the beginning of their shift.
- 17) The subject Alcoholic Beverage Control License shall not be exchanged for any other type of Alcoholic Beverage Control License without review and approval by the Police Chief or City Council.
- 18) Upon any individual transfer (person-to-person) of the subject Alcoholic Beverage Control License, Police Department may apply or remove conditions as appropriate to mitigate existing or potential problems.
- 19) Any graffiti painted or marked upon the premises or on any adjacent area under the control of Licensee shall be removed or painted over within twenty-four (24) hours of being applied.
- 20) Licensee shall be responsible for maintaining free of litter the area adjacent to the premises over which Licensee has reasonable control.
- 21) The area surrounding premises under the reasonable control of Licensee (including the rear of the business) shall be equipped with lighting of sufficient power to illuminate and make easily discernable the appearance and conduct of all persons in or about the area.
- 22) No pay phone on the exterior of the premises shall be allowed within 50 feet of the front or rear doors and any pay phones installed inside shall be blocked from incoming calls.
- 23) Licensee shall regularly police the area under Licensee's control in an effort to prevent the loitering of persons about the premises. Licensee shall implement strategies to encourage persons to leave the area under Licensee control immediately after closing time.
- 24) Any rear door of the premises shall be equipped on the inside with an automatic locking device and shall be closed at all times, and shall not be used as a means of access by patrons to and from the licensed premises. Temporary use of these doors for delivery of supplies does not constitute a violation.
- 25) Licensee shall acquire and implement the use of an identification scanner, allowing employees to track patrons who are involved in disturbances. Licensee

## ATTACHMENT R

shall provide information to Police Officers upon request during the course and scope of an investigation. Licensee shall provide the involved patron information to other establishments in the city with similar technology.

- 26) Licensee shall establish cash handling procedures to reduce the likelihood of robberies and thefts.
- 27) Licensee shall install a video surveillance system that shall be maintained at a reasonable industry standard and shall, at a minimum, monitor the entrances and exits, any centralized point of sale and areas immediately surrounding the exterior of the business.
- 28) Licensee shall install height gauges at all exit doors.
- 29) Licensee shall install an electronic intrusion detection system that detects portal openings, glass break, and interior motion.
- 30) Licensee shall bolt down all cash registers to service counters in order to prevent the entire device from being stolen during a burglary or robbery.
- 31) If the project property is already occupied or use has already been initiated, Licensee shall comply with all conditions of this permit within 30 days of approval thereof.
- 32) A copy of these conditions must be maintained on the premises and made available upon the demand of any peace officer at all times.

**From:** Deanna Reed <Deanna.Reed@Enloe.org>  
**To:** "ktrostle@ci.chico.ca.us" <ktrostle@ci.chico.ca.us>  
**Date:** 7/22/2013 4:33 PM  
**Subject:** Enloe Medical Center | College Students and Alcohol Related Visits

Hello Kirk -

I finally have some additional data for you related to alcohol-related incidents and college-aged patients. I understand you've already recently received input on overall alcohol-related ER admissions and their related average charges from Marty Marshall (our EMS Director). What I was able to get beyond that from our Patient Financial Services Department shows the actual cost to our organization.

Here is the report criteria we used:

- \* Dates of service within the last fiscal year (July 2012-June 2013)
- \* Patient age between 17 and 24 (this is where we had to pick an age category so we could be missing individuals >24)
- \* Employer is student or unemployed (there could be students that listed a PT employer that we would have missed)
- \* Diagnosis includes: "alcohol intoxication"
- \* Was seen in ER, Ambulance, or was subsequently admitted to IP

Here are some stats:

- \* 1026 accounts were found that required hospital resources in that 12 month period
  - \* Some patients were seen for this reason on more than one date of service
  - \* \$150K in charity care write-off's to date
  - \* \$310K in bad debt write-off's to date
- \*\*I indicated "to date" on these last two items as some of the accounts are too recent to have been qualified for charity care or old enough for bad debt write off though I can see that the likelihood of payment on many is slim\*\*

I hope this is helpful. If you have additional questions or need clarification on any of the points, please let me know. One thing to note is the disclaimer about the cost "to date" on the bottom two statistics.

Have a nice afternoon!

Deanna Reed  
Community Outreach Coordinator | Enloe Medical Center  
p: 530.332.7329 | f: 530.893.6922

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3.1 mil





**From:** Deanna Reed <Deanna.Reed@Enloe.org>  
**To:** 'Kirk Trostle' <KTrostle@ci.chico.ca.us>  
**Date:** 6/20/2013 9:48 AM  
**Subject:** RE: More Alcohol Health Statistics

Good morning!

I spoke with one of my colleagues yesterday afternoon and she shared the information below that may be helpful to you as well. This is data that has been provided to local media outlets when asked about alcohol-related issues and our Emergency Department.

#### **Alcohol Intoxication – General Info**

[anecdotal ED stats verified current: March 1, 2013]

- **On typical Friday or Saturday night**, Enloe's Emergency Room typically sees between three and 10 alcohol-related cases. Most people in these instances are brought by ambulance when friends or family become concerned for their safety.
- We do see alcohol and drug overdose related deaths in the Emergency Room, some intentional, some accidental.
- On average our Emergency Room receives 2 to 4 alcohol overdose patients, ages ranging 17-22, every weekend night while school is in session and on average we have approximately 25 alcohol-related visits on holidays that historically have high levels of alcohol consumption (Cesar Chavez, St. Patrick's Day, Labor Day, Memorial Day, Halloween).
- In 2012, 29 percent of trauma patients (patients for whom we activated the trauma team) tested positive for alcohol. *Note:* This is based on blood alcohol tests. (We do not test all trauma patients' blood-alcohol level, i.e. minors or very clearly not impaired.)

As we compile all of the additional data from our Community Health Needs Assessment, I'll share any other bits of information that might be of use to you on this project. And, of course, if you have questions come up in your research that we may be able to answer, please don't hesitate to ask.

Have a great day!

Deanna Reed

Community Outreach Coordinator | **Enloe Medical Center**

p: 530.332.7329 | f: 530.893.6922





**From:** Kirk Trostle [mailto:KTrostle@ci.chico.ca.us]  
**Sent:** Wednesday, June 19, 2013 4:37 PM  
**To:** Deanna Reed  
**Subject:** Re: More Alcohol Health Statistics

Deanna,  
Thanks for taking time out of your day for me. I appreciated your insight and information. It will aid in supporting positive change to the culture of alcohol abuse in our community. I'm looking forward to working with you on this community issue. Take care,  
Kirk

>>> Deanna Reed <Deanna.Reed@Enloe.org> 6/19/2013 2:41 PM >>>

Hello Chief Trostle –

It was a pleasure meeting you this afternoon.

As promised, I pulled a few of the slides relating to alcohol use in Butte County from our recent focus group presentations and attached it to this message. Here's a brief explanation of what's in the file that may be of use to you.

- **SLIDE 2:** According to County Health Rankings for California, Butte County is ranked 37<sup>th</sup> out of 57 for "Health Behaviors." This includes alcohol-related behaviors.
- **SLIDE 3:** This slide provides comparison data between Butte County, California and (where available) the United States for binge drinking and heavy alcohol consumption. In both cases, we are higher.
- **SLIDE 4:** This slide shows data related to mental health and suicide rates. I'm not sure if this will factor into your research or not, but I left it in just in case.
- **SLIDE 5:** This slide show data for fall deaths, premature death and years of potential life lost. These can encompass many factors – not just alcohol related – but may factor in when combined with data from other sources (like the recent fall death you referred to and/or ER data).

I'll let you know when I track down the ER data we talked about.



Thank you for your efforts on this matter. As a new member of this community, I'm grateful.

Deanna Reed

Community Outreach Coordinator | **Enloe Medical Center**

p: 530.332.7329 | f: 530.893.6922

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# Community Health Survey

**INSTRUCTIONS** | We invite you to participate in the 2013 Butte County Community Health Survey, providing information about your health, health of your family and health issues facing our community. We are conducting this survey together with the Butte County Public Health Department, Biggs-Gridley Memorial Hospital, Enloe Medical Center and Feather River Hospital as part of a joint Community Health Needs Assessment.

The survey will take about 10 to 15 minutes to complete and will help us identify the unique health-related concerns facing residents throughout Butte County. It will also help us develop a series of activities to address the needs identified.

**This is an anonymous survey and we want to assure you that your responses will be kept strictly confidential. If you do not wish to answer a question, or if a question does not apply to you, you may leave your answer blank.**

## SECTION 1: ABOUT YOUR HEALTH AND FAMILY

Check the boxes that best apply for you, your spouse or partner, and/or your child(ren)

### PLEASE DESCRIBE YOUR HEIGHT AND WEIGHT

About how tall are you (without shoes)? \_\_\_\_\_

About how much do you weigh (without shoes)? \_\_\_\_\_

How would you describe the overall health of each member of your family?

- |           |                              |   |                                     |
|-----------|------------------------------|---|-------------------------------------|
| Very good | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |
| Good      | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |
| Fair      | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |
| Poor      | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |
| Not sure  | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |

Are you currently the primary caregiver for an ill or elderly family member?

- Yes  No

Where do you and your family members receive routine health care services?

- |                         |                              |   |                                     |
|-------------------------|------------------------------|---|-------------------------------------|
| Private doctor's office | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |
| Urgent/prompt care      | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |
| Emergency room          | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |
| Free/low-cost clinic    | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |
| School-based clinic     | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |
| Homeless shelter        | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |
| Store-based clinic      | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |
| No routine health care  | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |
| Not sure                | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |

Do you have a Primary Care Physician (PCP)?

- |  |                              |   |                                     |
|--|------------------------------|---|-------------------------------------|
| Yes                                    | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |
| No                                     | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |
| Yes, but I don't see him/her regularly | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |

If you do not see a primary health provider regularly, please tell us why.

- I don't know how to find a good doctor
- I am uncomfortable with doctors
- My doctor has inconvenient hours
- Language, racial, or cultural barriers
- Lack of transportation
- It costs too much money
- Other \_\_\_\_\_

What other kinds of health care professionals do you visit regularly?

- |                                       |                              |   |                                     |
|---------------------------------------|------------------------------|---|-------------------------------------|
| Medical specialist                    | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |
| Dentist                               | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |
| Eye doctor                            | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |
| Mental health professional            | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |
| Home care nurse                       | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |
| Spiritual healer                      | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |
| Alternative healer (ex: Chiropractor) | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |

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Have you ever been told by a doctor or health care professional that a member of your family has any of these conditions, diseases or challenges?

- |   |                              |   |                                     |
|---|------------------------------|---|-------------------------------------|
| Asthma  | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |
| Cancer  | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |
| Diabetes  | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |
| Heart Disease   | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |
| Substance Abuse                                       | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |
| Overweight/Obesity                                    | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |
| Eating Disorder                                       | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |
| Genetic Disorder                                      | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |
| Birth Defect  | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |
| Mental/Emotional Condition<br>(including Depression)  | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |
| Developmental/Learning<br>Concerns (including Autism) | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |

#### FOR WOMEN ONLY:

How long has it been since your last mammogram (*a screening exam for breast cancer*)?

- |   |  |   |
|---|--|---|
| <input type="checkbox"/> Within 1 year  | <input type="checkbox"/> Within 2 years  | <input type="checkbox"/> Within 3 years |
| <input type="checkbox"/> Within 4 years | <input type="checkbox"/> 5 or more years | <input type="checkbox"/> Never          |
| <input type="checkbox"/> Not sure       |  |   |

How long has it been since your last pap smear (*a screening exam for cervical cancer*)?

- |   |  |   |
|---|--|---|
| <input type="checkbox"/> Within 1 year  | <input type="checkbox"/> Within 2 years  | <input type="checkbox"/> Within 3 years |
| <input type="checkbox"/> Within 4 years | <input type="checkbox"/> 5 or more years | <input type="checkbox"/> Never          |
| <input type="checkbox"/> Not sure       |  |   |

Have you ever had a bone density scan (*a screening exam for osteoporosis*)?

- |                              |                             |                                   |
|------------------------------|-----------------------------|-----------------------------------|
| <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Not sure |
|------------------------------|-----------------------------|-----------------------------------|

#### FOR MEN ONLY:

How long has it been since your last rectal exam (*a screening used to examine the prostate*)?

- |   |  |   |
|---|--|---|
| <input type="checkbox"/> Within 1 year  | <input type="checkbox"/> Within 2 years  | <input type="checkbox"/> Within 3 years |
| <input type="checkbox"/> Within 4 years | <input type="checkbox"/> 5 or more years | <input type="checkbox"/> Never          |
| <input type="checkbox"/> Not sure       |  |   |

How long has it been since you had a prostate cancer screening blood test?

<input type="checkbox"/> Within 1 year	<input type="checkbox"/> Within 2 years	<input type="checkbox"/> Within 3 years
<input type="checkbox"/> Within 4 years	<input type="checkbox"/> 5 or more years	<input type="checkbox"/> Never
<input type="checkbox"/> Not sure		

#### FOR MEN AND WOMEN, AGE 50 AND OVER:

How long has it been since your last colonoscopy (*a screening exam for colon cancer*)?

- |  |   |   |
|--|---|---|
| <input type="checkbox"/> Within 1 year   | <input type="checkbox"/> Within 2 years | <input type="checkbox"/> Within 5 years |
| <input type="checkbox"/> Within 10 years | <input type="checkbox"/> Over 10 years  | <input type="checkbox"/> Never          |
| <input type="checkbox"/> Not sure        |   |   |

How long has it been since your last sigmoidoscopy (*a screening exam for colorectal cancer*)?

- |  |   |   |
|--|---|---|
| <input type="checkbox"/> Within 1 year   | <input type="checkbox"/> Within 2 years | <input type="checkbox"/> Within 5 years |
| <input type="checkbox"/> Within 10 years | <input type="checkbox"/> Over 10 years  | <input type="checkbox"/> Never          |
| <input type="checkbox"/> Not sure        |   |   |

#### ABOUT YOUR HEALTH COVERAGE:

Did you have health insurance during all, part or none of the past

- |                       |                              |   |                                     |
|-----------------------|------------------------------|---|-------------------------------------|
| All year              | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |
| Part of the year      | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |
| No insurance all year | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |
| Not sure              | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |

Currently, what is your primary type of health care coverage?

- |                         |                              |   |                                     |
|-------------------------|------------------------------|---|-------------------------------------|
| Employer-sponsored plan | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |
| Private insurance       | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |
| Medicare                | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |
| Medi-cal                | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |
| No health insurance     | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |
| Not sure                | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |

Do you have an advance care plan, living will or health care power of attorney?

- |          |                              |   |                                     |
|----------|------------------------------|---|-------------------------------------|
| Yes      | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |
| No       | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |
| Not sure | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |

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## SECTION 2: ABOUT YOUR LIFESTYLE

Please answer each question based on the past year. Check the boxes that best apply for you, your spouse or partner, and/or your child(ren).

On average, how many servings of fruit do you eat or drink daily?

*NOTE: one serving is 1/2 cup of canned or cooked fruit, 1 medium piece of fruit or 6 ounces of juice*

- |                     |                              |   |                                     |
|---------------------|------------------------------|---|-------------------------------------|
| 3 or more servings  | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |
| 2 servings          | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |
| 1 or fewer servings | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |
| Not sure            | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |

On average, how many servings of vegetables do you eat or drink daily?

*NOTE: one serving is 1/2 cup of cooked or raw vegetable or 6 ounces of juice*

- |                     |                              |   |                                     |
|---------------------|------------------------------|---|-------------------------------------|
| 3 or more servings  | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |
| 2 servings          | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |
| 1 or fewer servings | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |
| Not sure            | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |

On average, how many sugar-sweetened beverages do you drink daily?

*NOTE: include sodas, energy drinks, less than 100% juice drinks, etc.*

- |                     |                              |   |                                     |
|---------------------|------------------------------|---|-------------------------------------|
| 3 or more servings  | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |
| 2 servings          | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |
| 1 or fewer servings | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |
| Not sure            | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |

On average, how many days per week do you get at least 30 minutes of exercise or other physical activity?

*EXAMPLES: walking, running, weight-lifting, team sports or gardening*

- |                   |                              |   |                                     |
|-------------------|------------------------------|---|-------------------------------------|
| 5-7 days          | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |
| 3-4 days          | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |
| 1-2 days          | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |
| Only occasionally | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |

What obstacles prevent you from getting regular exercise?

*(check all that apply)*

- Not enough time in my day
- I don't know how to properly exercise
- I don't know where to go for exercise
- I'm not healthy enough to exercise
- It's hard to stay motivated
- Not sure

How often do you wear a helmet when riding a bicycle, skateboard or scooter?

- |               |                              |   |                                     |
|---------------|------------------------------|---|-------------------------------------|
| Always        | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |
| Nearly always | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |
| Sometimes     | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |
| Seldom        | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |
| Never         | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |
| Not sure      | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |

How often do you wear a seat belt when driving or riding in a car?

- |               |                              |   |                                     |
|---------------|------------------------------|---|-------------------------------------|
| Always        | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |
| Nearly always | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |
| Sometimes     | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |
| Seldom        | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |
| Never         | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |
| Not sure      | <input type="checkbox"/> You | <input type="checkbox"/> Spouse/Partner | <input type="checkbox"/> Child(ren) |

How many days per week do you drink alcoholic beverages?

- |   |                                   |                                   |
|---|-----------------------------------|-----------------------------------|
| <input type="checkbox"/> None           | <input type="checkbox"/> 1-2 days | <input type="checkbox"/> 3-4 days |
| <input type="checkbox"/> 5 or more days | <input type="checkbox"/> Not sure |                                   |

If you do drink, how many drinks might you have at one time?

- |   |                                   |  |
|---|-----------------------------------|--|
| <input type="checkbox"/> 1 drink          | <input type="checkbox"/> 2 drinks | <input type="checkbox"/> 3 drinks              |
| <input type="checkbox"/> 4 or more drinks | <input type="checkbox"/> Not sure | <input type="checkbox"/> I don't drink alcohol |

How often do you smoke cigarettes or use other forms of tobacco?

- |   |                                   |                                   |
|---|-----------------------------------|-----------------------------------|
| <input type="checkbox"/> Never          | <input type="checkbox"/> 1-2 days | <input type="checkbox"/> 3-4 days |
| <input type="checkbox"/> 5 or more days | <input type="checkbox"/> Not sure |                                   |

If you smoke, have you tried to quit?

- |  |   |
|--|---|
| <input type="checkbox"/> Yes, I quit       | <input type="checkbox"/> Yes, I started again |
| <input type="checkbox"/> No, I still smoke | <input type="checkbox"/> I don't smoke        |

How often would you say you feel sad, blue or depressed?

- |                                |                                 |                                    |
|--------------------------------|---------------------------------|------------------------------------|
| <input type="checkbox"/> Never | <input type="checkbox"/> Seldom | <input type="checkbox"/> Sometimes |
| <input type="checkbox"/> Often | <input type="checkbox"/> Always | <input type="checkbox"/> Not sure  |

Have you considered suicide?

- |                              |                             |                                   |
|------------------------------|-----------------------------|-----------------------------------|
| <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Not sure |
|------------------------------|-----------------------------|-----------------------------------|

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**SECTION 2 CONTINUED...** Please answer each question based on the past year.

Has anyone made you feel afraid for your personal safety or physically hurt you?

- Yes                       No                       Not sure

If yes, what relationship is this person (or people) to you?

- Stranger                       Friend                       Spouse  
 Boyfriend/Girlfriend       Ex-spouse                       Separated spouse  
 Acquaintance                       Other

**SECTION 3: ABOUT YOUR COMMUNITY'S HEALTH**

Please select your TOP THREE answers for each of the following:

Most important factors for a "Healthy Community"

- Low crime/safe neighborhoods
- Good schools
- Access to affordable health care
- Lots of parks & recreation opportunities
- Affordable housing
- Good jobs/Healthy economy
- Healthy behaviors and lifestyles
- Clean environment
- Access to affordable fresh/natural foods
- Access to mental health services
- Access to substance abuse programs/support

Greatest needs affecting "Children's Health"

- Access to immunizations
- Access to health care services
- Access to mental health services
- Access to affordable fresh/natural foods
- Affordable healthy lifestyle programs
- Affordable health insurance
- Affordable services for special needs
- Better school-lunch programs
- Better child/day care options
- Access to free health screenings
- Lack of physical activity
- Safe places to play

Most important "Health Problems" facing our community

- Cancer
- Diabetes
- Heart Disease/High Blood Pressure
- Stroke
- Obesity
- Mental Health Issues
- Respiratory/Lung Disease
- Dental Hygiene
- Sexually Transmitted Diseases (STDs)
- Suicide
- Teen pregnancy
- Infectious Diseases (ex: Hepatitis, TB)
- Shortage of Primary Care Doctors

Most challenging "Risky Behaviors" facing our community

- Alcohol abuse
- Drug abuse
- Driving while under the influence
- Tobacco use/secondhand smoke
- Child abuse/neglect
- Lack of exercise
- Poor eating habits
- Dropping out of school
- Not wearing a helmet
- Not wearing a seat belt

**SECTION 4: ABOUT YOU AND WHERE YOU LIVE**

Check the box that best applies.

Where did you learn about this survey?

- At the hospital
- At my church
- At a health fair
- From a friend
- Online
- From my doctor
- At a community meeting
- At a retail store
- At work
- Other \_\_\_\_\_

Which hospital do you normally go to for care?

- Biggs-Gridley Memorial Hospital
- Enloe Medical Center
- Feather River Hospital
- Oroville Hospital
- Other \_\_\_\_\_

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SECTION 4 CONTINUED. Please check the box that best applies

What is your home zip code? \_\_\_\_\_

Your gender:  Female  Male

Your age:  25 or less  26-39  40-54  
 55-64  65 or over

What is your race?

- White  Black, African American  
 Native Hawaiian/Other Pacific Islander  Asian  
 American Indian/Alaska Native  Hispanic/Latino  
 No answer

What is your marital status?

- Single/Never Married  Married  Divorced  
 Unmarried Couple  Separated  Widowed  
 No answer

Do you have children currently living in your household?

- Yes, under 18 years old  Yes, 18 years or older  
 Both of the above  No children living at home

What is the highest level of education you have completed?

- Elementary School  Middle School  
 High School  Some College  
 Associate Degree  Bachelor's Degree  
 Graduate School  Technical/Trade School  
 Union Apprenticeship  Other \_\_\_\_\_

What is your current employment status? (check all that apply)

- Full-time  Part-time  
 Unemployed  Self-Employed  
 Homemaker  Student  
 Retired  No answer

What is your annual household income before taxes?

- Less than \$30,000  \$30,000 to \$60,000  
 \$60,001 to \$90,000  \$90,001 to \$120,000  
 Over \$120,000  Not sure  
 No answer

How would you prefer to access your personal health information?  
(check all that apply)

- Paper Copy  Online  Mobile Device

How would you prefer to receive health information?  
(check all that apply)

- Traditional Mail  Email  Text

IS THERE ANYTHING WE'VE OVERLOOKED?

Feel free to write in additional information you think we should know about the health of our community.

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**Thank you for your time!**

Your anonymous responses will be used by the Butte County hospitals, Butte County Public Health Department and other local organizations to better serve the health needs of our community's resident. Please mail your completed survey in the attached envelope. No postage is required.







**From:** Lori MacPhail  
**To:** Kirk Trostle  
**Date:** 7/10/2013 12:54 PM  
**Subject:** Fwd: FW: ETOH July 12 \_ June 13.xlsx  
**Attachments:** ETOH July 12 \_ June 13.xlsx

Chief,

The attachment is the actual Enloe spreadsheet that shows ER patients for alcohol (ETOH) treatment for the past year jul12-jun13. Marty said the data from the ambulance calls, if it was readily available, would be less accurate because some of their calls are cleared in the field (treated/released). For that reason the ER stats are more accurate and include those brought in by friends as well.

-Lori

>>> Marty Marshall <[Marty.Marshall@Enloe.org](mailto:Marty.Marshall@Enloe.org)> 7/10/2013 10:46 AM >>>

Lori

This data is from the past year. The average charge per patient was \$3000 and the average number of ETOH patients per month was around 70.

Marty Marshall  
Director EMS  
O (530) 332-7455 C (530) 327-8666

[Butte CO ems]

<[http://www.enloe.org/medical\\_services/flightcare\\_program/flightcare\\_membership\\_program.asp](http://www.enloe.org/medical_services/flightcare_program/flightcare_membership_program.asp)>

[cid:177324317@10072013-0A6C]





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From: Karen Burke  
Sent: Wednesday, July 10, 2013 10:39 AM  
To: Marty Marshall  
Subject: ETOH July 12 \_ June 13.xlsx

Hi Marty, I know you didn't ask for the Legal Blood Alcohol data but I included it on this spreadsheet so you can delete it if you need to. Please let me know if there is anything else you need. Thanks, Karen :)

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	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	12 Month Total
LBA	30	27	19	19	27	26	18	26	26	29	25	20	292
ETOH/Ingestion	84	77	103	84	48	58	37	49	55	80	89	81	845





**\*\*\*PRELIMINARY DATA ONLY\*\*\***

From anonymous Community Health Survey distributed throughout Butte County as part of the 2013 Community Health Needs Assessment conducted in collaboration with Enloe Medical Center, Feather River Hospital, Biggs-Gridley Memorial Hospital and Butte County Public Health.

**Have you ever been told by a doctor or health care professional that a member of your family has any of these conditions, diseases or challenges? (out of 1265 responses)**

<b>Substance Abuse</b>	<b>Count</b>	<b>Percent</b>
You	34	3
Spouse/Partner	21	2
Child(ren)	10	0.8
<b>Grand Total</b>	<b>65</b>	

**How many days per week do you drink alcoholic beverages? (out of 1184 responses)**

<b>Number of Days</b>	<b>Count</b>	<b>Percent</b>
1-2 days	332	28
3-4 days	140	12
5 or more days	105	9
None	537	45
Not sure	26	2
<b>Grand Total</b>	<b>1140</b>	

**If you do drink, how many drinks might you have at one time? (out of 1184 responses)**

<b>Number of Drinks</b>	<b>Count</b>	<b>Percent</b>
1 drink	298	25
2 drinks	252	21
3 drinks	84	7
4 or more drinks	39	3
I don't drink	170	14
Not sure	12	1
<b>Grand Total</b>	<b>855</b>	





**Most important “Health Problems” facing our community (out of 1157 responses)**

Number of Drinks	Count	Percent
Obesity	788	68
Diabetes	461	40
Mental Health Issues	420	36
Heart Disease/High Blood Pressure	404	35
Cancer	373	32
Shortage of Primary Care Doctors	280	24
Teen pregnancy	128	11
Respiratory/Lung Disease	111	10
Sexually Transmitted Diseases (STDs)	104	9
Suicide	80	7
Dental Hygiene	79	7
Stroke	70	6
Infectious Diseases (ex: Hepatitis, TB)	67	6

**Most challenging “Risky Behaviors” facing our community (out of 1157 responses)**

Number of Drinks	Count	Percent
Drug abuse	784	68
Alcohol use	691	60
Driving while under the influence	405	35
Poor eating habits	389	34
Lack of exercise	333	29
Child abuse/neglect	309	27
Tobacco use/secondhand smoke	253	22
Dropping out of school	94	8
Not wearing a helmet	57	5
Not wearing a seat belt	51	4

**Age of respondents (out of 1136 responses)**

Age	Count
25 or younger	119
26-39	270
40-54	321
55-64	233
65 or older	156
<b>Grand Total</b>	<b>1099</b>

**Gender of respondents (out of 1136 responses)**

Gender	Count
Female	846
Male	213
<b>Grand Total</b>	<b>1059</b>

