



ISSUE BRIEF

The Massachusetts Health Policy Forum

WILL ALCOHOL BE THE NEXT TOBACCO?

Thursday, November 12, 1998

8:30 to 9:00am -- Breakfast

9:00 to 11:00am -- Presentation & Discussion

Swissotel

1 Avenue Delafayette, Boston

A Discussion Featuring:

Mr. David Mulligan

Former Commissioner of Public Health

Mr. George Hacker

Center for Science in the Public Interest

Mr. Roger Berkowitz, President

Legal Sea Foods, Inc.

Mr. Jeffrey Becker, Vice President, Alcohol Issues

The Beer Institute (*invited*)

Registration: Please call Sue Thomson at 617-338-2726 as soon as possible

NO. 3

Will Alcohol be the Next Tobacco?

Issue Brief prepared by Michael Doonan, Heller School, Brandeis University.

I. Introduction

The success of anti-tobacco initiatives in the past decade has led some to question whether a similar type of strategy might be used to address the public health problems of alcohol. Over the past decade initiatives at the local, state and national level limited the places one can smoke, increased tobacco taxes at the state and national level, and decreased the access of tobacco by minors. Smokers have been banished to corners in restaurants, lounges in airports and further to the alleys and parking lots of public and private buildings. The tobacco industry, which was once thought untouchable, has been branded a public enemy. Corporate executives, who swore under oath that they had no evidence that nicotine was addictive and that their companies did not target children, were refuted by internal industry documents dramatically revealed in a series of congressional investigation and media exposés.

The combination of providing health care to uninsured children with funding from tobacco revenue proved a particularly powerful combination. This strategy advanced state and national initiatives that will help provide health care coverage to millions of uninsured children. State attorneys general continue to mount pressure on the tobacco industry through law suits aimed at recouping billions of dollars in increased public expenditures due to the adverse health effects of tobacco. The justification for broad restrictions and tax increases on tobacco was to reduce demand and to promote and fund public health initiatives. Can and should these strategies and this justification be used to address the social costs of alcohol abuse?

In terms of magnitude of health and social cost, alcohol abuse is in some ways more damaging than tobacco. Alcohol has been regulated since before the founding of the nation. We have experienced a period of prohibition, a voluntary abstention in television advertising for spirits, and continuous state and local regulation. There remain many "dry" towns, cities and

counties throughout the nation. This report examines the public health costs and consequences of alcohol abuse. The focus is on mortality, morbidity, crime, violence, domestic abuse, worker efficiency, and the impact on young adults. It also examines studies demonstrating a benefit from moderate drinking. The costs and benefits will be quantified based on the latest research, including an examination of who pays the costs associated with alcohol abuse. A number of strategies for mitigating the social costs associated with alcohol abuse will be examined. These will include both public and private efforts. This information will enable an examination of the similarities and differences between alcohol and tobacco from political, economic and public health perspectives.

II. The Cost of Alcohol Abuse

An overview of the total economic costs of alcohol abuse and alcoholism will be followed by an examination of the particular consequences in the following categories: mortality and morbidity, accidents and injuries, medical costs, productivity, crime and abuse, domestic violence and youth drinking.

1. Economic Costs

The economic costs of alcohol abuse totaled \$148 billion in 1992. To place the problem of alcohol abuse into perspective, we compare the social consequences of alcohol against drug abuse. The use and consequences of illegal drugs are a well known "crisis" leading to countless legislative initiatives, war like analogies, and the appointment of a national Drug Czar. Comparatively little national attention has been focused on dealing with the cost and consequences of alcohol abuse which -- as the latest data indicates -- imposes far greater social costs. Table 1, "Economic Costs of Alcohol Abuse Compared to Drug Abuse 1992," compares social costs on a number of dimensions and will be referred to throughout this section. The conclusion from these data is that total social cost of alcohol abuse is 1.5 times greater than drug abuse (\$148 billion and \$97.6 billion respectively).

Table 1: Economic Costs of Alcohol Abuse Compared to Drug Abuse, 1992 (Billions of dollars)

Economic Costs	Alcohol	Drugs	Total
Health Medical Expenditures Alcohol and Drug Abuse Services	\$ 5.6	\$4.4	\$10.0
Medical Consequences	\$13.2	\$5.5	\$18.8
Total Health Care Expenditures	\$18.8	\$9.9	\$28.8
Productivity Impacts (Lost Earnings)			
Premature Death	\$31.3	\$14.6	\$45.9
Impaired Productivity	\$67.7	\$14.2	\$82.2
Institutionalized Populations	\$ 1.5	\$ 1.4	\$ 3.0
Incarceration	\$ 5.4	\$17.9	\$23.4
Crime Careers	--	\$19.2	\$19.2
Victims of Crime	\$ 1.0	\$ 2.1	\$ 2.1
Total Productivity Impacts	\$107.0	\$69.4	\$176.4
Other Impacts on Society			
Crime	\$ 6.3	\$18.0	\$24.3
Social Welfare Administration	\$.7	\$.34	\$ 1.0
Motor Vehicle Crashes	\$13.6	--	\$13.6
Fire Destruction	\$ 1.6	--	\$ 1.6
Total Other Impacts on Society	\$22.2	\$18.3	\$40.5
Total	\$148.0	\$97.7	\$245.7

Source: National Institute on Drug Abuse (NIDA) Study prepared by the Lewin Group, The Economic Cost of Alcohol and Drug Abuse in the United States, 1992. March 1998.

Table 2, "Estimated Cost to Society of Alcohol Abuse for 1992" shows the percentage of costs associated with each category. The greatest dollar value costs come from lost productivity, 45.7 percent of the total.

This is followed by the costs associated with premature death (21.2 percent), motor vehicle accident (12.7 percent), and crime (8.6 percent). These costs are examined in detail below.

Table 2: Estimated Cost to Society of Alcohol Abuse for 1992

Source of Cost	Percentage of total cost
Lost Productivity	45.7
Premature Death	21.2
Motor Vehicle Accidents	12.7
Crime	8.6
Other	11.8
	100 Total \$148 billion

Source: NIDA study prepared by The Lewin Group May 13, 1998.

Table 3, "Who Pays the Cost Society of Alcohol Abuse?" shows that the largest proportion of the cost is paid by individuals and their families (45 percent), a large portion is paid by Federal, State and Local government (39 percent), with a smaller but significant share being paid by private insurance (10 percent) and victims of abuse (6 percent). The cost incurred by the user and

their family are measured through lost earnings and household productivity, as well as earnings lost due to incarceration. The costs born by society include those related to: crime and trauma, criminal justice and highway safety costs, public and private health insurance, life insurance, tax payments, pensions, and social welfare insurance (Lewin, 1998, 1-7).

Table 3: Who Pays the Cost Society of Alcohol Abuse?

Who Bears the Cost	Percentage of total costs
Individual Drinker and Family	45
Federal, State and Local Government	39
Private Insurance	10
Victims of Abuse	6
	100

Source: NIDA study prepared by The Lewin Group May 13, 1998.

2. Mortality and Morbidity

In 1992, 107,400 fatalities were related to alcohol (25,500 deaths were related to drugs) (NIDA/Lewin 1998). The leading cause of alcohol related deaths is traffic accidents. National Highway Safety Administration data show 14,225 alcohol-related fatalities in 1993. It is estimated that just over 43 percent of all fatal crashes are the result of alcohol. An accident is considered alcohol related on the judgment of the investigating officer, blood alcohol concentration (BAC), or a citation for driving under the influence (DUI) (Alcohol and Health, June 1997, 11). All traffic fatalities have been generally decreasing including alcohol-related deaths which experienced a 17 year low in 1993 (Alcohol and Health, 11). The cost of motor vehicle crashes in Table 1, \$13.6 billion, does not include \$11.1 billion from premature mortality which was included above. This makes the total cost of alcohol-related motor vehicle crashes to be \$24.7 billion (Lewin 1-4).

3. Accidents and Injuries

A large percentage of non-auto related accidents and injuries are also associated with alcohol abuse. As a result of reports from emergency rooms and coroners reports, it has been determined that between 44 and 47 percent of persons who died from unintentional injuries had elevated blood alcohol levels (Abel and Zeidenberg, 1985; Berkelman et al. 1985; Alcohol and Health,

1997). An estimated 47 to 67 percent of adult drowning and 59 percent of fatal falls are linked with alcohol abuse ("Making the Link: Violence and Crime Alcohol and Other Drugs," 1998). "Alcoholics are nearly 5 times more likely to die in motor vehicle crashes, 16 times more likely to die from falls, and 10 times more likely to become fire or burn victims ("Making the Link: Violence and Crime Alcohol and Other Drugs," 1998)." Approximately one-half of all burn and fire mortalities had elevated blood alcohol levels (Baker et al. 1992: Alcohol and Health, 1997, 254). Alcohol also increases the chance of engaging in risky sexual behavior and increases the instances of interpersonal violence (Alcohol and Health, 1997, 268).

4. Medical Costs

Table 1 shows that the medical consequences associated with alcohol were \$13.2 billion in 1992, more than twice that of drugs (\$5.5 billion). Despite these greater costs, spending for alcohol and drug abuse services including treatment were relatively close (\$5.6 billion and \$4.4 billion respectively). There were approximately 429,000 (1.5 percent) hospital discharge episodes for alcohol related illnesses. Table 4 breaks down the primary diagnoses. The largest is for alcohol dependence syndrome, followed by cirrhosis, alcoholic psychoses and non-dependent abuse of alcohol (Alcohol and Health, 14). There is evidence that these

numbers understate the problem considerably. A record review at a large teaching hospital (Umbricht-Schneiter et. al. 1991; Alcohol and Health, 14) compared diagnostic codes with the results of alcoholism screening tests.

This study found that 7.4 percent of patients had an alcohol related diagnosis, while screening data suggested that more than three times as many, 22.4 percent, had significant alcohol related problems.

Table 4: Alcohol Related Diagnosis from Short Hospital Stays 1993

Diagnosis	Percentage of total
Alcohol Dependence syndrome	61 percent
Cirrhosis	18 percent
Alcoholic psychoses	15 percent
Nondependent abuse of alcohol	6 percent
	100 (429,000, 1.5% all admissions)

Source: Alcohol and Health, Ninth Special Report to the U.S. Congress, June 1997, p. 14.

Liver cirrhosis was the 11th leading cause of mortality in 1992, responsible for 25,407 deaths. Cirrhosis rates began to increase after the repeal of prohibition in 1933, peaking in 1973 at an age adjusted rate of 14.9 per 100,000 and dropping to 8.1 per 100,000 in 1992. Rates have been "consistently twice as high for men as for women (Alcohol and Health, 12)." While part of the decrease can be tracked to moderate reductions in consumption in the 1970s and 1980s, researchers suggest that "changes in treatment may have contributed to the decline (Alcohol and Health, 12)."

5. Productivity

Alcohol led to \$107 billion in lost productivity in 1992 (\$9.4 billion for drugs, Table 1). Most of these costs were due to premature death and impaired productivity. The Department of Labor estimates that alcoholism causes 500 million lost workdays each year (DOL Background Information: Workplace substance abuse). The Lewin report estimated that 24.5 million working age people have a history of alcohol dependence, nearly five times the number who met the definition of drug dependency (4.6 million) (Lewin 1998,1-4). The report also noted that males who started drinking prior to their fifteenth birthday experienced the

most severe impact. Productivity losses were also due to hospitalization, sickness, incarceration, and for the victims of crime.

6. Crime and Abuse

Alcohol related crime was responsible for an estimated \$6.3 billion in costs during 1992. Drug related crime during this period was responsible for \$18.0 billion in costs. There are approximately 2.6 million alcohol-related arrests annually (1.1 million illicit drug violations). 1.4 million arrests were for drunk driving, 704,000 arrests for drunkenness and 480,000 arrests for liquor law violations. These numbers take into account that "drug abuse is estimated to contribute to 25 to 30 percent of income-generating crime," and "alcohol abuse is estimated to have contributed to 25 to 30 percent of violent crime." Table 4 shows the percentage of crimes in which alcohol was a key factor. For the most serious crimes, manslaughter and murder/attempted murder, alcohol was a factor in over half the incidences. In over 40 percent of robberies and burglaries, alcohol was a key factor. Also, 42 percent of inmates convicted of rape report being under the influence of alcohol at the time of the offense. (Making the Link "Violence and Crime and Alcohol and Other Drugs", Spring 1995: See

Table 5: Alcohol as a Key Factor in Particular Crimes

Crime	Percentage in which alcohol is a key factor
Manslaughter	62 percent
Murder/Attempted Murder	54 percent
Robbery	48 percent
Burglaries	44 percent
Rape (convicted jailed inmates)	42 percent
Child Abuse	64 percent (Alcohol or drugs)

Source: Making the Link "Violence and Crime and Alcohol and Other Drugs", Spring 1995.

Also Alcohol Alert, National Institute on Alcohol Abuse and Alcoholism No 38, October 1997 "Alcohol, Violence and Aggression").

7. Domestic Violence

The literature on domestic violence suggests an overwhelming correlation between alcohol abuse and family violence (Ninth Special Report to the U.S. Congress on Alcohol and Health, June 1998). Collins and Messerschmidt (1993) reported that alcohol abuse is a significant risk factor in husband to wife violence. Murdoch et. al. (1990) find that 30 percent of child abuse cases may involve alcohol consumption. Pernane (1991), found in reviewing 450 violent episodes, 44 percent of the assailants and 14 percent of the victims had been drinking. Finally Roberts (1988), studying men who had been charged with battering their partners 60 percent, were under the influence of alcohol (Alcohol and Health 261-262). A number of human and animal studies have shown an increase in predisposition to violence with alcohol consumption. (Pihl and Peterson (1993) reviews this literature, Alcohol and Health, 262) Additional research indicates that women undergoing treatment for alcoholism experienced higher rates of childhood victimization, and childhood physical and sexual abuse.

While the correlation is strong, interpretation must be done with caution. It appears that alcohol abuse may lead to or exacerbate the incidences of violence and/or that violence may lead victims to substance abuse. In

reviewing this literature, NIAAA cites studies indicating that alcohol "weakens brain mechanisms that normally restrain impulsive behavior, including inappropriate aggression (Alcohol Alert No. 38, 1997)." An alternative hypothesis is that people who plan on engaging in violence drink to increase courage or to evade responsibility. In addition, many people who abuse alcohol do not engage in violent behavior. There is also the possibility that in some instances alcohol consumption and violence take place together but are unrelated. The NIAAA report concludes that alcohol may increase the risk of violence in particular individuals under certain conditions.

8. Youth Drinking

Youth drinking and binge drinking begin for many around age 13 and, as indicated in Table 6, increase throughout high school and peak in early adulthood. Table 6 shows a steady increase in drinking from 26 percent of 8th graders to 51 percent of high school seniors. Nationally the use of alcohol by teens has been decreasing from a high in the early 1980s, but the total numbers are still cause for concern (Alcohol and Health, 1997). There are also indications that alcohol use may again be on the upswing. For example, the current use of alcohol by Massachusetts students grade 9 through 12 increased from 49 percent in 1993 to 54 percent in 1996 (Massachusetts Department of Health, "Adolescent Substance Abuse in Massachusetts: trends Among Public School Students, 1984-1996," May, 1997).

Table 6: Youth Drinking for 8th 10th and 12th Grade Students 1996

Grade	Report Drinking within the last Month	Report Binge drinking within past two weeks
8 th	26 percent	16 percent
10 th	40 percent	25 percent
12 th	51 percent	30 percent

Source: NIAAA Alcohol Alert No. 37. National Survey of 8th, 10th and 12th University of Michigan.

In Table 6, Column 3 shows that over half the students who use alcohol reported binge drinking within the last two weeks. Binge drinking is generally defined as 5 or more drinks in one sitting. The number of binge drinkers continues to increase into early adulthood. A survey in 1994 reported that 28 percent of high school students, 41 percent of 21 to 22 year-olds, but only 25 percent of 31 to 32 year-olds binge drink (NIAAA Alcohol Alert No. 37, 1997). Binge drinking on college campuses ranges widely. Some colleges have few, if any, students who binge drink and others have rates as high as 70 percent (Alcohol and Health, 1997, 23). Males tend to binge drink more than females.

The adverse consequences of youth drinking can be severe. Drunk driving fatalities disproportionately affect young drivers. In 1993, people between the ages of 16 and 24 accounted for 28 percent of all passenger deaths, but constituted just 15 percent of all licensed drivers (Alcohol Alert No. 37, 1997). Forty percent of all deaths of 15 to 20 year olds result from motor vehicle accidents and 40 percent of these are alcohol related (National Clearing House for Alcohol and Drug Information, "Impaired Driving, Injury, and Trauma and Alcohol and other Drugs, 1998"). Heavy drinking has been associated with lower educational attainment (Cook and Moore, 1993; Alcohol and Health, 1997). The risk associated with underage drinking in terms of other accidents including drowning and burns, violence and crime are detailed above. Further, adolescent surveys suggest that alcohol use increases the chance of unwanted and unprotected sexual activity. "Forty-four percent of sexually active Massachusetts teenagers said they were more likely to have sexual intercourse if they had been drinking, and 17 percent said they were less likely to use condoms after drinking" (NIAAA No. 37).

III. Benefits of Moderate Drinking

A number of studies have shown a link between alcohol consumption and reductions in the risk for coronary heart disease (Rimm et. al. 1996; Hein et. al. 1996; Ridker et. al. 1994). Colditz et. al (1985) studying Massachusetts seniors, found that moderate alcohol consumption led to reduction in all-cause mortality, particularly coronary heart disease when compared to those who abstain and those who drink more than moderate amounts. Leger et. al. (1979) found health effects in 18 developing nations to be related specifically to wine. Staffer et. al. (1988) found a greater impact for wine, and Klatsky et. al. 1990 and Jackson et. al (1991) found no difference based on beer, wine or liquor. Yano et. al. (1977) found in studying the risk of coronary heart disease among Japanese men living in Hawaii, that moderate consumption of alcohol, in this case primarily beer, led to a decrease risk of the disease.

The research in this area is not unquestioned. Colditz et. al (1985) cited four studies finding a positive relationship between moderate alcohol consumption and four studies showing no association. Shaper et. al. (1988) research questioned the positive health effects of alcohol. They believed that much of the research that found health benefits did not adequately control for previous drinking history. They suggested that lifelong abstainers are too small to be an adequate comparison group, and that people categorized as non-drinkers or light drinkers may have given alcohol up because of health reasons. Also, the research attributing positive health outcomes primarily to wine may indicate that effects may not come specifically from alcohol. However, a variety of studies indicate positive effects regardless of beverage type adding weight to the con-

clusion that the positive effect is the alcohol itself. Several researchers finding this positive correlation also caution that their conclusions "must be balanced against the known consequences of heavy alcohol consumption: fatal traffic accidents, cirrhosis of the liver and alcoholism (Colditz et. al. 1985)."

IV. Efforts to Reduce the Adverse Effects of Alcohol

A number of initiatives have been proposed and in some cases implemented to address the social and economic consequences of alcohol abuse. Four types of strategies are used frequently: stronger laws and enforcement actions, increased alcohol excise taxes, advertising and marketing restrictions, and community and educational interventions.

1. Stronger Laws and Enforcement

One way to reduce the costs of alcohol abuse is to increase the costs and consequences of certain behaviors such as: drunk driving, making alcohol available to minors, possession of alcohol by minors, or serving "too much" alcohol to patrons. For example, lower legal blood alcohol levels, easier license revocations, and increased liability for alcohol servers, all have documented success in reducing drunk driving fatalities. "The National Highway and Systems Act provides incentives for states to adopt 'zero tolerance laws' that set maximum blood alcohol concentration (BAC) limits for drivers under 21 to 0.02 percent or lower beginning October 1, 1998 (NIAAA No. 34, 1996)." Results from the research on the first 12 states to enact this policy found a 20 percent reduction in the number of fatal crashes for young adults in this age category (Hingson et al., 1993).

Second, a number of states, including Massachusetts, have reduced allowable blood alcohol levels from

0.10 to 0.08. One state reported an 18 percent decline in the proportion of fatal crashes in which blood alcohol levels were 0.15 or higher compared to a comparison state (NIAAA No. 34, 1996). Third, 38 states have permitted the withdrawal of driving privileges without court actions. Research studies have shown a decrease of between 5 and 9 percent in nighttime fatal crashes (NIAAA No. 34, 1996).

Finally, preliminary investigation has shown that when servers were held accountable for drunk driving fatalities caused by their customers, the rate of alcohol-related fatalities decreased. The available data show that after the filing of two high profile cases in Texas, alcohol-related fatalities decreased after the first case by 6.5 percent and after the second by an additional 5.3 percent (NIAAA No. 34, 1996).

2. Alcohol Taxes

Table 7, "Pros and Cons of Raising the Alcohol Excise Taxes," serves as a framework for this section. As background, a host of economic studies, although varying on the exact amount, conclude that alcohol is somewhat price elastic, which means that if the price is increased, the amount people will drink will go down (Kenkel and Manning 1996; Edwards et al. 1995). Second, alcohol taxes have not kept pace with inflation and alcohol prices compared to other products in the market has been going down. Cook and Moore (1993) point out that there were no significant increases in alcohol excise taxes between 1951 and 1990, the effect of which was an 80 percent loss in value due to inflation. The 1991 federal tax brought the federal liquor tax back to its 1989 value, beer to its 1978 value and wine back to its 1951 value. State excise taxes have also decreased in real value. The price of alcohol has declined substantially, relative to other goods and services, dropping 28 percent on the CPI index between 1967 and 1982, then remaining relatively constant (Cook and Moore 1993, 560).

Table 7: Pros and Cons of Raising Alcohol Excise Taxes

Pros	Cons
Reduce overall consumption including heavy users.	Disproportionately effects lower income individuals.
Greater effect on reducing youth consumption in frequency and quantity of drinks per episode.	Disincentives are not required and interfere with individual free choice. Most people drink responsibly.
Generates greater tax revenue that could be used for public health initiatives including substance abuse treatment.	May be an unstable source of revenue as consumption is reduced.
Makes price more in line with social costs.	Youths may substitute other drugs.
The 6.5 percent of people who consume half of the alcohol will bear the brunt of the tax (Cook and Moore 1994).	Limits the positive health effects of moderate drinking.
Working in conjuncture with programs, higher prices result in lower social costs.	Encourages a black market to develop.

A. Proponents

The primary reasons for supporting an alcohol excise tax are laid out in Table 7, Column 1. Proponents believe that a decrease in consumption will lower the social costs, motor vehicle deaths, the productivity losses, violence, crime, etc. They hold that harmful youth consumption will be particularly reduced. Proponents of increased excise taxes also believe that the revenue generated from such a tax could be used for such things as public education, health expenditures and substance abuse treatment. They believe increasing the excise tax will bring the price more in line with social costs, that the tax will disproportionately impact those who drink the most, and that this strategy in conjuncture with other programs will mitigate the social cost of alcohol abuse.

Much of the economic research has focused on developing a tax/cost system in which the external costs of substance abuse are included in the cost of alcohol. The goal is also to develop cost structures in which the disincentive to drink is greater for those who cause the most damage. Manning et. al. (1989) concluded that the tax on alcohol only covered about half the tax it imposed on others. Manning (1991) calculated that the external social costs per ounce of ethanol was about 48 cents, Miller and Blincoe (1994) estimated that the rest of society collectively pays 63 cents per drink for "crash" costs alone. Chaloupka et. al. (1993) predicted that doubling the federal excise tax on beer at its 1990

level would save 1,744 lives per year including 611 youths age 18 to 20 (Cook and Moore, 566).

Kenkel (1996) estimates that the optimal tax on alcohol, that which would take into consideration social costs, would double the pretax cost of alcoholic beverages. For example, if the price of a 6 pack of beer costs \$3.50 without the tax, the optimal tax would be \$3.50 raising the price to \$7.00. Forty-two percent of the cost of this optimal tax comes from the cost of drunk driving which the author suggests may be addressed in other ways. Further, Kenkel holds that if consumers were made more aware of the problems of illnesses associated with heavy abuse, heavy drinking would fall by 18 percent for males and 15 percent for females (Kenkel 1996).

Research also adds weight to the argument that youth are particularly price sensitive. Coate and Grossman (1988) demonstrate that "the frequency of beer consumption, the most popular alcoholic beverage among youth, is inversely related to the real price of beer and to the minimum legal age for its purchase and consumption." This research found that increasing the cost of alcohol reduced consumption by youth. In particular, reduction was greater for those who drank more often and those who drank larger quantities at one time. They conclude that increasing the beer tax to its 1951 level would reduce the number of youth who drink beer frequently by 32 percent and those who drink fairly frequently by 28 percent (Coate and Grossman, 1988). Cook and Moore had similar findings concluding that a

higher beer tax leads to lower drinking rates and a reduction in consumption by those who do drink (Cook and Moore 565).

B. Opponents

The primary objections to an alcohol excise tax increase are listed in Table 7, Column 2. First, opponents of this tax argue that it is regressive, disproportionately impacting lower income people. Second, they consider it paternalistic. In other words, the government dictates what is good or bad for individuals. This is considered particularly unfair when the majority of drinkers are responsible. Third, alcohol revenue is considered unstable if it leads to decline in consumption. Finally, the possibilities are raised that children and young adults may substitute other drugs if alcohol is further out of reach; this policy may lessen the positive effects of health moderate drinking; and if taxes are too high, a black market might develop.

Reiter (1994) argues that "sin taxes" on alcohol and tobacco are regressive, inefficient and take away a measure of individual autonomy and liberty. The history of these taxes has been an interplay between the need to raise revenue and paternalism. He states that if the taxes are meant for revenue, they are not a consistent source if they are successful in reducing consumption. If they are meant to discourage use, "sin taxes would operate in effect as a prohibition which could easily be escaped for a fee (Reiter, 463)." In other words, the tax would be regressive and impact the poor disproportionately in terms of percent of income and also liberty or choice of lifestyle.

Leigh and Hunter (1992) refute the regressiveness argument claiming that increased beer taxes would result in fewer highway fatalities and deaths from heart disease and cirrhosis disproportionately affecting the poor, blacks, and youths; and if the tax burden were calculated over a lifetime, it would cease to be regressive. Manning et. al. address the regressive question by noting that alcohol and tobacco taxes taken together only account for 1 percent of federal revenues. As a result "a small change in the individual income tax structure could readily compensate for the effect of excise taxes on the distribution of income...(Manning et. al 1989, p.1609)." They also argue that people who drink below the average amount, 1.7 drinks per day, would be better off having revenue come from the excise as opposed to the income tax, and three quarters of drinkers are below the average.

C. Massachusetts Alcohol Taxes

Table 8, "Massachusetts' Alcohol Excise Rates, Ranking and Devaluation, 1998," provides some preliminary comparisons of Massachusetts to the nation. Massachusetts has one of the lowest excise taxes on beer in the country at \$0.11 per gallon. It ranks in the middle for wine, \$0.55 per gallon, and among the highest for spirits, \$4.05 per gallon. Massachusetts last raised alcohol excise rates in 1979 and since then the value of the tax has declined by an average of 49.3 percent due to inflation. In comparison with the region, Massachusetts' beer excise rate is lower than all but Rhode Island's. Its wine excise tax rate is lower than all but New York's. Further, of the four states in the region with direct excise taxes on spirits, Massachusetts is lower than all but Rhode Island (Federation of Tax Administrators, 1989).

Table 8: Massachusetts' Alcohol Excise Rates, Ranking, and Devaluation 1998

Type	Rate	National Ranking**	Rate if tax kept up with inflation since 1979
Beer	\$0.11 per gallon 5 percent sales on premise	39th highest in the country	\$0.22 per gallon
Wine*	\$0.55 per gallon 5 percent sales on premise	27th highest in the country	\$1.08 per gallon
Spirits	\$4.05 per gallon 5 percent sales on premise	10th highest in the country	\$7.99 per gallon

*This is for wine with 3 to 6 percent alcohol, taxes are higher for fortified wine and sparkling wines.

** National ranking data was compiled by the Federation of Tax Administrators

3. Advertising Controls

In this section three options for addressing the advertising and promotion of alcoholic beverages are briefly considered. The first option is to continue voluntary industry advertising guidelines and public service announcements promoting responsible drinking. The second is to reduce or eliminate the tax exclusion of advertising, and/or require more specific warnings to accompany advertising. The third is stronger, more formal advertising bans and restrictions.

The alcohol industry claims that its advertising is only geared toward expanding market share and not to encourage substance abuse or teen drinking. The Beer Institute publishes voluntary advertising and marketing guidelines, suggesting that ads portray legal and safe activities not directed at minors. The industry holds that no scientific evidence exists proving that advertising increases consumption. They point to reductions in the rate of teenage drunk driving and under age drinking between 1982 and 1994, during a period of increased advertising, to bolster their argument (Fact Sheet from Beer Institute, "Advertising and Alcohol Abuse," 1997). Distilled spirits have, until recently, maintained a voluntary ban on radio and television advertising. However, due to decreasing profits and lost market share to beer and wine, distillers have started advertising on television. The industry also sponsors public service campaigns aimed at responsible drinking. These include campaigns such as "Know When to Say When," "Think When You Drink," and "Drink Smart or Don't Start."

Advertising opponents claim that advertisements such as the Budweizer frogs and lizards are attractive to children. They add that children make up the highest consumers of television and are directly influenced by these ads. In a pilot study (Leiber, 1996), 9 to 11 year old children were asked to identify slogans based on television images. Seventy-three percent of the children could identify the Budweizer frogs and mimic the slogan "Bud-Weiz-Er." This was bettered only by Bugs Bunny's "What's up Doc," but fared much better than Tony the Tiger (57 percent) and Power Ranger (39 percent) (Lieber, 1996). Saffer contradicts research that shows no link between alcohol advertising and consumption patterns. He concludes that "disallowing the tax deductibility of alcohol advertising would cut back advertising that increases alcohol abuse by about 15 percent, reduces motor vehicle fatalities by 1,300 a year and raises about \$300 million annually in new tax revenue... (Abramson, 1996)."

Others support stronger measures restricting advertising. Representative Joseph Kennedy (D-MA) introduced legislation restricting advertising hours, banning advertisements in publications with youth readership of 15 percent or more, eliminating the tax exclusion of advertising costs, requiring health warnings on all ads, and preventing the free distribution of alcohol or promotional material on college campuses (Globe, March 1996, 15). Further, more than 30 cities have banned, or considering banning, alcohol outdoor advertising (Marin Institute, Winter 1997).

4. Community and Educational Interventions

Research from a number of communities across the country demonstrates that coordinated community and educational efforts can successfully save lives. More short term education programs aimed at children may have less of an impact on alcohol consumption. For example, the "Saving Lives Program" in six Massachusetts communities involved media, business, schools and colleges, citizens' advocacy groups and police in an alcohol awareness and safe driving campaign. Among others, activities included high school peer-led education, college prevention programs, and increased liquor-outlet surveillance. The result of the Massachusetts' program was a 25 percent decrease in alcohol related fatal crashes when compared to non-participating communities in the state (NIAAA No. 34, 1996). In contrast, the Drug Abuse Resistance Education (DARE), taught to students in 5th and 6th grade by police officers, had no significant impact on alcohol use (NIAAA No. 34, 1996).

5. Treatment Services

The cost of specialized services for alcohol treatment in 1992 was \$5.6 billion dollars. This includes funding for rehabilitation services and detoxification, in addition to prevention, training and research (Lewin, 1998). Approximately 7 percent of the adult population, 14 million people, meet the diagnostic criteria for alcohol abuse and/or alcoholism (Improving the Delivery and Treatment of Alcohol and Treatment and Prevention Services, 1998). Of this population, it is estimated that only 1 in 10 people who need treatment for alcohol related problems receive care (Grant et. al, 1994: Improving, 1998, 10).

The use of pharmacotherapy is increasingly and successfully being used to treat the symptoms of with-

drawal. Several drugs are also being used as alcohol-sensitizing agents and anti-cravings agents. Research on these drugs is still being conducted, but show preliminary success in treating moderate drinkers (Alcohol and Health 1997, 348). Social based therapy such as Alcoholics Anonymous and family intervention are more helpful for people with high social investment and supportive social networks. Readiness for change is a strong predictor of success. Generally, increasing evidence suggests that people suffering from alcohol abuse and/or alcoholism can be successfully treated reducing many of the personal and social cost highlighted above (Sobell et al. 1993; Tucker et al. 1994: Alcohol and Health, 1997).

V. Alcohol and Tobacco

Table 9, "Comparison of Alcohol and Tobacco on Select Criteria," compares alcohol and tobacco on a number of variables. This demographic, social and political comparison is designed to address whether alcohol may be the next tobacco. More particularly, will educational efforts, increased excise taxes and advertising regulation of alcohol follow the path of tobacco? It is argued that the tobacco campaign was influenced by a number of factors including: a declining number of smokers, increasing health awareness, the perception of internal and external costs of tobacco to smokers and non-smokers, the changing public perception of people who smoke, and the political strength and strategies of the industry and the anti-tobacco groups. Comparing each of these areas to alcohol should provide some indication as to the likelihood that alcohol will follow a similar path.

1. Social Costs Comparisons and Public Perception of Smokers and Drinkers

The number of people who use tobacco has declined steadily, although the rate of decline has slowed since 1990. Currently, 25 percent of the population smokes. In contrast, 70 percent of people drink, 19 percent are heavy users, 14 million suffer from alcohol abuse or dependence (Massing, 1998). In total, 6.5 percent of people consume 50 percent of alcohol (Gerbner, 1995). Twenty percent of 12-17 year olds smoke, setting a pattern for long term adverse consequences. Drinking increases from 26 percent in 13 year olds to 51 percent in 17 year olds. Youth drinking has potentially serious short and long term consequences. Tobacco

kills more people per year than alcohol (400,000 vs. 110,000). However, while tobacco victims are generally older, a far larger number of alcohol deaths are in the prime of their life (Massing, 1998). Total health care costs are higher for tobacco (\$50 billion vs. \$19 billion).

The internal and external consequences of these activities vary considerably. Nicotine is addictive for the majority of users, and produces negative effects if used in the way it is intended. Alcohol is addictive and harmful to a minority of users. Further, there is evidence that moderate drinking may have health benefits. These internal effects lead to very different external effects and perceptions of the drug and the user. It should be noted that both drugs have adverse consequences for developing fetuses and newborn children. External costs of smoking include passive smoke. Smoking is increasingly considered a nuisance by non-smokers. The external costs of drinking, detailed earlier in the paper, are extensive ranging from the death of innocent people in auto accidents to lost productivity. Excessive drinking can also have a nuisance effect on non-drinkers.

The success of the anti-tobacco campaign is due in part to the changing perception of smokers, particularly among elites (Capitman, Nicols, Sciegaj, 1998). The fact that some youths are attracted to smoking by its "renegade" image, may add weight to the notion that it is moving out of the mainstream. Adult smokers are increasingly looked down upon by non-smokers. The number of places to smoke is being reduced, and a growing number of people refuse to let people smoke in their homes. In contrast, in many circumstances, non-drinkers are viewed with suspicion. Alcohol is the central focus in celebrations and religious ceremonies. It is the accepted way to ring in the New Year, entertain on Valentines day, or celebrate Halloween with friends. With alcohol it might be the "drunk" or the "bum" who is stigmatized, but not the drink or the alcohol manufacturers. With tobacco the image of the product, the user and the producer have all been diminished.

2. Political Strength of Tobacco and Alcohol Organizations

Partly because of these perceptions, the political strength of the once powerful tobacco lobby while not eliminated has diminished on both sides of the political aisle. In his 1995 State of the Union Address, President Clinton attacked the industry directly. Senator John McCain (R-AZ), the Republican Chair of the Com-

Table 9: Comparison of Tobacco and Alcohol on Select Criteria

Area of Comparison	Tobacco	Alcohol
Numbers of people	43 percent of pop. in 1974* 25 percent of pop. in 1995* (Strong decreasing trend which has begun to level off)	Approx. 70 percent the population drink 19 percent heavy users 14 million are alcohol abuse or alcohol dependent 6.5 percent consume 50 percent
Deaths	400,000 (Lung cancer heart disease, generally later in life)	110,000 (cirrhosis of the liver, traffic and other accidents, many in the prime of life)
Youth	3000 new child smokes/day 20 percent of 12-17 year olds* Sets pattern for long term consequences	26 percent of 13 year olds drink 51 percent of 17 year olds drink Potentially serious short and long term consequences
Health Care Costs	\$50 billion	\$19 billion
Internal Consequences	Nicotine is addictive for the majority of users. In all cases smoking produces some harmful effect (although the effect could be mitigated by abstinence).	Alcohol is addictive and harmful to a minority of drinkers. Moderate drinking may have beneficial health effects.
External consequences	Adverse effect on fetus Passive smoke Nuisance	Fetal Alcohol syndrome Associated or causal connect w/: Accidents Crime Domestic Abuse/neglect Rape Risky Sexual behavior Lost Productivity Nuisance
Perception of user	Some youths are attracted to the image of "renegade" Adults: smokers increasingly viewed negatively. Smoking looked down upon more than in the past. Substance is the problem, all who use it are viewed as tainted by a growing number of a subset who don't. **	In some circumstances non-drinkers are viewed with suspicion. Alcohol is not tainted, the person who abuses alcohol is.
Political Strength	Once strong, significantly weaker. Politically marked by President and key members in Congress in both parties. Regional production	Strong and growing. Production is widespread throughout the country. Manufactures strong and diversified geographically, Distributors as strong and even more diversified.
Advocacy Groups who might organize advertising limits or tax increases	American Cancer Society as well as Heart and Lung groups powerful and organized at the national, state and local levels. Well funded and influential **	MADD, Mothers Against Drunk Driving, organized nationwide, single issue concern, and not as professionally staffed as tobacco opponents. Another large group, Alcoholics Anonymous, and associated family support groups are decentralized and widespread, but have internally focused mission.

Sources: * Health United States, 1989 with Socioeconomic Status and Health Chartbook. Alcohol data taken from sections throughout the paper. ** Capitman, Nichols, Sciegaj, 1989 Report

merce Committee, introduced strong anti-tobacco legislation in the United States Senate. The influence of tobacco is also diminished because it is regionally grown and manufactured. Once tobacco was protected by older, largely Democratic southern congressmen who held key committee chairs, but their power has diminished overtime. In contrast, the alcohol lobby is strong and growing (Massing, 1998). Production is widespread throughout the country. The alcohol industry also has an extensive network of wholesalers, distributors, and retailers, who make up a powerful grass roots constituency. The industry is well represented by the Distilled Spirits Council of the United States, the Beer Institute, the National Beer Wholesalers Association, the Wine Institute, and by such groups as the National Restaurant Association (Massing, 1998).

The anti-tobacco campaign was organized in states by groups such as the American Cancer Society and the Heart and Lung Associations, both powerful and respected groups organized at the local, state and national level. These organizations have professional full time staffs whose efforts could be directed at education and organization (Capitman, 1998). In contrast, proponents of similar efforts for alcohol do not have the ability to tap into these types of organizations. Mothers Against Drunk Driving is perhaps the best organized, but they are concerned primarily with one issue, and do not have the infrastructure of the anti-tobacco groups. Another large group, Alcoholic Anonymous, and associated family support groups, are decentralized and widespread. They also know first hand about the consequences of alcoholism. However, they are internally focused, and a tobacco type campaign would not fit with their primary mission. California's effort to increase alcohol excise tax may best illustrate the relative power of industry.

3. California's Effort to Raise the Alcohol Excise Tax

Inspired by success of the 25-cent per pack cigarette excise tax ballot initiative in 1988, a consortium of public health and safety advocates in California proposed a "Nickel a Drink" ballot initiative to raise the excise tax on alcohol in 1990. The money raised from the tax would have been earmarked to provide funding for health and public safety initiatives. The coalition was a diverse group including: emergency room physicians, the California Mental Health Association, alcohol-treatment providers, and children's advocates. Initial polling indicated strong support for the measure.

Proponents raised \$1.2 million dollars, three-quarters of which was spent on the signature drive. Their strategy was to focus on the public health gains of the proposal including the number of lives saved, benefits for children, and resources for tougher drunk driving laws (Advocacy Institute, 1992).

In contrast, opponents had \$30 million dollars available to defeat the initiative. Opponents' strategy was to muddy the waters by proposing two alternative ballot measures, and to focus on the negative consequences of a new "tax." One alternative ballot initiative called for a penny a drink increase, and another would have invalidated the "Nickel a Drink" initiative. Because of the earmarked funding battles, the California Teachers Association ended up opposing the main initiative and giving credibility to the opposition. In the end, the initiative was soundly defeated 69 percent to 31 percent (Advocacy Institute, 1992).

4. Conclusions

This analysis shows that the nature of the products are very different, although the social costs of each are very high. The use of both these products begin with children, although in both cases it is illegal. The external costs of alcohol are greater than those of tobacco, but awareness of these costs may not be as direct or obvious as the smoker at the next table. There are major differences in the perception of the products and the users. For tobacco, this changed over time, due to increasing health information and a decreasing number of people smoking. It may have also been due to a ban on the advertising of tobacco on television and radio, primary mediums for attracting children. Decreasing political influence of tobacco and increasingly organized public health efforts fueled the success and turned the tide against tobacco.

Proponents of a tobacco type strategy for alcohol face a much more difficult task. They face greater social, economic and political pressure. Demographically, there are more people who drink, and it is more deeply woven into the culture than tobacco. Economically, the industry is more diversified and powerful. This economic strength has been translated into political advantage. At the same time, the tobacco campaigns were not overnight successes. The ground work was built years before through public education based on sound research and incremental public health successes. The key for a similar alcohol strategy may be to focus on public education regarding the external social costs and consequences of alcohol abuse. It will also be nec-

essary to better organize and mobilize grass roots organizations who are involved in the issue for the long run. Further, greater advocacy and organization in Washington will be necessary to counter the well represented concerns of industry. The greatest danger is that expansions into advertising by the spirits industry may step up a war between it and the beer and wine industries. This could lead to increasing amounts of money spent on creatively advertising a greater variety of the products reaching a wider audience. The prize will be capturing the children and young adults as they begin a pattern of drinking.

VI. The Forum

The Forum will present four speaker, two representing the alcohol control perspective (one national and one Massachusetts based) and two representing the alcohol industry perspective (one national and one Massachusetts based).

David Mulligan is the chairman of the Boston Public Health Commission, and a professor at Stonehill College. Between 1989 and 1997, he served as Commissioner of the Massachusetts Department of Public Health. Prior to that, he served as Director of the DPH Division of Substance Abuse Services.

George Hacker is the Director of Alcohol Policies at the Center for Science in the Public Interest in Washington DC. The Center is the publisher of the Nutrition Action Healthletter.

Roger Berkowitz is the President of Legal Sea Foods, Inc.

Jeffrey Becker is the Vice President for Alcohol Issues at the Beer Institute in Washington, DC.

The Presentation and Discussion sections will focus on various perspectives on the need for new public policies to address youth and problem drinking.

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Bibliography

Abramson, Hilary. "Alcohol Ads Increase Drinking," the Marin Institute, Shaffer's article appears in *Alcohol Health and Research World*, Vol. 20, No. 4, 1996.

Advocacy Institute. "Taking initiative: the 1990 citizens' movement to raise California alcohol excise taxes to save lives." July, 1992.

"The Attorney General's task force on drinking by college students."
<http://www.health.org/pressrel/july/98/attgen.htm>.
Aug. 28, 1998.

Alcohol and Health, Ninth Special Report to the U.S. Congress. U.S. Department of Human Services, Washington DC, June 1997.

Beer Institute. *Advertising and Marketing Code.* Updated September, 1997.

Briton, N.J.; Clark, T.W.; Soldz, S.; and Krakow, M. "Adolescent Substance Use in Massachusetts: Trends Among Public School Students 1984-1996." Report submitted to the Massachusetts Department of Public Health, Bureau of Substance Abuse Services. Boston, MA: *Health and Addictions Research*, 1997.

Center for Science in the Public Interest. *State alcohol taxes & health: a citizen's action guide.* 1996.

Chaloupka, F.J. "Do youths substitute alcohol and marijuana? Some econometric evidence". National Bureau of Economic Research Working Paper number 4662, February, 1994.

Chaloupka, F.J. and Wechsler, H. "Binge drinking in college: The impact of price, availability and alcohol control policies." *Contemporary Economic Policy*. 14 (10):112-123, 1996.

Coate, D. and Grossman, M. "Effects of alcoholic beverage prices and legal drinking ages on youth alcohol use." *Journal of Law & Economics* 31:145-171, 1988.

Colditz, G.A.; Branch, L.G.; Lipnick, R.J.; Willett, W.C.; Rosner, B.; Posner, B.; and Hennekens, C.G. "Moderate alcohol and decreased cardiovascular mortality in elderly cohort." *American Heart Journal*. 109:886-889, 1985.

- Cook, P.J. and Moore, M. "This tax's for you: The case for higher beer taxes." *National Tax Journal* 47(3):559-573, 1994.
- Friedman, L.A. and Kimball, A.W. "Coronary heart disease mortality and alcohol consumption in Framingham." *American Journal of Epid.* 124:481-489, 1986.
- Gerbner, George. "Alcohol in American Culture" The Effects of the Mass Media on the Use and Abuse of Alcohol, NIAAA Research Monograph - 28, 1995.
- Grossman, M. "Health Benefits of increases in alcohol and cigarette taxes." *British Journal of Addiction* 84(10):1193-1204, 1989.
- Grossman, M.; Chaloupka, F.J.; Saffer, H.; and Laixuthai, A. "Effects of alcohol price policy on youth: A summary of economics research." *Journal of Research on Adolescence* 4 (2):347-364, 1994.
- Grossman, M.; Chaloupka, F.J.; and Sirtalan, I. "An empirical analysis of alcohol addiction: Results from the monitoring the future panels." *Economic Inquiry* 36:39-48, 1998.
- Grossman, M.; Coate, D.; and Arluck, G. "Price sensitivity of alcoholic beverages in the United States." In: Holder, H., ed. *Control Issues in Alcohol Abuse Prevention* Greenwich: JAI Press, Inc., 1987, pp. 169-198.
- Hingson R. and Howland J. "Alcohol and non-traffic unintended injuries." *Addiction* 88:877-883, 1993.
- Hein, H.O.; Suadicani, P.; and Gintelberg, F. "Alcohol consumption, serum low density lipoprotein cholesterol concentration, and risk of ischaemic heart disease: six year follow up in the Copenhagen male study." *BMJ* 312:736-741, 1996
- Kenkel, D. Drinking, driving, and deterrence: "The effectiveness and social costs of alternative policies." *Journal of Law & Economics* 36:877-913, 1993.
- Kenkel, D.J. "Prohibition versus taxation: Reconsidering the legal drinking age." *Contemporary Policy Issues* 11(7):48-57, 1993.
- Kenkel, D.J. "New estimates of the optimal tax on liquor." *Economic Inquiry* 34(4):296-319, 1996.
- Klatsky, A.L. Armstrong, M.A.; and Friedman, G.D. "Relations of alcoholic beverage use to subsequent coronary artery disease hospitalization." *American Journal of Cardiology* 58:710-714, 1986.
- Laixuthai, A. and Chaloupka, F.J. "Youth alcohol use and public policy." Paper presented at the meetings of the Western Economic Association, San Francisco, July 12, 1992.
- Lieber, Lauri. "Commercial and Character Slogan Recall by Children from 9 to 11 years Budweizer Frogs versus Bugs Bunny" The Globe, 1996.
- Leigh, J.P. and Hunter, C. "Health Policy and the distribution of lifetime income." *The Milbank Quarterly* 70(2):341-359, 1992.
- Manning, W.G.; Keeler, E.B.; Newhouse, J.P.; Sloss, E.M.; and Wasserman, J. "The taxes of sin: Do smokers and drinkers pay their way?" *Journal of the American Medical Association*. 261(11):1604-1609, 1989.
- Marmot, M.G.; Shipley, M.J.; Rose, G.; and Thomas, B.J. "Alcohol and mortality: A U-shaped curve." *Lancet* March 14, 1981: 580-583.
- Martin, S.E., ed. *The Effects of the Mass Media on the Use and Abuse of Alcohol*. National Institute on Alcohol Abuse and Alcoholism Research Monograph No. 28. U.S. Department of Health and Human Services, 1995.
- Massachusetts Department of Health, "Adolescent Substance Abuse in Massachusetts: Trends Among Public School Students, 1984-1996," May, 1997.
- Massing, M. "Why beer won't go up in smoke." *The New York Times Magazine* March 22, 1998.
- McCarty, D. "Policy tools to reduce problems related to the use of alcohol, tobacco, and other drugs." Paper prepared for the New Hampshire Charitable Foundation Substance Abuse Advisory Committee. January, 1997.
- Moore, R.D. and Pearson, T.A. "Moderate alcohol consumption and coronary artery disease: A review." *Medicine* 65: 242-267, 1986.
- National Clearing House for Alcohol and Drug Information. "Making the Link: Domestic Violence & Alcohol and Other Drugs." Aug. 25, 1998. <http://www.health.org/pubs/makelink/ml-domvi.htm>

National Clearing House for Alcohol and Drug Information. "Making the Link: Impaired driving, injury, and trauma & alcohol and other drugs." July 30, 1998. <http://www.health.org/pubs/makelink/ml-injur.htm>.

National Clearing House for Alcohol and Drug Information. "Making the Link: Violence and crime & alcohol and other drugs." Aug., 25, 1998. <http://www.health.org/pubs/makelink/ml-violc.htm>.

National Institute on Abuse and Alcoholism. No. 34 PH 370, October 1996.

National Institute on Alcohol Abuse and Alcoholism. "Alcohol Alert." No. 29: PH 357, <http://silk.nih.gov/silk/niaaa1/publication/aa29.htm>, July, 1995.

National Institute on Alcohol Abuse and Alcoholism. No. 37: <http://silk.nih.gov/silk/niaaa1/publication/aa37.htm>, July, 1997.

National Institute on Alcohol Abuse and Alcoholism. No. 38: <http://silk.nih.gov/silk/niaaa1/publication/aa38.htm>, October, 1997.

National Institute on Alcohol Abuse and Alcoholism. "Alcohol Alert." No. 39: <http://silk.nih.gov/silk/niaaa1/publication/aa39.htm>, January, 1998.

National Institute on Drug Abuse and Alcoholism, National Institute on Alcohol Abuse and Alcoholism Sponsored Report prepared by the Lewin Group, "The Economic Costs of Alcohol and Drug Abuse in the United States, 1992," March 1998.

Phelps, C. "Death and taxes: An opportunity for substitution." *Journal of Health Economics* 7:1-24, 1988.

Rajkumar, A.S. and French, M.T. "Drug Abuse, crime costs, and the economic benefits of treatment." *Journal of Quantitative Criminology*, October 1996.

Reiter, J. "Citizens or sinners?--The economic and political iniquity of "Sin Taxes" on tobacco and alcohol products." *Columbia Journal of Law and Social Problems*. 29:443-468, 1996.

Rice, D.P.; Kelman, S.; Miller, L.S.; and Dunmeyer, S. *The Economic Costs of Alcohol and Drug*

Abuse and Mental Illness: 1985. Report submitted to the Office of Financing and Coverage Policy of the Alcohol, Drug Abuse, and Mental Health Administration, U.S. Department of Health and Human Services. San Francisco, CA: Institute for Health and Aging, University of California, 1990.

Ridker, P.M.; Vaughn, D.E.; Stampfer, M.J.; Glynn, R.J.; and Hennekens, C.H. "Association of moderate alcohol consumption and plasma concentration of endogenous tissue-type plasminogen activator." *Journal of the American Medical Association* 272:929-933, 1994.

Rimm, E.B.; Klatsky, A.; Grobbee, D. and Stampfer, M.J. "Review of moderate alcohol consumption and reduced risk of coronary heart disease: is the effect due to beer, wine, or spirits?" *BMJ* 312:731-716, 1996.

Saffer, H. and Grossman, M. "Beer taxes, the legal drinking age and youth motor vehicle fatalities." *Journal of Legal Studies* 16(2):351-374, 1987.

Sgontz, L. "Optimal taxation: The mix of alcohol and other taxes." *Public Finance Quarterly* 21(3):260-275, 1993.

Shaper, A.G.; Wannamethee, G.; and Walker, M. "Alcohol and mortality in British men: explaining the U-shaped curve." *The Lancet* Dec. 3, 1988:1267-1273.

St. Leger, A.S.; Cochrane, A.L.; and Moore, F. "Factors associated with cardiac mortality in developed countries with particular reference to the consumption of wine." *Lancet* May 12, 1979:1017-1020.

U.S. Department of Health and Human Services. *Health, United States, 1998 with Socioeconomic Status and Health Chartbook*. PHS 98-1232, 1998.

U.S. Department of Health and Human Services. *Ninth Special Report to the U.S. Congress on Alcohol and Health from the Secretary of Health and Human Services*. June, 1997.

US DoI. "Background Information: Substance abuse." <http://www.dol.gov/dol/asp/public/programs/drugs/bac kgrnd.htm>, Aug. 25, 1998.

Yano, K.; Rhoads, G.G.; and Kargan, A. Dietary intake and the risk of coronary heart disease in Japanese men living in Hawaii. *New England Journal of Medicine*:297:405, 1977.