

Updated Edition



U.S. Department of Justice  
Office of Justice Programs  
*Office of Juvenile Justice and Delinquency Prevention*

# Costs of Underage Drinking




Prepared by

**Pacific Institute**

FOR RESEARCH AND EVALUATION

In support of the  
*OJJDP Enforcing the  
Underage Drinking Laws Program*



*This project was supported by the Office of Juvenile Justice and Delinquency Prevention in conjunction with its Enforcing Underage Drinking Laws program. The first edition of this report was prepared for the 1999 National Leadership Conference as part of the Phase II Training and Technical Assistance program.*

*The opinions in this document are those of the authors and do not necessarily reflect the official position or policies of the U.S. Department of Justice.*

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*The first edition of this report used death and injury counts from 1994–1995. This revised edition uses newer counts, primarily from 1996. It also includes cost estimates by state.*

***Revised October 1999***

# About This Guide

Increasingly, underage alcohol use is receiving attention from policymakers and the public. In view of the problems created by underage drinking, it is appropriate that this issue continues to be high on our national agenda, especially since we have so many effective tools for preventing underage drinking.

This document provides information about the range of serious health and social problems associated with underage drinking and about their economic costs. The document can be used to

- n increase awareness that underage drinking is related to a host of serious problems
- n inform policymakers and decisionmakers of the importance of preventing underage drinking
- n provide information regarding the magnitude of underage drinking problems
- n help to set prevention priorities.

Significant progress has been made in reducing underage drinking and related problems. If that progress is to be maintained and continued, the issue must be given even wider visibility, and the public and policymakers must develop a more complete understanding of the problems and the costs. This document can help in that effort.



# Costs of Underage Drinking\*

Raising the minimum purchase age for alcohol to 21 throughout the country has been a successful strategy for reducing alcohol use and preventing related problems. For example, since 1975 minimum purchase age laws have prevented more than 17,000 traffic fatalities.<sup>1</sup> However, it is clear that young people still drink and their drinking all too often results in serious health and social problems. For the first time, estimates are available of the costs associated with underage alcohol consumption. The cost estimates summarized in this document can be useful in supporting decisions by planners and policymakers to take strong and deliberate action to reduce underage drinking.\* Of course, regardless of the economic costs associated with underage drinking, those who care about youth should be motivated to prevent the tragic consequences associated with underage alcohol use.

## Costs of Alcohol Use by Youth

The total cost of alcohol use by youth was \$52.8 billion in 1996.<sup>2</sup>










- n This is the equivalent of \$200 for every man, woman, and child in the United States.
- n This also equals \$530 per year for every household in the United States.<sup>3</sup>
- n If this cost were shared equally by each congressional district, the amount would total more than \$120 million per district.
- n Each year, the federal government spends between \$900 million and \$1 billion on alcohol prevention services for people of all ages:<sup>4</sup> this total is less than 2 percent of the annual costs of alcohol use by youth alone.

*\*A more complete description of the estimation methodology used here can be found in David T. Levy, Ph.D., Ted R. Miller, Ph.D., Rebecca Spicer, Kathryn Stewart, and Kenya Cox, "Underage Drinking: Immediate Consequences and Their Costs." Pacific Institute for Research and Evaluation working paper, July 1999.*

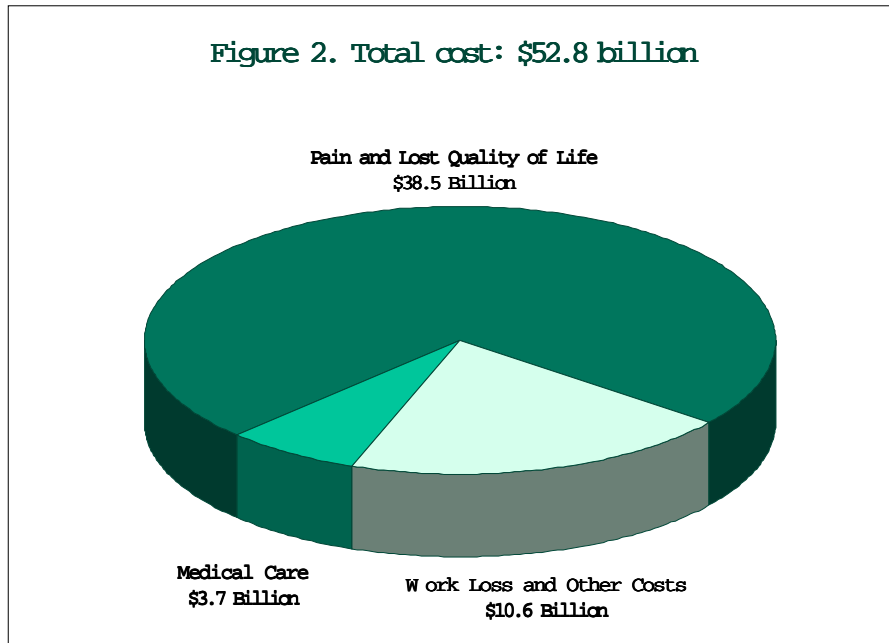
## Problems Caused by Alcohol Use

Many of us are all too familiar with one very serious consequence of underage drinking—alcohol-related traffic crashes. The combination of alcohol use with driving by young people who have little alcohol tolerance or driving experience can indeed be deadly. As can be seen in figure 1, several other costly problems are associated with underage drinking, including crime, various types of traumatic injury, suicide, fetal alcohol syndrome (FAS), alcohol poisonings, and alcohol dependence and abuse requiring treatment.

**Figure 1. Costs of alcohol use by youth in 1996—  
at a glance**

		<i>in 1998 dollars</i>
Traffic Crashes		\$19,452,000,000
Violent Crime		\$29,368,000,000
Burns		\$189,000,000
Drowning		\$426,000,000
Suicide Attempts		\$1,512,000,000
Fetal Alcohol Syndrome		\$493,000,000
Alcohol Poisonings		\$340,000,000
Treatment		\$1,008,000,000
<b>TOTAL</b>		<b>\$52,788,000,000</b>

Yet another breakdown of this \$52.8 billion expense is *how it was spent*: these problems resulted in \$3.7 billion in medical spending in 1996—about four percent of total U.S. medical spending; they led to future work losses, property damage, and criminal justice costs of \$10.6 billion; and they caused pain and quality of life losses conservatively valued at \$38.5 billion (see figure 2). **NOTE:** see page 16 for definitions of these categories and an explanation of how pain and lost quality of life are valued.



Source: see errnote 2.

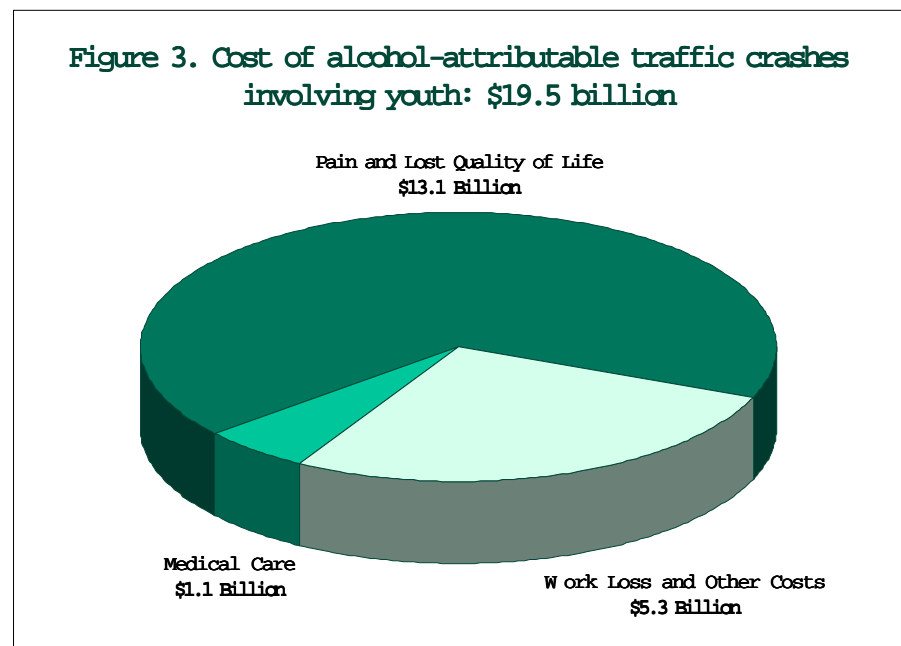
These problems and their staggering costs are indeed alarming, but it is important to keep in mind that many effective tools are available to prevent and reduce underage drinking. Since 1975, the reduction in traffic fatalities resulting from the increase in the minimum drinking age has saved society \$53.6 billion.<sup>5</sup>

Understanding the nature of underage drinking—and the human, economic, and other costs associated with it—can promote more vigorous and comprehensive application of effective prevention strategies.

## Specific Alcohol-Related Problems

### Traffic Crashes

Almost 20 percent of all traffic crashes involving a driver under age 21 involve alcohol. Of course not every crash *involving* alcohol is actually *caused* by alcohol. Counting only those alcohol-attributable crashes with a driver under age 21, the costs total \$19.1 billion per year (in 1998 dollars).<sup>6</sup> (See table 1 in the appendix for a breakdown by state.) An additional cost of \$337 million is accrued due to accidents involving pedestrians and cyclists under age 21, which brings this total cost to \$19.5 billion.<sup>7</sup> (See figure 3.)



Source: see endnote 2.

### Interpersonal Violence

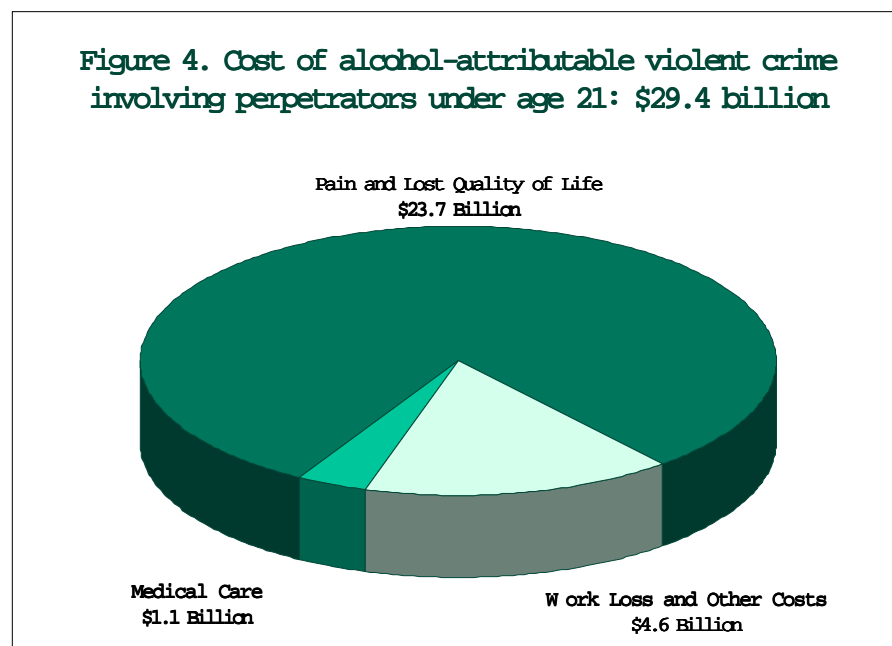
It is estimated that incidents of interpersonal violence committed by individuals under age 21 account for approximately

- n 36 percent of murders
- n 45 percent of rapes
- n 44 percent of robberies
- n 37 percent of assaults
- n 16 percent of child abuse<sup>8</sup>

Numerous studies reveal that both perpetrators and victims of violence are often under the influence of alcohol at the time of the offense.<sup>9</sup> A causal

role of alcohol in violence is supported by experimental studies of biological effects and population studies that control for other factors.<sup>10</sup> These findings are borne out in interviews with convicted offenders: in 1996, 36 percent of adult offenders indicated that they had been drinking when they committed their crimes.<sup>11</sup> One study found that some types of youth homicide declined when states raised the minimum drinking age and that beer consumption levels predicted youth homicide rates.<sup>12</sup>

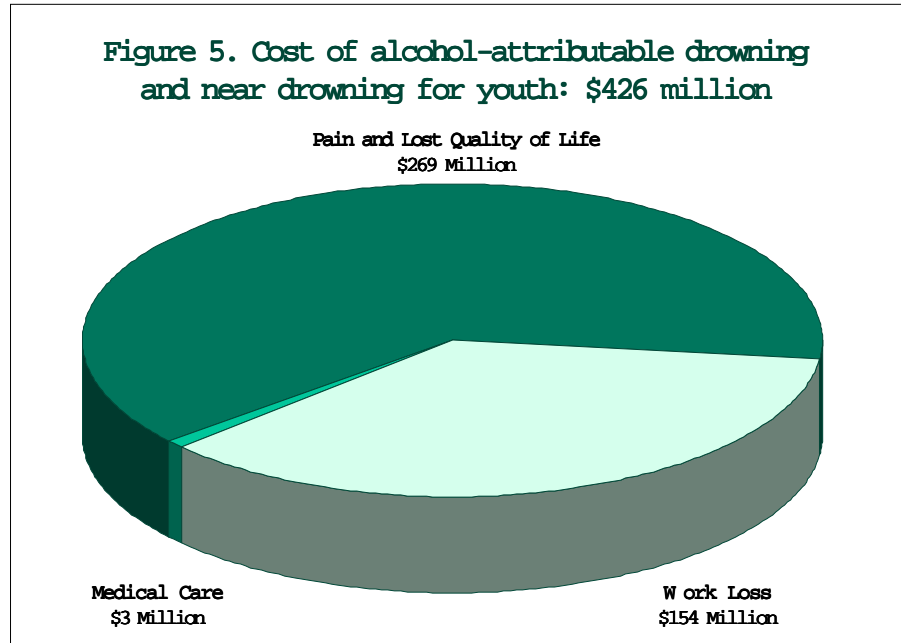
The total cost of alcohol-attributable violent crime involving perpetrators under age 21 is \$29.4 billion (see figure 4).<sup>13</sup>



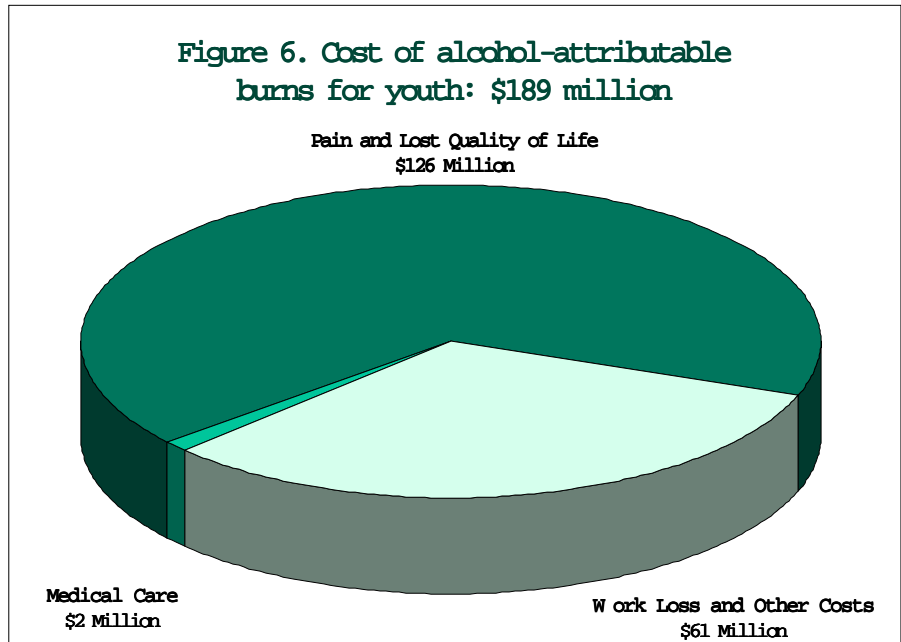
Source: see endnote 2.

### Unintentional Drownings and Burns

The involvement of alcohol in cases of fatal drownings and burns has been well described in alcohol literature although rates of involvement vary considerably.<sup>14</sup> Alcohol involvement in drownings is high among youth,<sup>15</sup> and the cost of alcohol-attributable drowning and near drowning for youth is \$426 million. The cost of alcohol-attributable burns for youth is \$189 million. (See figures 5 and 6.)<sup>16</sup>



Source: see endnote 2.

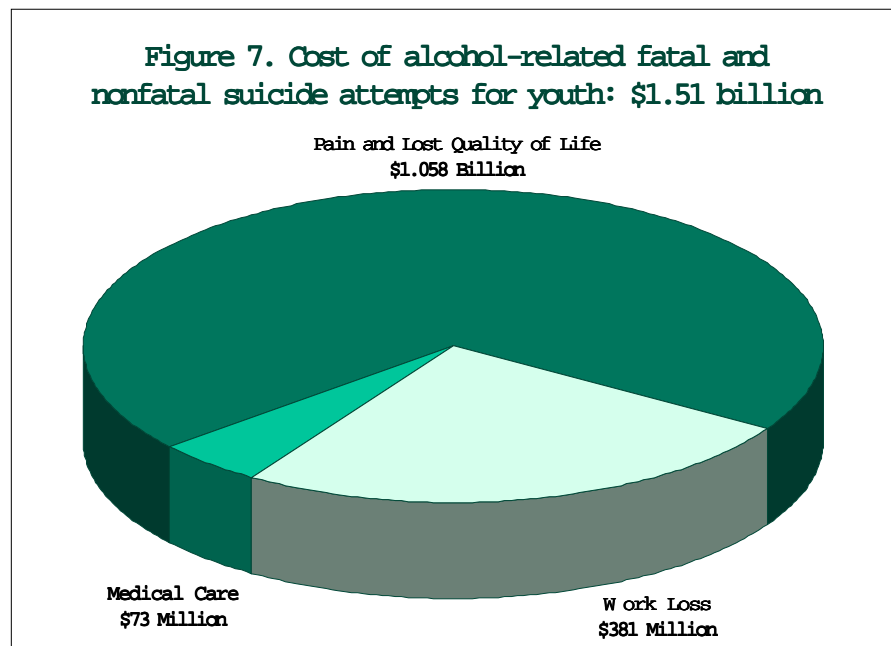


Source: see endnote 2.

## Suicides

In 1996, 2,478 suicide victims in the United States were under age 21. In addition, 63,000 nonfatal suicide attempts involved those under 21. The association of alcohol with suicide has been established by numerous studies.<sup>17</sup> It is estimated that 12 percent of male suicides and 8 percent of female suicides are attributable to alcohol.<sup>18</sup>

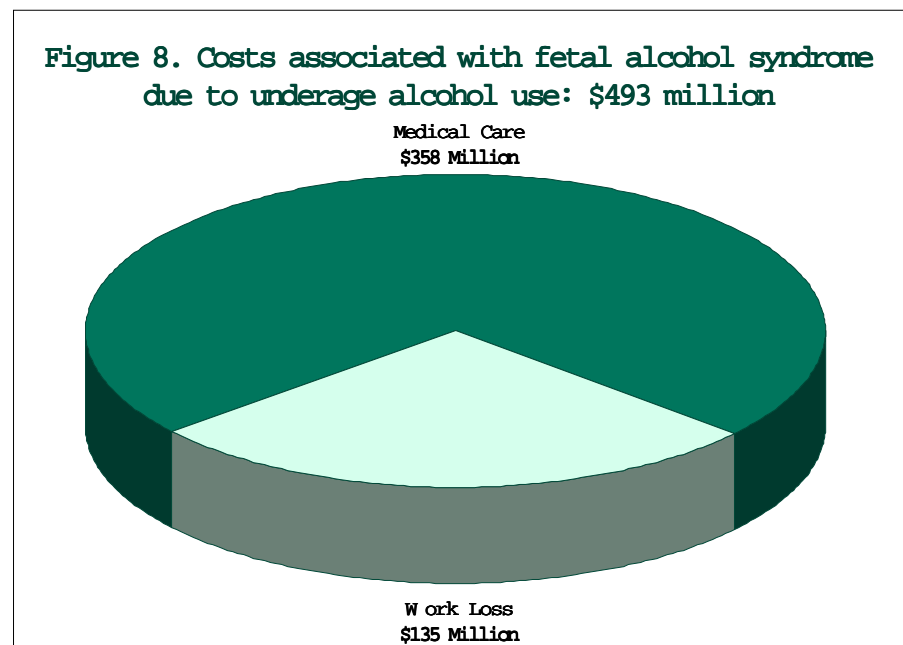
The cost of alcohol-attributable suicide attempts (fatal and nonfatal) for youth is \$1.51 billion. (See figure 7 and an additional breakdown by states in table 2 of the appendix.) Nonfatal attempts may result in additional costs due to psychological harm, which are excluded from the above estimates.



Source: see *errnote 2*.

### Fetal Alcohol Syndrome

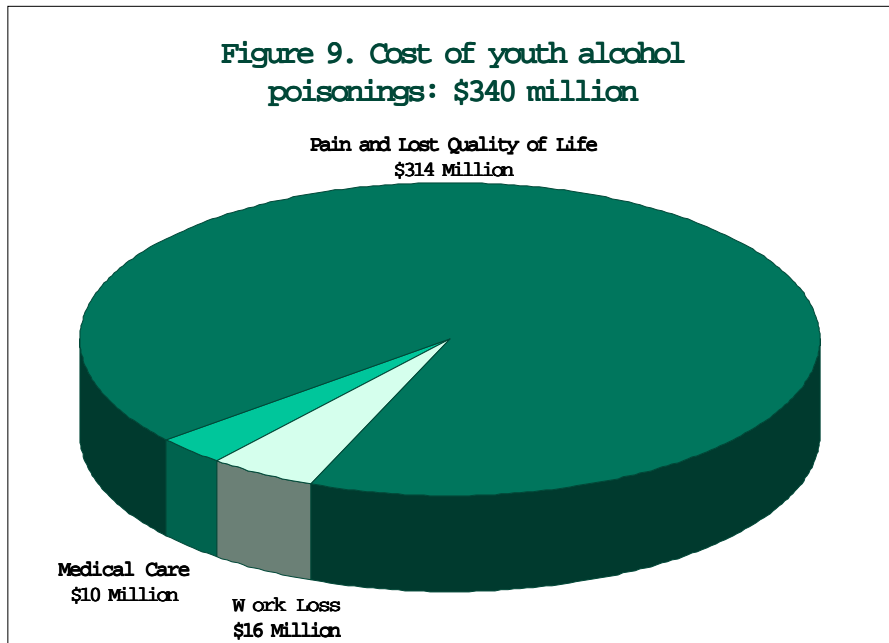
Prenatal alcohol exposure is known to be toxic to the developing fetus and is one of the leading causes of mental retardation.<sup>19</sup> A recent government study estimated that FAS cost society more than \$944 million in 1992, exclusive of the value of pain and lost quality of life.<sup>20</sup> The cost of FAS as a consequence of underage alcohol use is \$493 million. (See figure 8.)



Source: see endnote 2.

### Alcohol Poisonings

Heavy drinking can lead to alcohol poisoning. In 1994, there were ten fatal and 40,000 nonfatal cases of alcohol poisoning among youth in the United States. The cost of youth alcohol poisonings was \$340 million in 1994. (See figure 9.) Alcohol poisonings are likely to be heavily *underreported* because physician reports often omit the mention of alcohol in patient records to avoid family embarrassment.<sup>21</sup>



Source: see *errhote 2*.

## Alcohol Dependence and Alcohol Abuse Treatment

In 1991, 9.4 percent of alcoholism-only and 16.2 percent of alcohol-and-other-drug treatment clients were under age 21.<sup>22</sup> Treatment costs of alcohol dependence for those under age 21 for the United States are estimated at \$1.008 billion annually. Treatment costs for alcohol dependence syndrome average an estimated \$16,000 per case. Dependency treatment costs are understated because they do not include costs related to work loss or pain and lost quality of life.

## Conclusion

It is important for policymakers and the public to have a clear understanding of the many problems related to underage drinking and of the magnitude of these problems, both in human and in economic terms. We have made significant progress in reducing underage drinking and some of its consequences. Many effective prevention and enforcement strategies have been developed that can be applied more broadly and more vigorously to reduce the enormous costs. If we are to make further progress, we must make preventing underage drinking a high social and political priority.

<sup>6</sup> Miller, T. R., Iestira, D., and Shiner, R. S. (1998). Highway rash

# E ndnotes

<sup>1</sup> National Highway Traffic Safety Administration. (n.d.) Traffic Safety Facts 1997: Alcohol. Washington, DC: NHTSA.

<sup>2</sup> David T. Levy, Ph.D., Ted R. Miller, Ph.D., Rebecca Spicer, Kathryn Stewart, and Kenya Cox, "Underage Drinking: Immediate Consequences and their Costs," Pacific Institute for Research and Evaluation working paper, July 1999. Cost figures are based on problem incidents in 1996, converted to 1998 dollars to reflect more current costs.

<sup>3</sup> Based on U.S. population of 270 million and total U.S. households of 101,018,000. Both figures from *The world almanac and book of facts 1999*. (1998). Primedia Reference, 373, 384.

<sup>4</sup> National Institute on Drug Abuse and National Institute on Alcohol Abuse and Alcoholism. (1998). *The economic costs of alcohol and drug abuse in the United States 1992*, by H. Harwood, D. Fountain, and G. Livermore (NIH Publication No. 98-4327). Washington, DC: U.S. Government Printing Office.

<sup>5</sup> These figures are computed with the same value per life saved that is used elsewhere in this paper and are in 1998 dollars.

costs in the United States by driver age, blood alcohol level, victim age, and restraint use. *Accident Analysis and Prevention*, 30, 137-150.

The cost of traffic crashes attributed to underage drinking is conservative in that the percentage attributed to alcohol probably understates the role of alcohol in youth traffic crashes. The estimate of risk is based on all drivers, although young drivers, who have relatively little experience with alcohol and with driving are more likely to be the cause of a crash when alcohol is involved.

Zador, P.L. (1991). Alcohol-related relative risk of fatal driver injuries in relation to driver age and sex. *Journal of Studies on Alcohol*, 52, 302-310.

- <sup>8</sup> Bureau of Justice Statistics. (1998). *Sourcebook of criminal justice statistics 1997*, K. Maguire and A. L. Pastore (Eds.) (NCJ-171147). Washington, DC: U.S. Government Printing Office.
- Finkelhor, D., and Dziuba-Leatherman, J. (1994). Children as victims of violence: A national survey. *Pediatrics*, 94, (4 pt 1), 413-420.;
- Miller, T. R., Cohen, M.A., and Wiersma, B. (1996). *Victim costs and consequences: A new look*. Washington, DC: National Institute of Justice.
- <sup>9</sup> Murdoch, D., Pihl, R. O., and Ross, D. (1990). Alcohol and crimes of violence: Present issues. *International Journal of the Addictions*, 25, 1065-1081.
- Martin, S. (1992). The epidemiology of alcohol-related interpersonal violence. *Alcohol Health & Research World*, 16, 230-237.
- Roizen, J. (1997). Epidemiological issues in alcohol-related violence. In M. Galanter (Ed.), *Recent Developments in Alcoholism: Vol. 13. Alcohol and Violence* (pp. 7-40). New York: Plenum Press.
- Brisman, B., and Bergman, B. (1998). The significance of alcohol for violence and accidents. *Alcoholism: Clinical and Experimental Research*, 22 (7 Suppl), 299S-306S.
- Scott, K.D., Schafer, J., and Greenfield, T.K. (1999). The role of alcohol in physical assault perpetration and victimization. *Journal of Studies on Alcohol*, 60, 528-536.
- <sup>10</sup> Bushman, B. J., and Cooper, H. M. (1990). Effects of alcohol on human aggression: An integrative research review. *Psychological Bulletin*, 107, 341-354.
- Miczek, K. A., DeBold, J. F., Haney, M., Tidy, J., Vivian, J., and Werts, E. M. (1994). Alcohol, drugs of abuse, aggression, and violence. In A. J. Reiss, Jr., and J. A. Roth (Eds.), *Understanding and preventing violence: Vol. 3 Social influences* (pp. 377-570). Washington, DC: National Academy Press.
- Dougherty, D.M., Bjork, J.M., Bennett, R.H., and Moeller, F.G. (1999). The effects of a cumulative alcohol dosing procedure on laboratory aggression in women and men. *Journal of Studies on Alcohol*, 60, 322-329.
- Dougherty, D.M., Cherek, D.R., and Bennett, R.H. (1996). The effects of alcohol on the aggressive responding of women. *Journal of Studies on Alcohol*, 57, 178-186.
- Bushman, B.J. (1997). Effects of alcohol on human aggression: Validity of proposed explanations. In M. Galanter (Ed.), *Recent Developments in Alcoholism: Vol. 13. Alcohol and Violence* (pp. 227-243). New York: Plenum Press.
- Collins, J. J., and Schlenger, W. E. (1988). Acute and chronic effects of alcohol use on violence. *Journal of Studies on Alcohol*, 49, 516-521.
- <sup>11</sup> Bureau of Justice Statistics. (1998). *Alcohol and crime: An analysis of national data on the prevalence of alcohol involvement in crime*, by L.A. Greenfield. (NCJ 168632). Washington, DC: Author.

- <sup>12</sup> Parker, R. N., and Redburn, L. (1995). *Alcohol and homicide: A deadly combination of two American traditions*. Albany, NY: State University of New York Press.
- <sup>13</sup> For details on crime costing, see Miller, T.R., Cohen, M.A., and Wiersma, B. (1996). *Victim costs and consequences: A new look*. Washington, DC: National Institute of Justice.
- <sup>14</sup> Hingson, R., and Howland, J. (1987). Alcohol as a risk factor for injury or death resulting from accidental falls: A review of the literature. *Journal of Studies on Alcohol*, 48, 212-219.
- Hingson, R., and Howland, J. (1993). Alcohol and non-traffic unintended injuries. *Addiction*, 88, 877-883.
- Howland, J., and Hingson, R. (1987). Alcohol as a risk factor for injuries or death due to fires or burns: Review of the literature. *Public Health Reports*, 102, 475-483.
- Howland, J., and Hingson, R. (1988). Alcohol as a risk factor for drownings: A review of the literature (1950-1985). *Accident Analysis and Prevention*, 20, 19-25.
- Roizen, J. (1989). Alcohol and trauma. In N. Giesbrecht, R. Gonzalez, M. Grant, E. Osterberg, R. Room, I. Rootman, and L. Towle (Eds.), *Drinking and casualties: Accidents, poisonings and violence in an international perspective* (pp. 21-66). London: Tavistock/Routledge.
- Smith, G. S., and Brenner, R. A. (1995). The changing risks of drowning for adolescents in the U.S. and effective control strategies. *Adolescent Medicine*, 6, 153-169.
- National Institute on Drug Abuse and National Institute on Alcohol Abuse and Alcoholism. (1998). *The economic costs of alcohol and drug abuse in the United States 1992*, by H. Harwood, D. Fountain, & G. Livemore. (NIH Publication 98-4327). Washington, DC: U.S. Government Printing Office.
- Grobmyer, S.R., Mascalco, S.P., Purdie, G.F., and Hunt, J.L. (1996). Alcohol, drug intoxication, or both at the time of burn injury as a predictor of complications and mortality in hospitalized patients with burns. *Journal of Burn Care Rehabilitation*, 17, 532-539.
- Smith, G.S., Branas, C.C., and Miller, T.R. (1999). Fatal nontraffic injuries involving alcohol: A meta-analysis. *Annals of Emergency Medicine*, 33, 659-668.
- <sup>15</sup> Howland, J., Hingson, R., Heeren, T., Bak, S., and Mangione, T. (1993). Alcohol use and aquatic activities—United States, 1991. *Morbidity and Mortality Weekly Report* 42 (35), 675, 681-683.
- <sup>16</sup> Alcohol plays a role in a variety of unintentional injuries and deaths other than burns and drownings. Reliable estimates of alcohol attribution for these incidents (e.g., unintentional falls) are not available.

- <sup>17</sup> Andreasson, S., Allebeck, P., and Romelsjö, A. (1988). Alcohol and mortality among young men: Longitudinal study of Swedish conscripts. *British Medical Journal*, 296, 1021-1025.
- Commonwealth Department of Health and Human Services. (1995). *The quantification of drug caused morbidity and mortality in Australia 1995*. Canberra: Commonwealth of Australia.
- Smith, G.S., Branas, C.C., and Miller, T.R. (1999). Fetal nontrafic injuries involving alcohol: A meta-analysis. *Annals of Emergency Medicine*, 33, 659-668.
- Rich, C.L., Drossche, D.M., Ghani, S., and Isacson, G. (1998). Suicide methods and presence of intoxicating abusable substances: Some clinical and public health implications. *Annals of Clinical Psychiatry*, 10, 169-175.
- <sup>18</sup> Commonwealth Department of Health and Human Services. (1995). *The quantification of drug caused morbidity and mortality in Australia 1995*. Canberra: Commonwealth of Australia.
- <sup>19</sup> National Institute on Alcohol Abuse and Alcoholism. (1991). *Fetal alcohol syndrome* (Alcohol Alert No. 13). Rockville, MD: Author.
- Bagheri, M.M., Burd, L., Martsolf, J.T., and Klug, M.G. (1998). Fetal alcohol syndrome: Maternal and neonatal characteristics. *Journal of Perinatal Medicine*, 26, 263-269.
- <sup>20</sup> National Institute on Drug Abuse and National Institute on Alcohol Abuse and Alcoholism. (1998). *The economic costs of alcohol and drug abuse in the United States 1992*, by H. Harwood, D. Fountain, & G. Livenmore. (NIH Publication 98-4327). Washington, DC: U.S. Government Printing Office.
- <sup>21</sup> Dufour, M. C., and Caces, M. F. (1993). Epidemiology of the medical consequences of alcohol. *Alcohol Health & Research World*, 17, 265-271.
- <sup>22</sup> Substance Abuse and Mental Health Services Administration, Office of Applied Studies. (1993). *National Drug and Alcoholism Treatment Unit Survey: 1991 main findings report* (DHHS Publication No. SMA 93-2007). Rockville, MD: Author.

# A ppendix

- **Definitions and Values**
- **Table 1. Costs of Alcohol-Attributable Youth Traffic Crashes by State (in 1998 dollars)**
- **Table 2. Costs of Alcohol-Attributable Youth Violence by State (in 1998 dollars)**
- **Table 3. Costs of Alcohol-Attributable Youth Problems by State (in 1998 dollars)**

# Definitions and Values

## Definitions

- **Medical Care Costs** include payments for emergency transport, paramedic, hospital, physician, and health services, rehabilitation, prescriptions, nursing home care, home health care, medical equipment, and burial costs as well as insurers' medical care claims processing costs. For violence, this category also includes mental health treatment cost.
- **Work Loss** is the present value of a lifetime's worth of wage and household work that children will be unable to do as adults if they are killed or permanently disabled. The earnings include fringe benefits. This category also includes insurer and employer costs of compensating earnings losses (including their legal expenses). For violence, this category also includes earnings lost by family and friends caring for the injured and the value of school missed when children are temporarily disabled.
- **Other Costs** include police, fire, and property damage costs. For violence, this category also includes social services and victim assistance costs.

## Quality of Life Calculation Methods

To value **pain and quality of life lost to fatal injuries**, we start by estimating the value people place on survival. We measure the value of survival from the amounts people spend (in dollars or time) for safety. Fifty technically sound studies have estimated this value (Miller, 1990). They examine such things as markets for auto safety features and smoke detectors, extra wages paid to get workers to take risky jobs, and speed choice when driving.

The value of survival is essentially the combined value of future work and quality of life. By subtracting the work loss, we get the pain and quality of life costs per death.

To value pain and quality of life lost to nonfatal injury, we use two methods. In the first, physicians rate the typical effects of different injuries on six dimensions of functioning: mobility, cognitive, bending and grasping, pain, sensory, and cosmetic. We also collect data about a seventh dimension: the ability to work. Using surveys about the value people place on different dimensions of functioning, we combine the data to obtain a percentage of the value of survival lost to each injury.

Again, we subtract lost future earnings to get the pain and quality of life costs per injury.

The second method uses jury verdicts to value victim's pain and lost quality of life. This method is used in valuing these losses for violent crime and for drunk driving crashes without physical injury.

Estimates from the two methods of valuing pain and quality of life lost to nonfatal injury differ by less than ten percent.

For some audiences, it is preferable to omit the value of pain and lost quality of life when presenting the costs of underage drinking. Since 1989, however, the U.S. Office of Management and Budget has required all federal regulatory benefit-cost analyses to include pain and quality of life costs if they place a dollar value on saving lives.

**Table 1. Costs of Alcohol-Attributable Traffic Crashes\* Involving Youth by State (in 1998 dollars)**

State	Medical Care	Work Loss & Other Costs	Pain & Lost Quality of Life	Total
Alabama	\$12,894,400	\$160,921,800	\$302,880,800	\$476,697,000
Alaska	\$2,134,700	\$11,690,900	\$336,534,200	\$350,359,800
Arizona	\$17,853,800	\$106,035,600	\$269,227,300	\$393,116,700
Arkansas	\$1,142,800	\$51,214,200	\$84,133,500	\$136,490,500
California	\$90,131,300	\$516,683,400	\$1,177,869,600	\$1,784,684,300
Colorado	\$32,343,800	\$110,291,500	\$302,880,800	\$445,516,100
Connecticut	\$5,670,900	\$48,489,400	\$100,960,300	\$155,120,600
Delaware	\$3,169,700	\$11,068,100	\$33,653,400	\$47,891,200
District of Columbia	\$18,975,000	\$53,459,000	\$134,613,700	\$207,047,700
Florida	\$58,003,100	\$276,507,400	\$723,548,500	\$1,058,059,000
Georgia	\$21,346,900	\$116,909,000	\$302,880,800	\$441,136,700
Hawaii	\$36,160,300	\$95,019,400	\$218,747,200	\$349,926,900
Idaho	\$3,859,700	\$23,628,300	\$67,306,800	\$94,794,800
Illinois	\$49,809,400	\$229,536,200	\$538,454,700	\$817,800,300
Indiana	\$15,956,300	\$94,202,000	\$201,920,500	\$312,078,800
Iowa	\$8,129,100	\$47,010,100	\$100,960,300	\$156,099,500
Kansas	\$6,900,000	\$47,749,700	\$117,787,000	\$172,436,700
Kentucky	\$10,996,900	\$71,235,400	\$168,267,100	\$250,499,400
Louisiana	\$35,793,800	\$95,240,000	\$218,747,200	\$349,781,000
Maine	\$15,525,000	\$42,559,600	\$134,613,700	\$192,698,300
Maryland	\$17,896,900	\$93,034,200	\$201,920,500	\$312,851,600
Massachusetts	\$5,821,900	\$48,398,500	\$117,787,000	\$172,007,400
Michigan	\$38,165,600	\$184,641,000	\$487,974,600	\$710,781,200
Minnesota	\$12,721,900	\$57,221,800	\$168,267,100	\$238,210,800
Mississippi	\$27,168,800	\$100,430,200	\$235,573,900	\$363,172,900
Missouri	\$18,328,100	\$118,725,600	\$302,880,800	\$439,934,500
Montana	\$4,506,600	\$23,239,100	\$50,480,100	\$78,225,800
Nebraska	\$4,528,100	\$23,226,100	\$50,480,100	\$78,234,300
Nevada	\$7,115,600	\$47,620,000	\$117,787,000	\$172,522,600
New Hampshire	\$2,307,200	\$11,587,100	\$33,653,400	\$47,547,700
New Jersey	\$45,065,600	\$102,636,000	\$387,014,300	\$534,715,900
New Mexico	\$11,859,400	\$57,740,900	\$134,613,700	\$204,214,000
New York	\$45,281,300	\$219,285,500	\$471,147,800	\$735,714,600
North Carolina	\$29,109,400	\$138,188,800	\$302,880,800	\$470,179,000

Table 1—Continued.

State	Medical Care	Work Loss & Other Costs	Pain & Lost Quality of Life	Total
North Dakota	\$1,811,300	\$11,885,500	\$16,826,700	\$30,523,500
Ohio	\$48,709,700	\$230,197,900	\$403,841,000	\$682,748,600
Oklahoma	\$10,695,000	\$58,441,500	\$151,440,400	\$220,576,900
Oregon	\$31,589,100	\$97,770,200	\$302,880,800	\$432,240,100
Pennsylvania	\$33,335,600	\$161,596,600	\$336,534,200	\$531,466,400
Rhode Island	\$31,934,100	\$71,611,600	\$252,400,600	\$355,946,300
South Carolina	\$9,056,300	\$72,403,200	\$151,440,400	\$232,899,900
South Dakota	\$2,867,800	\$11,249,700	\$33,653,400	\$47,770,900
Tennessee	\$36,828,800	\$146,519,100	\$353,360,900	\$536,708,800
Texas	\$81,506,300	\$469,971,700	\$1,177,869,600	\$1,729,347,600
Utah	\$29,756,300	\$72,922,200	\$134,613,700	\$237,292,200
Vermont	\$1,789,700	\$9,303,400	\$21,874,700	\$32,967,800
Virginia	\$21,885,900	\$103,609,200	\$252,400,600	\$377,895,700
Washington	\$19,147,500	\$105,257,100	\$319,707,500	\$444,112,100
West Virginia	\$4,980,900	\$22,953,600	\$67,306,800	\$95,241,300
Wisconsin	\$19,621,900	\$91,996,100	\$218,747,200	\$330,365,200
Wyoming	\$1,811,300	\$11,885,500	\$33,653,400	\$47,350,200
<b>USA</b>	<b>\$1,104,000,800</b>	<b>\$5,184,999,900</b>	<b>\$12,827,000,400</b>	<b>\$19,116,001,100</b>

\* Does not include crashes where an alcohol-involved youth pedestrian or cyclist was injured by a sober driver—an additional cost of \$337 million.

**Table 2. Costs of Alcohol-Attributable Violence Involving Youth by State (in 1998 dollars)**

State	Medical Care	Work Loss & Other Costs	Pain & Lost Quality of Life	Total
Alabama	\$14,086,000	\$62,461,000	\$290,215,000	\$366,762,000
Alaska	\$7,869,000	\$16,393,000	\$120,401,000	\$144,663,000
Arizona	\$19,791,000	\$82,044,000	\$384,485,000	\$486,320,000
Arkansas	\$5,550,000	\$29,619,000	\$145,318,000	\$180,487,000
California	\$184,832,000	\$773,059,000	\$3,573,953,000	\$4,531,844,000
Colorado	\$15,946,000	\$54,342,000	\$342,020,000	\$412,308,000
Connecticut	\$10,739,000	\$46,726,000	\$255,710,000	\$313,175,000
Delaware	\$4,698,000	\$12,531,000	\$111,823,000	\$129,052,000
District of Columbia	\$9,067,000	\$97,738,000	\$285,149,000	\$391,954,000
Florida	\$94,088,000	\$348,751,000	\$1,921,398,000	\$2,364,237,000
Georgia	\$27,278,000	\$124,042,000	\$615,365,000	\$766,685,000
Hawaii	\$3,245,000	\$12,061,000	\$71,603,000	\$86,909,000
Idaho	\$2,955,000	\$7,861,000	\$55,978,000	\$66,794,000
Illinois	\$54,430,000	\$300,605,000	\$1,397,015,000	\$1,752,050,000
Indiana	\$16,242,000	\$79,017,000	\$405,685,000	\$500,944,000
Iowa	\$5,601,000	\$16,468,000	\$122,044,000	\$144,113,000
Kansas	\$6,161,000	\$26,276,000	\$152,614,000	\$185,051,000
Kentucky	\$9,196,000	\$35,241,000	\$199,001,000	\$243,438,000
Louisiana	\$19,806,000	\$116,885,000	\$491,895,000	\$628,586,000
Maine	\$2,685,000	\$5,786,000	\$45,684,000	\$54,155,000
Maryland	\$18,807,000	\$129,256,000	\$575,955,000	\$724,018,000
Massachusetts	\$32,543,000	\$101,040,000	\$594,206,000	\$727,789,000
Michigan	\$46,924,000	\$178,658,000	\$1,140,953,000	\$1,366,535,000
Minnesota	\$17,040,000	\$47,929,000	\$422,823,000	\$487,792,000
Mississippi	\$6,579,000	\$37,029,000	\$166,107,000	\$209,715,000
Missouri	\$19,669,000	\$87,755,000	\$426,715,000	\$534,139,000
Montana	\$1,744,000	\$4,915,000	\$35,983,000	\$42,642,000
Nebraska	\$3,045,000	\$13,635,000	\$75,812,000	\$92,492,000
Nevada	\$13,812,000	\$54,306,000	\$305,581,000	\$373,699,000
New Hampshire	\$2,835,000	\$7,488,000	\$75,891,000	\$86,214,000
New Jersey	\$22,200,000	\$123,013,000	\$599,543,000	\$744,756,000
New Mexico	\$11,179,000	\$31,278,000	\$177,398,000	\$219,855,000
New York	\$77,754,000	\$362,800,000	\$1,480,049,000	\$1,920,603,000
North Carolina	\$21,851,000	\$107,122,000	\$502,948,000	\$631,921,000

Table 2—Continued.

State	Medical Care	Work Loss & Other Costs	Pain & Lost Quality of Life	Total
North Dakota	\$669,000	\$1,548,000	\$16,841,000	\$19,058,000
Ohio	\$35,685,000	\$125,278,000	\$853,443,000	\$1,014,406,000
Oklahoma	\$11,614,000	\$48,433,000	\$248,216,000	\$308,263,000
Oregon	\$12,570,000	\$36,661,000	\$250,344,000	\$299,575,000
Pennsylvania	\$21,890,000	\$129,978,000	\$614,628,000	\$766,496,000
Rhode Island	\$3,462,000	\$9,506,000	\$61,305,000	\$74,273,000
South Carolina	\$18,530,000	\$69,362,000	\$369,564,000	\$457,456,000
South Dakota	\$1,897,000	\$3,887,000	\$41,056,000	\$46,840,000
Tennessee	\$18,506,000	\$90,712,000	\$462,798,000	\$572,016,000
Texas	\$78,536,000	\$320,802,000	\$1,753,506,000	\$2,152,844,000
Utah	\$4,871,000	\$11,099,000	\$84,930,000	\$100,900,000
Vermont	\$1,162,000	\$2,718,000	\$26,449,000	\$30,329,000
Virginia	\$14,034,000	\$80,621,000	\$388,956,000	\$483,611,000
Washington	\$29,667,000	\$72,568,000	\$578,787,000	\$681,022,000
West Virginia	\$1,918,000	\$9,242,000	\$48,461,000	\$59,621,000
Wisconsin	\$13,343,000	\$46,933,000	\$295,667,000	\$355,943,000
Wyoming	\$1,226,000	\$3,447,000	\$28,490,000	\$33,163,000
<b>USA</b>	<b>\$1,079,827,000</b>	<b>\$4,596,925,000</b>	<b>\$23,690,761,000</b>	<b>\$29,367,513,000</b>

**Table 3. Costs of Alcohol Use by Youth\*\*  
by State (in 1998 dollars)**

State	Medical Care	Work Loss & Other Costs	Pain & Lost Quality of Life	Total
Alabama	\$28,365,900	\$237,191,700	\$626,150,700	\$891,708,300
Alaska	\$10,517,400	\$31,110,900	\$471,295,400	\$512,923,700
Arizona	\$40,255,000	\$205,144,000	\$699,430,800	\$944,829,800
Arkansas	\$8,124,800	\$93,862,600	\$260,313,800	\$362,301,200
California	\$283,781,300	\$1,354,698,500	\$4,918,711,300	\$6,557,191,100
Colorado	\$49,709,300	\$174,115,500	\$670,860,000	\$894,684,800
Connecticut	\$16,910,000	\$99,355,700	\$367,069,000	\$483,334,700
Delaware	\$8,040,800	\$24,519,400	\$148,282,900	\$180,843,100
District of Columbia	\$28,285,100	\$152,390,300	\$423,730,200	\$604,405,600
Florida	\$155,538,500	\$650,953,100	\$2,713,191,300	\$3,519,682,900
Georgia	\$51,056,900	\$260,900,700	\$968,288,000	\$1,280,245,600
Hawaii	\$39,969,900	\$110,620,600	\$299,981,200	\$450,571,700
Idaho	\$7,489,000	\$36,414,400	\$135,977,500	\$179,880,900
Illinois	\$107,060,200	\$554,832,300	\$1,996,814,900	\$2,658,707,400
Indiana	\$34,261,800	\$187,882,700	\$645,295,400	\$867,439,900
Iowa	\$14,775,900	\$71,963,100	\$243,950,900	\$330,689,900
Kansas	\$14,312,200	\$82,023,600	\$291,875,300	\$388,211,100
Kentucky	\$21,515,900	\$118,763,300	\$396,449,800	\$536,729,000
Louisiana	\$57,774,900	\$226,945,400	\$748,486,600	\$1,033,206,900
Maine	\$18,550,400	\$52,259,800	\$189,695,600	\$260,505,800
Maryland	\$37,673,500	\$230,702,700	\$798,758,800	\$1,067,135,000
Massachusetts	\$39,478,900	\$158,950,200	\$735,438,500	\$933,867,600
Michigan	\$88,314,700	\$385,990,900	\$1,689,377,300	\$2,163,682,900
Minnesota	\$31,422,200	\$119,147,800	\$625,733,400	\$776,303,400
Mississippi	\$34,901,700	\$151,968,000	\$434,515,600	\$621,385,300
Missouri	\$40,348,800	\$227,462,100	\$781,743,800	\$1,049,554,700
Montana	\$6,676,800	\$30,781,800	\$93,566,600	\$131,025,200
Nebraska	\$8,639,800	\$43,641,400	\$144,140,900	\$196,422,100
Nevada	\$21,496,400	\$105,798,000	\$434,025,200	\$561,319,600
New Hampshire	\$5,429,100	\$20,633,000	\$114,101,500	\$140,163,600
New Jersey	\$68,370,400	\$233,215,900	\$1,009,024,800	\$1,310,611,100
New Mexico	\$23,991,400	\$95,940,500	\$329,818,900	\$449,750,800
New York	\$126,365,400	\$608,142,000	\$2,016,332,300	\$2,750,839,700
North Carolina	\$53,785,000	\$266,418,700	\$858,686,000	\$1,178,889,700

Table 3—Continued.

State	Medical Care	Work Loss & Other Costs	Pain & Lost Quality of Life	Total
North Dakota	\$2,880,300	\$15,883,900	\$40,038,500	\$58,802,700
Ohio	\$86,763,400	\$372,946,600	\$1,300,885,600	\$1,760,595,600
Oklahoma	\$23,706,400	\$115,805,300	\$423,774,900	\$563,286,600
Oregon	\$45,609,400	\$144,072,100	\$579,942,900	\$769,624,400
Pennsylvania	\$59,714,500	\$325,746,000	\$1,036,643,100	\$1,422,103,600
Rhode Island	\$35,656,400	\$82,098,300	\$318,743,000	\$436,497,700
South Carolina	\$29,230,000	\$156,980,500	\$557,038,800	\$743,249,300
South Dakota	\$5,264,100	\$17,774,600	\$82,278,300	\$105,317,000
Tennessee	\$56,883,300	\$249,161,700	\$847,004,400	\$1,153,049,400
Texas	\$167,900,400	\$854,197,400	\$3,091,642,500	\$4,113,740,300
Utah	\$36,248,700	\$93,600,900	\$244,472,100	\$374,321,700
Vermont	\$3,067,300	\$12,676,000	\$50,224,200	\$65,967,500
Virginia	\$38,500,600	\$201,622,300	\$687,096,600	\$927,219,500
Washington	\$50,878,200	\$192,961,300	\$938,618,900	\$1,182,458,400
West Virginia	\$7,522,600	\$38,045,200	\$129,624,900	\$175,192,700
Wisconsin	\$35,000,000	\$152,160,800	\$549,733,900	\$736,894,700
Wyoming	\$3,412,000	\$17,651,100	\$68,484,100	\$89,547,200
<b>USA</b>	<b>\$2,271,426,900</b>	<b>\$10,448,124,600</b>	<b>\$38,227,360,900</b>	<b>\$50,946,912,400</b>

*\*\* Does not include a break down of any state's portion of the \$1.84 billion national cost of treatment of substance abuse, alcohol poisoning or fetal alcohol syndrome*



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