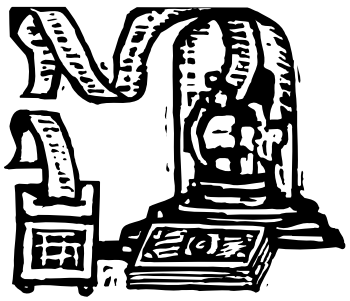
Texas Commission on
Alcohol and Drug Abuse

Economic Costs of Alcohol and Drug Abuse in Texas: 1997 Update



Economic Costs of Alcohol and Drug Abuse in Texas: 1997 Update

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Economic Costs of Alcohol and Drug Abuse in Texas: 1997 Update

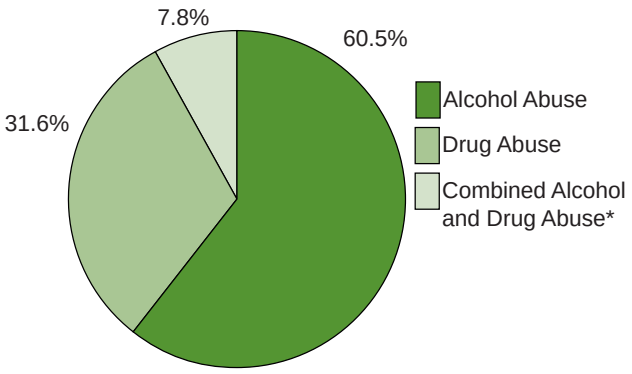
The adverse health and social consequences of substance abuse extensively increased costs to the state. The total economic costs of alcohol and drug abuse in Texas were estimated at $19.3 billion in 1997, the most recent year for which data are available. More than 60 percent of the costs resulted from lost productivity ($8.1 billion) and premature death ($3.9 billion) caused by substance abuse. On a per capita basis, the 1997 amount translates to $1,001 per man, woman, and child in the state.

COST ESTIMATES FOR 1997

Prior to this study, the most recent indepth estimates of costs of substance abuse in Texas were based on data for 1989.[1] In 1989, alcohol and drug abuse cost an estimated $12.6 billion and in 1994 an estimated $17.0 billion (Appendix A). This report will provide an update of the costs of alcohol and drug abuse for 1997. The 1997 costs were estimated by multiplying the percent changes in various socioeconomic factors (Appendix B) from 1989 to 1997 by the 1989 cost estimates.

The total economic costs of alcohol and drug abuse in Texas were estimated at $19.3 billion for 1997 (Table 1). By category, alcohol abuse cost $11.7 billion (60.5 percent), illicit drug abuse cost $6.1 billion (31.6 percent), and the combined category of "alcohol and drug abuse" cost $1.5 billion (7.8 percent), as shown in Figure 1. The combined "alcohol and drug abuse" category includes costs due to individuals having both alcohol and

Figure 1. Alcohol and Drug Abuse Costs in Texas by Disorder, 1997 (Total $19.3 Billion)



*Costs in this category can not be separated into primary drug of abuse

Table 1. Economic Costs of Alcohol and Drug Abuse in Texas, 1997[a]

Type of Cost	Amount ($ in millions) Total	Alcohol Abuse	Drug Abuse	Combined Alc & Drug Abuse[b]
Total	$19,323	$11,697	$6,111	$1,514
Core Costs	$13,470	$9,275	$2,781	$1,414
Treatment	$1,510	$468	$1,042	–
Morbidity (lost productivity)	$8,067	$6,119	$534	$1,414
Mortality (premature death)[c]	$3,893	$2,688	$1,205	–
Other Related Costs	$4,940	$1,826	$3,113	$0.6
Direct Costs	$2,870	$1,145	$1,725	$0.6
Crime	$2,393	$687	$1,706	–
Motor Vehicle Crashes	$427	$409	$17	$0.6
Social Welfare Administration	$16	$15	$1	–
Fire Destruction	$34	$34	–	–
Indirect Costs	$2,070	$681	$1,388	–
Victims of Crime	$257	$103	$154	–
Incarceration	$1,468	$579	$889	–
Criminal Careers	$345	–	$345	–
Special Disease Groups	$913	$596	$217	$100
AIDS (IVDU)	$160	–	$160	–
Hepatitis B (IVDU)	$14	–	$14	–
Perinatal Substance Exposure	$739	$596	$43	$100

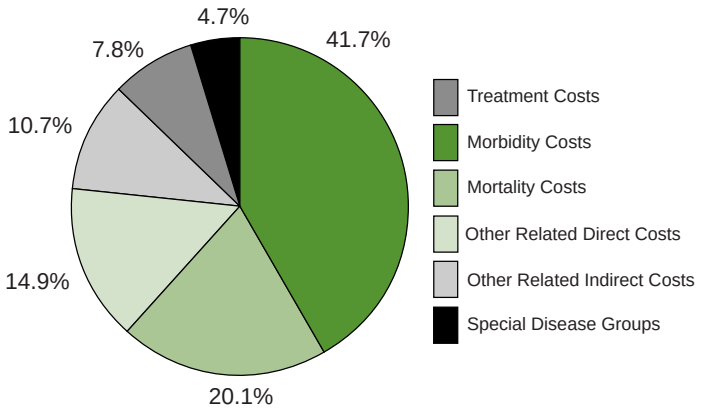
Type of Cost	Percent Distribution (%) Total	Alcohol Abuse	Drug Abuse	Combined Alc&Drug Abuse[b]
Total	100.0	100.0	100.0	100.0
Core Costs	69.7	79.3	45.5	93.4
Treatment	7.8	4.0	17.0	–
Morbidity (lost productivity)	41.7	52.3	8.7	93.4
Mortality (premature death)[c]	20.1	23.0	19.7	–
Other Related Costs	25.6	15.6	50.9	0.0
Direct Costs (crime, MV crashes, social welfare adm., fire destruction)	14.9	9.8	28.2	0.0
Indirect Costs (victims of crime, incarceration criminal careers)	10.7	5.8	22.7	–
Special Disease Groups	4.7	5.1	3.6	6.6
AIDS (IVDU)	0.8	–	2.6	–
Hepatitis B (IVDU)	0.1	–	0.2	–
Perinatal Substance Exposure	3.8	5.1	0.7	6.6

[a] Based on adjustment factors applied to 1989 updates and estimates.
[b] Costs in this category can not be separated into primary drug abuse.
[c] Discounted at 4 percent.

illicit drug problems, and cannot be separated into either alcohol abuse or drug abuse alone.

Of the total economic costs of $19.3 billion in 1997, morbidity costs (the value of lost productivity) accounted for the largest share of the costs at 41.7 percent, while mortality costs (the loss of future lifetime earnings due to premature death) accounted for 20.1 percent (Figure 2). Other related direct costs (crime expenditures, motor vehicle crashes, social welfare administration, and fire damage) accounted for 14.9 percent, and other related indirect costs (victims of crime, incarceration, and criminal careers) accounted for 10.7 percent. The distribution by category type also shows that treatment costs comprised 7.8 percent of the total and costs for special disease groups, 4.7 percent.

Figure 2. Alcohol and Drug Abuse Costs in Texas by Cost Category, 1997 (Total $19.3 Billion)



MAGNITUDE OF THE COSTS AND EXTENT OF THE PROBLEM

Treatment costs of alcohol and drug abuse in Texas amounted to $1.5 billion in 1997, about two times that of the 1989 estimate ($0.7 billion). The large increase in treatment costs was a result of the increase in the number of clients entering alcohol and drug treatment programs and inflation of medical care costs. Based on the national Uniform Facility Data Set (UFDS) Survey,[2] the estimate of annual unduplicated clients in Texas alcohol and drug treatment units was 195,678 (67,118 for alcohol and 128,560 for drug) in 1997 versus 143,272 (60,348 for alcohol and 82,924 for drug) in 1989. Three kinds of adjustments were made to obtain the number of unduplicated clients: adjustments for survey item non-response, adjustments for program non-response, and adjustments to control for client relapse to treatment.[3]

The morbidity costs resulting from reduced productivity were estimated at $8.1 billion in 1997, compared to $5.6 billion in 1989 and $7.0 billion in 1994 (Figure 3). Both growth of the civilian labor force and wage inflation contributed to the increase in morbidity costs.

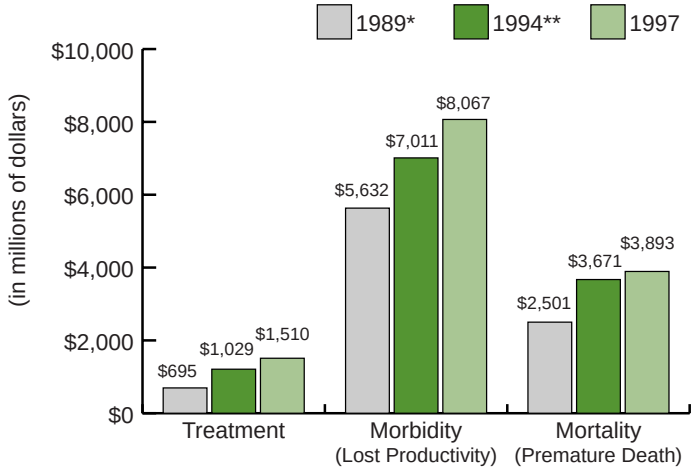
The 1997 costs of alcohol- and drug-related deaths amounted to $3.9 billion, which is 56 percent higher than in 1989. These mortality costs represented the present value of forgone earnings

discounted at 4 percent. In 1989, an estimated 9,746 Texans died from alcohol- and drug-related causes, 7.8 percent of total resident deaths. By 1996,[4] the estimated number of alcohol- and drug-related deaths increased to 12,702, about 9.1 percent of total resident deaths. Four-fifths of these deaths were caused by alcohol abuse and one-fifth by drug abuse. An estimated 357,000 years of potential life were lost[5] due to premature mortality of alcohol and drug abuse in 1996.

Other related costs of substance abuse were estimated at $4.9 billion for Texas in 1997. Within this category, direct costs (for which actual payments are made) and indirect costs (for which resources such as income are lost) were $2.9 billion and $2.1 billion, respectively. Of the total other related direct costs, crime costs accounted for $2.4 billion, with motor vehicle crashes, social welfare program administration, and fire destruction accounting for the remaining $0.5 billion. Crime costs associated with alcohol and drug abuse rose 81 percent between 1989 and 1997. The increased crime costs majorly reflected the higher direct expenditures for state and local criminal justice systems over the past eight years. Public safety data also showed that in Texas about 37-42 percent of fatalities and 9-14 percent of non-fatal injuries in motor vehicle accidents involved alcohol and drugs in recent years.

Among the total other related indirect costs, $0.3 billion accounted for the productivity losses of criminal victimization, $1.5 billion for the productivity losses of individuals incarcerated as a result of criminal offense, and $0.3 billion for the opportunity costs[6] of time for persons engaged in criminal careers rather than legal employment. Compared to 1989, the incarceration costs related to substance abuse increased more than three times in 1997. Much of the increase in incarceration costs was attributable to the increased number of incarcerees in state prisons and local jails[7] between 1989 and 1997. Prevalence data from the *Texas Survey of Substance Use Among Adults*

Figure 3. Core Costs Related to Alcohol and Drug Abuse in Texas: 1989, 1994, and 1997



*Mortality costs were updated from the 1989 study.
**Treatment and mortality costs were updated from the 1994 study.

showed that an estimate of 65,000 adults aged 18 and over were considered to be past-month cocaine and/or heroin users in 1997.[8] It is estimated that about half of these current drug users who were not incarcerated would engage in crime to support their drug habits.

Three specific disease groups associated with substance abuse cost Texans $0.9 billion in 1997. Of this total, the costs of perinatal substance exposure comprised the largest amount—$0.7 billion. However, the costs for AIDS related to intravenous drug us (IVDU) tripled during the eight-year period, rising from $56 million in 1989 to $160 million in 1997. Contributing significantly to this increase were the growing number of Texas AIDS cases reported and the rising price index for medical care in recent years. Health data showed that Texas had a total of 2,594 reported AIDS cases in 1989, compared to 5,474 cases in 1994 and 4,704 cases in 1997.

ADJUSTMENT FACTORS AND DATA SOURCES

To provide more recent cost estimates than were given in the earlier study, a method was used which incorporated timely adjustments in the values based on a few factors that have known relationships to the cost estimates.[9] The adjustment factors for Texas are identified and presented in Appendix B. They include statewide data for health, the labor force, crime, public safety, and social welfare, as well as consumer price indexes in major markets. By multiplying the percent changes in adjustment factors from 1989 to 1997 by the 1989 cost estimates, the costs of alcohol and drug abuse for 1997 were obtained.

Different sets of adjustment factors were used for the different types of cost components. The rationale of this method is that between 1989 and 1997, proportional changes in the adjustment factors were related to proportional changes in the values of the cost components. Supposing the causal relationships of alcohol and drug abuse to their consequences have remained the same over time, two major adjustment factors — one to reflect real change in population and the other to reflect changes in prices and wages (inflation) — are specified to update estimates for most cost components. For example, the percent change in the number of persons comprising the civilian labor force and in average weekly earnings are used to update the morbidity costs, which are the costs of reduced productivity due to substance abuse.[10] Also, the percent change in the number of alcohol- and drug-related motor vehicle injuries and the transportation inflation rate are incorporated to update the costs of motor vehicle crashes.

The 1997 data were readily available from various sources and agencies for all adjustment factors (see Appendix B) except for the number of alcohol and drug abuse deaths, the alcohol-

and drug-related motor vehicle injuries, social welfare expenses, fire losses per capita, and resident births. In order to complete the information, the 1996 values of alcohol and drug abuse deaths, alcohol- and drug-related motor vehicle injuries, and total resident births were used for the current cost version. The social welfare expenses for 1997 were obtained by adjusting the inflation rates to the previous expenses.[11] Likewise, the 1995 figure for structural fire losses per capita was applied to the study.

CONCLUSION

This paper presents the 1997 update of economic costs of alcohol and drug abuse; that is, the economic burden resulting from health problems, incapacitation, premature death, crime, and motor vehicle crashes due to alcohol and drug abuse in Texas. It employs readily made adjustments for the most fundamental and significant changes without completely recalculating the costs. The updated estimates clearly show that the measurable economic costs of alcohol and drug abuse continue to be high for the state, which makes prioritizing substance abuse issues important for the future health of Texas residents. These findings challenge both the public and private sectors to work together towards solutions to minimize the economic burdens of substance abuse in Texas.

Endnotes

1 Liu, Liang Y. , *Economic Costs of Alcohol and Drug Abuse in Texas — 1989*, Austin, Texas: Texas Commission on Alcohol and Drug Abuse, April 1992.

2 UFDS is the only national census of specialty substance abuse (i.e., alcohol or other drugs) treatment facilities. Before 1995, the national survey was called National Drug and Alcoholism Treatment Unit Survey (NDATUS).

3 To adjust for survey item non-response, the imputed values were derived by regressing unduplicated clients on current clients. Then, the estimate of unduplicated clients was adjusted up. For example, in 1997, by 51.1 percent (computed as 100/66.2 percent, where 66.2 percent was the overall response rate in Texas) for program non-response. This estimate was then adjusted downward to account for clients who might receive multiple types of treatment and/or relapse in a year (assuming that about 75 percent of the cases reenter the same treatment program). On average, alcohol and drug clients had about 1.33 treatment admissions per year.

4 The most recent 1996 death data were used in the current cost study. The methodology for estimating the alcohol- and drug-related mortality in Texas has been revised since 1994. See *Current Trends in Substance Use, Texas 1996*, Austin, Texas: Texas Commission on Alcohol and Drug Abuse, 1996, pp. 167-168.

5 The number of years of potential life lost was measured by multiplying the number of deaths by the life expectancy in years per age and sex category. Life expectancy is the average number of years that a person can expect to live after a given age. Life expectancy data are based on vital statistics from Texas Department of Health.

6 Opportunity cost refers to the value of foregone benefits because the resource is not available for its best alternative use. In this case, it is the monetary value given to time misspent on criminal careers.

7 The total number of incarcerees in state prisons and local jails is the combination of (100 percent of total prison population) and (47.5 percent of total jail population). In order to calculate incarceration costs, the concept of person-years served must be employed. The calendar time served for state prisoners is 1 year and for local jail inmates, 0.475 year or 5.7 months.

8 *Texas Surveys of Substance Use Among Adults* were conducted by the Texas Commission on Alcohol and Drug Abuse in 1988, 1993, and 1996. The 1997 figure for cocaine/heroin users was estimated by multiplying the 1996 past-month cocaine/heroin prevalence rate by the 1997 adult population.

9 Harwood, H. J., Napolitano, D. M., Kristiansen, P. L., and J. J. Collins, *Economic Costs to Society of Alcohol and Drug Abuse and Mental Illness: 1980*, Research Triangle Park, North Carolina: Research Triangle Institute, June 1984.

10 The adjustment formula for the updated value of this example,

morbidity costs, can be: [MBC in 1997] = [MBC in 1989] x [CLF in 1997 / CLF in 1989] x [AWE in 1997 / AWE in 1989]; where MBC are morbidity costs of alcohol and drug abuse in Texas, CLF is the Texas civilian labor force, and AWE is Texans' average weekly earnings in the manufacturing sector.

[11] Social welfare expenses include OASDI payments, unemployment insurance, worker's compensation, public assistance, supplemental security income, food stamps, veterans pensions and rehabilitation, and so on. The years 1993, 1995, or 1996 are the most recent years for which these social welfare programs were available. The 1997 expenses were then adjusted by using the inflation rates correspondingly.

Appendix A: Economic Costs of Alcohol and Drug Abuse in Texas: 1989, 1994, and 1997

Type of Cost	1989 [a] ($ in millions)		1994 [b] ($ in millions)		1997 [c] ($ in millions)	1989-97 % change
Total	$12,639		$17,016		$19,323	52.9%
Core Costs	$8,829		$11,891		$13,470	52.6%
Treatment	$695		$1,209	*	$1,510	117.1%
Morbidity (lost productivity)	$5,632		$7,011		$8,067	43.2%
Mortality (premature death) [d]	$2,501	*	$3,671	*	$3,893	55.7%
Other Related Costs	$3,303		$4,297		$4,940	49.6%
Direct Costs	$1,703		$2,671		$2,870	68.5%
Crime	$1,323		$2,204	*	$2,393	80.8%
Motor Vehicle Crashes	$338		$424		$427	26.4%
Social Welfare Administration	$11		$15	*	$16	45.5%
Fire Destruction	$31	*	$30	*	$34	9.4%
Indirect Costs	$1,600		$1,626		$2,070	29.4%
Victims of Crime	$176		$267	*	$257	45.8%
Incarceration	$416		$1,002	*	$1,468	252.8%
Criminal Careers	$1,008	*	$356	*	$345	-65.7%
Special Disease Groups	$508		$828		$913	79.9%
AIDS (IVDU)	$56		$167	*	$160	184.9%
Hepatitis B (IVDU)	$14		$15		$14	5.6%
Perinatal Substance Exposure	$438		$646		$739	68.7%

[a] Liu, L. Y., *Economic Costs of Alcohol and Drug Abuse in Texas - 1989,* Austin, Texas: Texas Commission on Alcohol and Drug Abuse, April 1992.

[b] Liu, L. Y., *Economic Costs of Alcohol and Drug Abuse in Texas - 1994 Update*, Austin, Texas: Texas Commission on Alcohol and Drug Abuse, September 1995.

[c] Based on adjustment factors applied to 1989 updates and estimates.

[d] Discounted at 4 percent.

* Updated from 1989 and 1994 economic cost studies.

Appendix B: Adjustment Factors for Updating Cost Estimates of Alcohol and Drug Abuse

Cost Component	Adjustment Factor	Data Source
Treatment	• Number of Annual Unduplicated Clients in Alcohol and Drug Treatment Units, Texas	• Uniform Facility Data Set (UFDS) for Texas, SAMHSA, US Department of Health and Human Services
	• Consumer Price Index: Medical Care (1982-84=100)	• Bureau of Labor Statistics, US Department of Labor
Morbidity (Reduced Productivity)	• Texas Civilian Labor Force	• Labor Market Information Department, Texas Workforce Commission
	• Texas Manufacturing Average Weekly Earnings	• Labor Market Information Department, Texas Workforce Commission
Mortality (Premature Deaths)	• Number of Resident Deaths from Alcohol- and Drug- Related Causes by Age and Gender, Texas	• Bureau of Vital Statistics, Texas Department of Health; Analysis by Texas Commission on Alcohol and Drug Abuse
	• Texas Manufacturing Average Weekly Earnings	• Labor Market Information Department, Texas Workforce Commission
Crime	• Direct Expenditures for State and Local Justice System Activities by Type of Activity, Texas	• *Sourcebook of Criminal Justice Statistics,* Bureau of Justice Statistics, US Department of Justice
	• Anti-Drug Abuse Act Funds: Law Enforcement, Texas	• *Sourcebook of Criminal Justice Statistics,* Bureau of Justice Statistics, US Department of Justice
	• Value of Property Stolen by Type of Crime, Texas	• Uniform Crime Reporting Section, Texas Department of Public Safety
	• Ratio of Victimizations Resulting in Damage Losses and Theft Losses by Type of Crime	• *Criminal Victimization in the United States,* Bureau of Justice Statistics, US Department of Justice
	• Consumer Price Index: All Urban Consumers (1982-84=100)	• Bureau of Labor Statistics, US Department of Labor
Motor Vehicle Crashes	• Number of Alcohol and Drug-Related Motor Vehicle Injuries, Texas	• Accident Records Bureau, Texas Department of Public Safety; Analysis by Texas Commission on Alcohol and Drug Abuse
	• Consumer Price Index: Transportation (1982-84=100)	• Bureau of Labor Statistics, US Department of Labor
Social Welfare Administration	• Total Social Welfare Expenses, Texas (OASDI, Food Stamps, Workers' Compensation, Unemployment Insurance, Supplemental Security Income, etc.)	• *Statistical Abstract of the United States,* Bureau of the Census, US Department of Commerce
Fire Destruction	• Texas Total Population	• Texas Health and Human Services Commission
	• Structural Fire Losses Per Capita	• *Statistical Abstract of the United States,* Bureau of the Census, US Department of Commerce

Appendix B: Adjustment Factors (continued)

Cost Component	Adjustment Factor	Data Source
Victims of Crime	• Texas Known Offenses by Type of Crime	• Uniform Crime Reporting Section, Texas Department of Public Safety
	• Ratio of Victimizations and Known Offenses by Type of Crime	• *Criminal Victimization* and *Sourcebook of Criminal Justice Statistics*, Bureau of Justice Statistics, US Department of Justice
	• Average Loss of Time from Work Among Victimizations by Type of Crime	• *Criminal Victimization in the United States,* Bureau of Justice Statistics, US Department of Justice
	• Texas Manufacturing Average Weekly Earnings	• Labor Market Information Department, Texas Workforce Commission
Incarceration	• Texas Prison Population (On-Hand Inmates)	• Texas Department of Criminal Justice
	• Texas Jail Population (Convicted Felons in County Jails)	• Texas Commission on Jail Standards
	• Length of Sentence for Jail Inmates	• *Profile of Jail Inmates,* Bureau of Justice Statistics, US Department of Justice
	• Texas Manufacturing Average Weekly Earnings	• Labor Market Information Department, Texas Workforce Commission
Criminal Careers	• Texas Adult Population by Age and Gender	• Texas Health and Human Services Commission
	• Cocaine/Heroin Use Prevalence Among Texas Adults	• Texas Survey of Substance Use Among Adults, Texas Commission on Alcohol and Drug Abuse
	• Texas Prison Population (On-Hand Inmates)	• Texas Department of Criminal Justice
	• Texas Jail Population (Convicted Felons in County Jails)	• Texas Commission on Jail Standards
	• Length of Sentence for Jail Inmates	• *Profile of Jail Inmates*, Bureau of Justice Statistics, US Department of Justice
	• Texas Manufacturing Average Weekly Earnings	• Labor Market Information Department, Texas Workforce Commission
AIDS (IVDU)	• Number of AIDS Cases Reported, Texas	• HIV/STD Epidemiology Division, Texas Department of Health
	• Consumer Price Index: Medical Care (1982-84=100)	• Bureau of Labor Statistics, US Department of Labor
Hepatitis B (IVDU)	• Number of Hepatitis B Cases Reported, Texas	• Infectious Disease Epidemiology and Surveillance Division, Texas Department of Health
	• Consumer Price Index: Medical Care (1982-84=100)	• Bureau of Labor Statistics, US Department of Labor
Perinatal Substance Exposure	• Number of Resident Births, Texas	• Bureau of Vital Statistics, Texas Department of Health
	• Consumer Price Index: Medical Care (1982-84=100)	• Bureau of Labor Statistics, US Department of Labor