TCADA Research Brief

Economic Costs of Alcohol and Drug Abuse in Texas: 1994 Update

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Economic Costs of Alcohol and Drug Abuse in Texas: 1994 Update

Substance abuse continues to be one of the major public health problems in Texas. The consequences of alcohol and drug abuse cost the state billions of dollars annually in health care costs, reduced or lost productivity, and crime-related costs. The estimated cost of substance abuse in Texas has risen 37 percent from an estimated $12.6 billion in 1989 to $17.2 billion in 1994. On a per capita basis, the 1994 amount translates to $925 per man, woman, and child in the state.

Several years ago, the Texas Commission on Alcohol and Drug Abuse (TCADA) published an in-depth report on the total economic costs of alcohol and drug abuse in Texas for the year 1989.[1] This paper updates the costs presented in *Economic Costs of Alcohol and Drug Abuse in Texas - 1989* and outlines the approach used to do so.

COST ESTIMATES FOR 1994

The total economic costs of alcohol and drug abuse in Texas were estimated at $17.2 billion for 1994, an increase of 37 percent during the five-year period, 1989 to 1994 (see Table 1). By type of cost category, the total costs included core costs (treatment, morbidity, and mortality), other related costs (crime, motor vehicle accidents, social welfare administration, fire damage, victims of crime, incarceration, and crime careers), and costs for special disease groups (AIDS, hepatitis B, and drug-exposed infants).

Magnitude of the Costs

Alcohol and drug abuse treatment costs in Texas amounted to $1.7 billion in 1994, almost two and a half times that of the 1989 estimate (see Figure 1). The large increase in treatment costs was a result of the increase in the number of clients entering alcohol and drug treatment programs and medical care cost inflation. The morbidity costs resulting from reduced productivity were estimated at $7.0 billion in 1994, which is 25 percent higher than in 1989. Both growth of the labor force and wage inflation contributed to the increase in morbidity costs. The 1994 costs of alcohol- and drug-related deaths amounted to $2.9 billion, compared to $2.4 billion in 1989. These mortality costs represent the present value of forgone earnings discounted at 4 percent.

Other related substance abuse costs in Texas were estimated at $4.8 billion for 1994. Within this category, direct costs (for which actual payments are made) and indirect costs (for which resources such as income are lost) shared an equal amount of $2.4 billion. Of the total other related direct costs, crime costs accounted for $2.0 billion, with motor vehicle crashes, social welfare program administration, and fire destruction accounting for the remaining

$0.4 billion. Crime costs rose 48 percent between 1989 and 1994. Increased crime expenditures reflected both the overall rate of inflation in the economy and the higher number of Texas arrests.

Among the total other related indirect costs, $0.2 billion represents the productivity losses of criminal victimization, $0.9 billion accounts for the productivity losses of individuals incarcerated as a result of criminal offense, and $1.3 billion are the estimated opportunity costs of time for persons engaged in crime careers rather than legal employment. Compared with 1989, the costs for victims of crime decreased, whereas the incarceration costs doubled in 1994. The decrease in costs of criminal victimization resulted from the large decline of Texas crime-index offenses during 1989-1994, which offsets the wage inflation. On the other hand, much of the increase in incarceration costs was attributable to the extended number of inmates in state prisons and local jails over the five-year period.[2]

Three specific disease groups associated with substance abuse cost Texans $0.8 billion in 1994. Of this total, the costs of perinatal substance exposure comprised the largest amount—$0.6 billion. However, the costs for IVDU-related AIDS tripled during the

Table 1.
Economic Costs of Alcohol and Drug Abuse in Texas: 1989 and 1994

Type of Cost	1989 [a] ($ in millions)	1994 [b] ($ in millions)	% Change
Total	$12,590	$17,243	37.0%
Core Costs	$8,710	$11,622	33.4%
Treatment	$695	$1,694	143.6%
Morbidity (lost productivity)	$5,632	$7,011	24.5%
Mortality (premature deaths) [c]	$2,383	$2,918	22.4%
Other Related Costs	$3,372	$4,787	42.0%
Direct Costs	$1,705	$2,434	42.7%
Crime	$1,323	$1,961	48.2%
Motor Vehicle Crashes	$338	$424	25.4%
Social Welfare Administration	$11	$16	43.4%
Fire Destruction	$33	$33	1.0%
Indirect Costs	$1,667	$2,354	41.2%
Victims of Crime	$176	$158	-10.4%
Incarceration	$416	$908	118.3%
Crime Careers	$1,075	$1,288	19.8%
Special Disease Groups	$508	$833	64.2%
AIDS (-IVDU)	$56	$173	207.5%
Hepatitis B (-IVDU)	$14	$15	8.5%
Perinatal Substance Exposure	$438	$646	47.5%

[a] Liu, L. Y., *Economic Costs of Alcohol and Drug Abuse in Texas - 1989,* Austin, Tx.: Texas Commission on Alcohol and Drug Abuse, April 1992.
[b] Based on adjustment factors applied to 1989 estimates.
[c] Discounted at 4 percent.

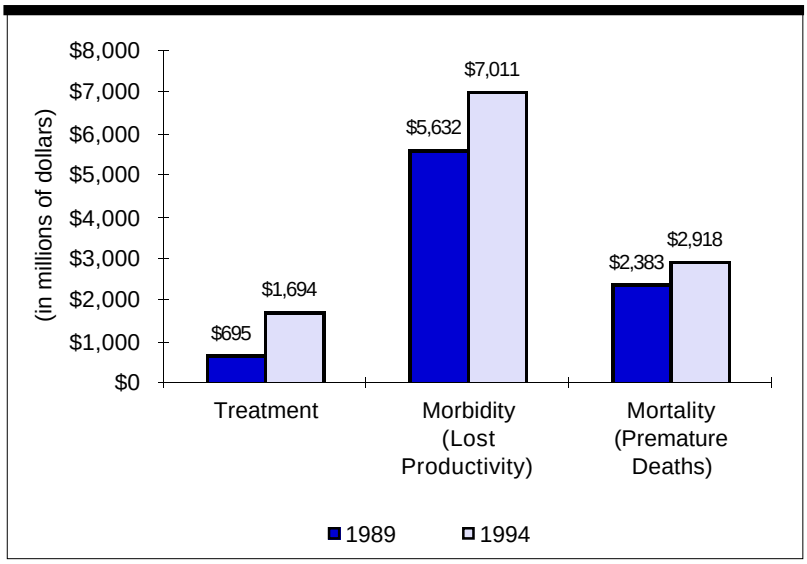

Figure 1.
Core Costs (Treatment, Morbidity, and Mortality) Related to Alcohol and Drug Abuse in Texas for the Years 1989 and 1994

five-year period, rising from $56 million in 1989 to $173 million in 1994. Contributing significantly to this increase were the growing number of Texas AIDS cases reported and the rising medical care price index in recent years.

Percent Distribution of the Costs

Of the total economic cost estimate of $17.2 billion for 1994, morbidity costs account for the largest share (40.7 percent), while mortality costs account for 16.9 percent, other related direct costs account for 14.1 percent, and other related indirect costs account for 13.7 percent (Figure 2). The distribution by category type also shows that treatment costs comprise 9.8 percent of the total and costs for special disease groups, 4.8 percent.

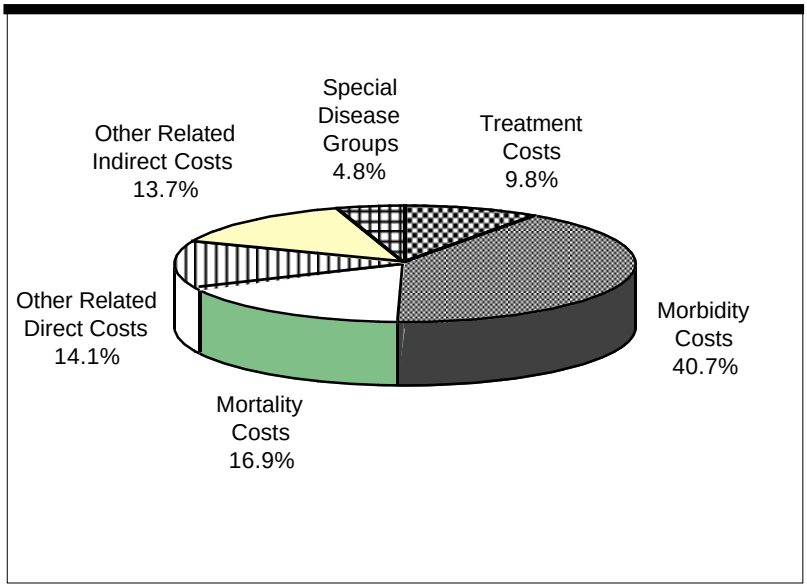

Figure 2.
Breakdown of Costs Related to Alcohol and Drug Abuse in Texas: 1994

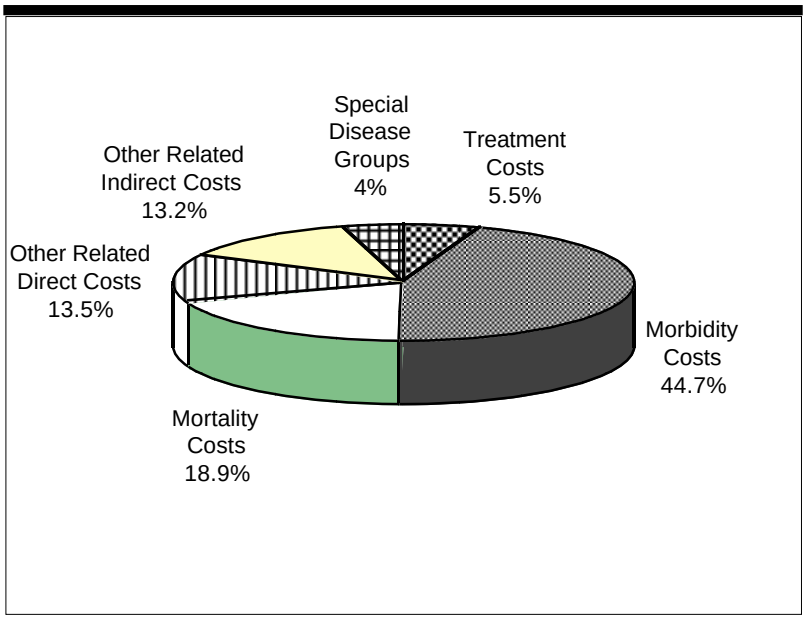

Figure 3.
Breakdown of Costs Related to Alcohol and Drug Abuse in Texas: 1989

The distribution by type of cost in 1994 is comparable to that in 1989 (see Figure 3). Yet, the most noticeable variation in the distribution over the five years would be the treatment costs and morbidity costs. The proportion of treatment costs rose from 5.5 percent in 1989 to nearly 10 percent in 1994, while the proportion of morbidity costs decreased from 44.7 percent in 1989 to 40.7 percent in 1994.

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.[3] The adjustment factors for Texas are identified and presented in Appendix A. 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 simply multiplying the percent changes in adjustment factors from 1989 to 1994 by the 1989 cost estimates, the costs of alcohol and drug abuse for 1994 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 1994, 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 each cost component. 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.[4] Also, the percent change in number of injuries due to alcohol- and drug-related motor vehicle accidents and the transportation inflation rate are incorporated to update the costs of motor vehicle crashes.

The 1994 data were readily available from various sources and agencies for all adjustment factors (see Appendix A) except for the number of treatment clients, alcohol and drug abuse deaths, social welfare expenses, and fire

losses per capita. In order to complete the information, the 1994 figure for the alcohol and drug treatment clients was imputed by using 1993 values.[5] The social welfare expenses for 1994 were obtained by adjusting the inflation rates to the previous expenses.[6] Likewise, the 1993 value of alcohol and drug abuse deaths and the 1992 value of fire losses per capita were used for the current cost revision.

SUMMARY

This paper presents a simple update of the economic costs of alcohol and drug abuse, i.e., the economic burden resulting from health problems, incapacitation, premature death, crime, and motor vehicle crashes due to alcohol and drug abuse in Texas in 1994. It employs readily made adjustments for the most fundamental 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.

ENDNOTES

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

2 The total number of incarcerees in state prisons and local jails is the combination of (100 percent of total prison population) and (40 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 about 1 year and for local jail inmates, 0.4 year or 4.8 months.

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

4 The adjustment formula for the updated value of this example, morbidity costs, can be:

(MBC in 1994) = (MBC in 1989) X (CLF in 1994/CLF in 1989) X (AWE in 1994/AWE in 1989);

where,

MBC are morbidity costs of alcohol and drug abuse in Texas, CLF is Texas civilian labor force, and AWE is Texas average weekly earnings in the manufacturing sector.

5 1993 is the most recent year that the information of 'annual unduplicated client count' is available from National Drug and Alcoholism Treatment Units Survey (NDATUS). The imputation for 1994 clients is to apply the number of 1993 treatment clients per 100,000 population in Texas to the 1994 Texas population.

6 Social welfare expenses include OASDI payments, unemployment insurance, workers' compensation, public assistance, supplemental security income, food stamps, veterans' pensions and rehabilitation, and so on. 1991, 1992, or 1993 is the most recent year these social welfare programs available. The 1994 expenses are, then, adjusted by using the inflation rates correspondingly.

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

COST COMPONENT	ADJUSTMENT FACTOR	DATA SOURCE
Treatment	Number of Clients in Alcohol and Drug Treatment Programs, Texas Consumer Price Index: Medical Care (1982-84=100)	National Drug and Alcoholism Treatment Unit Survey (NDATUS) for Texas *Monthly Labor Review*
Morbidity (Reduced Productivity)	Texas Civilian Labor Force Texas Manufacturing Average Weekly Earnings	Texas Employment Commission *Texas Economic Indicators*
Mortality (Premature Deaths)	Texas Alcohol and Drug Abuse Deaths Texas Manufacturing Average Weekly Earnings	TCADA analyzed Texas Department of Health statistics to get figures *Texas Economic Indicators*
Crime	Number of Arrests, Texas Consumer Price Index: All Urban Consumers (1982-84=100)	Texas Department of Public Safety *Monthly Labor Review*
Motor Vehicle Crashes	Number of Alcohol and Drug-Related Motor Vehicle Injuries, Texas Consumer Price Index: Transportation (1982-84=100)	TCADA analyzed Texas Department of Public Safety statistics to get figures *Monthly Labor Review*
Social Welfare Administration	Total Social Welfare Expenses, Texas (OASDI, Food Stamps, Workers' Compensation, Unemployment Insurance, Supplemental Security Income, and etc.)	*Statistical Abstract of the United States*
Fire Destruction	Texas Total Population Fire Losses Per Capita, Texas	Texas Department of Health *Statistical Abstract of the United States*
Victims of Crime	Texas Known Offenses for Selected Crimes Texas Manufacturing Average Weekly Earnings	Texas Department of Public Safety *Texas Economic Indicators*
Incarceration	Texas Prison Population (On-Hand Inmates) Texas Jail Population (Convicted Felons in County Jails) Texas Manufacturing Average Weekly Earnings	Texas Department of Criminal Justice Texas Commission on Jail Standards *Texas Economic Indicators*
Crime Careers	Texas Adult Population (Age 18+) Texas Manufacturing Average Weekly Earnings	Texas Department of Health *Texas Economic Indicators*
AIDS (-IVDU)	Number of AIDS Cases Reported, Texas Consumer Price Index: Medical Care (1982-84=100)	Texas Department of Health *Monthly Labor Review*
Hepatitis B (-IVDU)	Number of Hepatitis B Cases, Texas Consumer Price Index: Medical Care (1982-84=100)	Texas Department of Health *Monthly Labor Review*
Perinatal Substance Exposure	Number of Births, Texas Consumer Price Index: Medical Care (1982-84=100)	Texas Department of Health *Monthly Labor Review*