



Everyone Pays

*... a study of the fiscal impacts ...
of those who abuse alcohol and use illegal drugs*

Everyone Pays

This analysis is sponsored by the Governor's Task Force on Substance Abuse. It calculates estimates of the 1996 public and private expenditures in Oklahoma that are caused by substance abusers. It also estimates the impact upon the Oklahoma economy because of the resulting lost productivity.

This analysis has been prepared for the Governor's Task Force on Substance Abuse by a collaborative workgroup convened by the Oklahoma Academy for State Goals and coordinated by the Oklahoma State University Center for Health Policy Research.

The workgroup included research entities from Oklahoma State University Bureau of Social Research and the University of Oklahoma Health Sciences Center College of Public Health. Additional staff support for the Task Force activities was provided by faculty and students from the University of Central Oklahoma. The accompanying video was produced by the Office of Communications of the Oklahoma State University College of Osteopathic Medicine.

Supplemental information may be found in the study produced by the Oklahoma Department of Mental Health and Substance Abuse Services for this Governor's Task Force. That analysis provides contemporary information on state resources, maps, trends, risk factors, and services. The appendices include a literature review of societal costs of substance abuse and other data.

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Table of Contents

	EXECUTIVE SUMMARY	4
	Overall Summary Cost Table	5
Section 1	HEALTH CARE	11
	Hospital Costs	12
	Mental Health Systems	14
	Indian Health Service	15
	Fetal Alcohol Syndrome	15
Section 2	SOCIAL SERVICES	17
	Temp Assist /Needy Family (AFDC)	18
	Disability Payments	18
	Supplemental Social Security	19
	Food Stamps	20
	Private Charity	20
	Foster Care	20
	Domestic Violence	21
	Children's Protective Services	21
	Emergency Shelters	21
	Housing (AIDS)	22
	Housing (Mental Ill/Chem Abuse)	22
	Juvenile Corrections (State Custody)	23
	Juvenile Corrections (Detention)	23
	Substance Abuse Prevention	24
	Special Education	24
	Family Court	25
	Employment Training	25
Section 3	CRIMINAL JUSTICE	27
	Law Enforcement (State/Local)	28
	Law Enforcement (Federal)	28
	Adult Jails/Prisons	28
	State Criminal Courts	29
	Housing Authority	30
	Prosecution (District Attorneys)	30
	Prosecution (U.S. Attorneys)	30
	Indigent Defense	31
	Parole/Probation	31
	Victims (Motor Vehicles)	32
	Victims (Crime)	32
Section 4	PRIVATE BUSINESS	34
	Security	35
	Insurance Protection	35
	Worker's Compensation	35
Section 5	PROPERTY LOSS	37
	Stolen Property	38
	Fire Damage	38
	Homeowners Insurance	38
	State Parks	38
Section 6	LOST PRODUCTIVITY	40
	Alcohol	41
	Illegal Drugs	42
	Non-Employment	43
	Fetal Alcohol Syndrome	43
	Premature Death	44
Section 7	APPENDICES	46
	References	47
	Productivity Formulas	48
	Tables 1-9	49
Section 8	ACCOMPANYING 35mm SLIDES	53



Executive Summary

*... a study of the fiscal impacts of those who abuse alcohol and use illegal drugs ...
for the State of Oklahoma for 1996*



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Summary by Source of 1996 Expenditure, State of Oklahoma



Executive Summary

Introduction

The Governor's Task Force on Substance Abuse has been formed to advise Governor Keating concerning responsible public policy for Oklahoma. The Task Force leadership approached The Oklahoma Academy for State Goals to conduct an estimate of the costs of alcohol and illegal substance abuse in the state. The Academy formed a work group of researchers from Oklahoma State University and the University of Oklahoma. The OSU group was from the school's Bureau for Social Research and the Center for Health Policy Research. The OU representation was from the Department of Health Administration of the College of Public Health.

Scope

The Workgroup was requested to parallel a cost identification methodology published by the Center on Addiction and Substance Abuse (CASA) at Columbia University. The CASA study took several years to complete and was backed by significant research funding. The Oklahoma workgroup study was time-limited to 5 months, including planning, and the budget was limited.

Any study of substance abuse costs represent estimates. Some estimates are more complete than others. Various studies represent different cost perspectives. This study used the CASA model as a starting point, but used more direct costs when they could be identified.

Exclusion of Tobacco

The Oklahoma study differs from many others in that tobacco costs have been intentionally excluded. This exclusion was pursued for several reasons. The first is that costs related to tobacco use require many soft and questionable assumptions concerning primary and contributive causes and effects. More importantly, it was felt that any valid cost finding would require the computations of offsetting tax revenues and foregone public benefits due to premature death. These offsets were well beyond the scope and resources of this study. And finally, there is no clear consensus on the definition of the abuse of a legal substance as there is with alcohol. For these reasons, we encourage a separate study for those who must approximate the net costs of tobacco to society.

Loss of Productivity Calculations

The adverse economic effects of substance abuse are often masked by other life variables. To pretend that there exists a definitive and universal cost finding methodology for the impacts of substance abuse is to be disingenuous. To pretend that contemporary society does not mask adverse effects (for insurance or confidentiality purpose) caused by substance abuse is to be naive. And we suggest that any mega-resources appropriated to develop methodologies and data bases that precisely measure all calculated effects of substance abuse may be wasteful. As an acquaintance once said, "it may be like counting telephone poles. One may be totally accurate, but for what greater purpose?"

The most difficult cost to estimate is that of "lost productivity." This requires an extensive linear set of assumptions about the economy, employability, wage levels, earnings potential, value of work outside the labor force ... and many others. Even so, a study such as this must apply standard cost finding methodologies as appropriately as possible. Regardless of cash expended on these problems, the loss of productivity is likely to be as much or greater. And its effects are seen on the overall state economy, not within state expenditures.

Other studies, including the Columbia University CASA analysis, value lost productivity by assuming a percentage of people would be employed at a low wage. This Oklahoma analysis uses the "human capital" estimations which use higher employment and earnings estimates.



Executive Summary

Principles and Overview

There are some who may argue that the use of drugs is a “victimless” crime. And that if others choose to use drugs it doesn’t impact the rest of society. That would be true if family, friends, and taxpayers were not considered! Abusers of alcohol and illegal substances (drugs) write “checks” for almost a third of a billion dollars against the Oklahoma treasury ... and for much more against the federal government, private business and overall economy.

The costs of substance abuse to Oklahoma have several definitions and layers of complexity. In the overview, the costs are more than society should tolerate ... and much more than many citizens think. There are several types of costs that are of interest. They are:

- The direct costs to Oklahoma taxpayers and state government.
- The direct costs to all government functions.
- The costs to private business.
- And finally ... the overall impact upon the state economy.

Each of these costs has a different public policy meaning. Each cost has a separate calculation. Regardless of the costs that are calculated, they are always estimates. Some are more precise than others. And none calculate the adverse effects upon individuals, family or friends.

Federal Costs

The major costs related to health care and social services are fairly easy to quantify. However, this analysis has been unsuccessful in identifying the myriad of public safety/law enforcement costs. Selected costs were included but it is assumed that the federal costs are somewhat underreported here.

State Costs

All state expenses are borne by state taxes in all of their forms. In addition to the state income tax, and the state sales tax, there are 72 additional taxes, fees, licenses & permits, and special funds that generate state revenue in Oklahoma. They range alphabetically from the Admission Tax (a 10% tax collected on admission tickets at race tracks) to the Worker’s Compensation Fund (a 1% tax on all gross adjusted premiums for worker’s compensation insurance).

The state of Oklahoma annual expenditures for 1996 were \$8.17 billion. Only 56.3% of these expenditures were state tax receipts. All other revenue expended by state government was from other external sources such as the federal government. Therefore, the FY 1996 State tax receipts were an estimated \$4.6 billion.

County/Local Costs

Identifying county and municipal costs are beyond the scope of this analysis. A major cost, the aggregated local law enforcement is a matter of public record and is therefore included. Other costs such as local shelters, counseling centers etc. could not be reported. It is assumed that county/local costs are somewhat underreported here.

Private Business Costs

It is assumed that private business and property loss costs are somewhat underreported here as so many private costs are not a matter of public record. However, we were able to gather data concerning health care costs and property/business insurance. These are likely the two largest cost components for private business.



Executive Summary
Significant Study Findings

Introduction

The following estimates are for 1996. The cost estimates are those expenses incurred as a result of the behavior of those who abuse alcohol and/or illegal drugs. Unless specifically indicated, the costs do not include the costs related to tobacco use and abuse.

Direct Expenditures

The direct expenses in Oklahoma were estimated to be over \$1.8 billion in 1996. They were paid by:

Federal Taxpayer	\$860 million	47%
State Taxpayer	\$329 million	18%
Local Taxpayer	\$130 million	7%
<u>Private Business</u>	<u>\$526 million</u>	<u>28%</u>
Total Expense	\$1,845 million	100%

Indirect Cost

When people become disabled and non-productive, their loss to the economy has a value. It is estimated that \$5.8 billion of productivity has been lost due to alcohol and substance abuse. This number is higher than other models may estimate. That is because we assumed that these costs are equally distributed in the population rather than being concentrated at the lower income levels. Therefore, we assumed lost wages to be the state median income rather than the minimum wage.

In any respect, this number is calculable ... but we wonder how measurable it really is.

Alcohol	\$3,549 million	61%
Illegal Drugs	\$2,148 million	37%
Non-Employment	\$37 million	---
FAS	\$17 million	---
<u>Premature</u>	<u>\$12 million</u>	<u>---</u>
<u>Mortality</u>		
Total Loss	\$5,764 million	

Direct Expense to Oklahoma Taxpayers/State Government

The state budget (expenditures of all sources of revenue) for Oklahoma was about \$8.2 billion in 1996. This was about \$2,485 for every man woman and child living in the state.

About half of that amount were tax receipts. The remainder was sales tax income and income from licenses and fees. The income, sales and other revenue are fungible. Therefore one cannot indicate which kind of tax revenue was applied toward which expense.

This Oklahoma cost of almost \$330 million is hardly a voluntary expenditure. Rather it is a cost that must be borne after the fact to provide a variety of services to substance abusers ... or to society as a result of the behavior of substance abusers. The majority of state costs were in the areas of criminal justice (\$191 million) and social services (\$117 million).



Should substance abuse be dramatically reduced, what could Oklahoma do with \$330 million?

- Every Oklahoma college and university could be fully funded with their “peer” institutions.
- Every student could receive a tuition free education ... with \$100 million left over.
- The operating budgets of either OU or OSU could be increased 150%.

Costs to All Government

If the costs to state government are high, the costs to the federal government are even higher. It is estimated that the Oklahoma costs to the Oklahoma taxpayer are \$330 million. The estimated federal costs are more than twice as high ... \$860 million. Additionally, local governments contribute an estimated \$130 million, mainly in public safety costs.

Costs to Private Business

Many will assume that costs related to substance abuse are mainly borne by public agencies and public revenue. That is true as \$1.2 billion is incurred by government. However, an additional \$547 million is also borne by private business.

Costs to Oklahoma Economy

The annual Oklahoma economy (real Gross State Product) is estimated to be almost \$58 billion. The direct expense caused by substance abusers is almost \$2 billion. There is another cost that cannot be accounted in cash ... but can be estimated. That is the loss of productivity by citizens incapacitated by substance abuse. The estimated amount of lost productivity is even greater than the actual cash costs ... it is just about \$6 billion in Oklahoma for 1996. By combining both ... the overall impact on Oklahoma is an estimated \$7.6 billion. This represents over 13% of the Oklahoma economy.

Key Observations

- These costs are likely to be underestimated by 10-15% due to a host of hidden costs that are known but not possible to isolate.
- Substance abuse costs the economy of the state of Oklahoma over \$7.6 billion. That is 13% of Oklahoma’s \$58 billion Gross State Product. The GSP is the total value of all goods and services produced by the state’s economy.
- Substance abuse costs Oklahoma \$459 million in state and local taxes.
- The state taxes attributable to alcohol and substance abuse were \$329 million ... or \$100 in state taxes alone for every man, woman and child in the state ... or \$260 for every Oklahoma household. These expenses accounted for more than 7% of all state taxes collected in 1996.
- Of the total costs, about \$1.8 billion are direct expenses with the remaining \$5.8 billion lost to the economy as a whole.
- Everyone pays ... the Oklahoma state/local taxpayer pays about 25% ... Oklahoma private business over 25% ... and the federal taxpayer a little less than half. Oklahomans pay more than \$1,000 per household in federal, state and local taxes to pay for substance abusers.
- 20% of all Oklahoma hospital inpatient charges are estimated to be associated with substance use and tobacco ... excluding tobacco, over 7% of all hospital costs are attributable to alcohol and illegal substances.



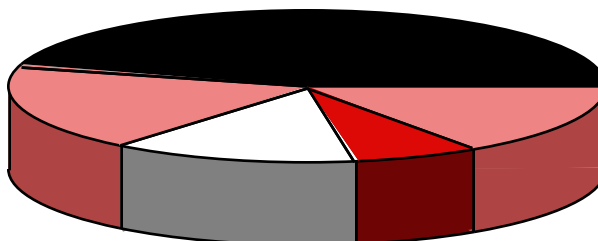
Summary of Costs Due to Substance Abuse

<u>SUMMARY TABLE</u>	<u>FEDERAL</u>	<u>STATE</u>	<u>LOCAL</u>	<u>PRIVATE</u>	<u>TOTAL</u>
Health Care Services	125,819,237	20,555,143		107,446,223	253,820,602
Public Safety/Criminal Justice	21,201,992	190,757,081	129,762,578	12,933,376	354,655,027
Social Services	713,089,171	117,960,893		6,750,000	837,800,064
Costs to Business				296,805,676	296,805,676
<u>Property Loss Costs</u>		<u>100,236</u>		<u>122,887,265</u>	<u>122,987,501</u>
GRAND TOTAL EXPENSE	860,110,400	329,373,352	129,762,578	546,822,540	\$1,866,068,870

<u>LOSS OF PRODUCTIVITY</u>	<u>TOTAL IMPACT</u>
Alcohol	3,549,428,698
Illegal Drugs	2,148,927,304
Non-Employed	36,532,527
Fetal-Alcohol Syndrome	17,236,325
<u>Premature Mortality</u>	<u>12,315,419</u>
LOST PRODUCTIVITY	\$5,764,440,273
GRAND TOTAL COST	\$7,630,509,143

All Direct Expenditures ... as a percent of all direct expenditures in Oklahoma ...

Health Care Services	253,820,602	14%
Public Safety/Criminal Justice	354,655,027	19%
Social Services	837,800,064	45%
Costs to Business	296,805,676	16%
<u>Property Loss Costs</u>	<u>122,987,501</u>	<u>7%</u>
GRAND TOTAL EXPENSE	\$1,866,068,870	100%



Section 1

Health Care Costs

... a study of the fiscal impacts of those who abuse alcohol and use illegal drugs ...
for the State of Oklahoma for 1996



Presented March 31, 1998

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Health Care
Inpatient Hospital Costs
All Hospitals Operating in Oklahoma (1995)

Estimated inpatient hospital costs were derived using the 1995 inpatient discharge data supplied by the *Division of Health Care Information (DHCI), Health Care Financing Authority (1)* for all hospitals operating in the state including all cases. (Note that this is an inclusive data set unlike other hospital data sets that only include a certain group of patient hospital costs, such as exclusively Medicare patients, this data set includes all patients).

See tables 3, 3a and 3b (Section 7, References) for all inpatient data.

In order to calculate the inpatient hospital costs attributed to substance abuse, the following approach was taken:

1. The DHCI provided data on all cases treated in Oklahoma Hospitals by ICD-9 codes, description of the condition by cases, the number of cases by disease/illness category and the average charge per case. Note that the number of cases is not necessarily equal to the number of individual patients, since a patient may be treated in a hospital more than once for the same condition over a one year period and each time he/she was admitted would be considered one case.
2. Citing the Center for Addiction and Substance Abuse (CASA) – Columbia University Study on the Costs of Substance Abuse in New York City (13) the list of diseases/illnesses that were either fully or partially caused by (a) smoking; (b) alcohol; (c) illegal drug use; (d) or poly-substance abuse were identified via ICD-9 codes and separated from the total discharge data set.
3. The disease/illnesses included in this portion of the study are listed in Table 1 (Section 7, References) along with the type of factor risk by substance and the percent attributable risk.
4. The number of cases per disease/illness category was multiplied by the average expenditure by case for a total cost figure. This total cost was multiplied by the percent attributable risk. These costs were summed across by type of substance.
5. A second cost figure was also calculated given these data which adjusted for costs/charges. The hospital data provided information on average charges but this figure does not include the costs borne by the hospital for treating such cases. An estimate for this cost figure equals Total Revenue - Net Revenue/ Total Revenue. The numerator represents the amount of money that is not receivable due to discounts to insurers, bad debt, and charity care. The average ratio for all hospitals in the state equals 0.38. This means that for every \$1.00 in expected total revenue, a hospital actually receives \$0.62. (The formulas for arriving at the cost figures are given in Section 7, References).
6. Since no specific information is available of costs by payor type, the average amount of total revenue (for all hospitals) that the government pays (Medicare + Medicaid) for is applied to the total revenue figure to ascertain the average cost burden of inpatient care attributable to substance abuse for the Government. (This average ratio equals 0.58 or slightly over half). The percent cost covered by Medicaid alone is 14%.



7. The explicit assumptions made in steps 5 and 6 above is that the distribution of smoking, alcohol, and drug abuse is the same for across categorical groupings of the population. As an example, the distribution of smoking and chronic drinking is given by income in Table 2 (Section 7, References). As can be seen from the results in Table 2, there is a slightly higher prevalence of smoking and drinking in the lower income groups, which are typically the same groups covered by Medicaid Services. Hence, using an average revenues paid by the government for all Medicaid patients presents a slightly conservative estimate of what the true Medicaid burden may be.

In Tables 3 - 5 (Section 7, References), the calculated costs for estimated inpatient costs due to substance abuse are presented. The greatest inpatient costs are due to smoking and the treatment of smoking related cases. The second greatest inpatient costs are attributable to drugs/alcohol risk factors. This is explained by the attributable risks of drugs and alcohol and their possible role in causing trauma accidents and burn cases.

In terms of the percent costs by specific substances, smoking comprises the largest percent of total substance abuse costs (63.1%) as well as total inpatient charges (13.0%). It is not surprising that most cases hospitalized for a substance abuse risk factor were due to smoking (25,164 cases out of a total of 348,126 cases.) However, the most expensive group to treat per case are patients who present to the hospital with drugs/alcohol as the major risk factor: \$21,075.

As stated above, these cases are exclusively trauma and burn victims which usually are high cost patients to treat (AIDS patients were omitted in this analysis due to the following reasons: (a) the discharge information combined AIDS patients with other cases by primary diagnoses; and (b) AIDS cases by IV drug use are under reported, therefore questioning the reliability of the data).

Key Observations

- Total Inpatient Charges Attributed to substance abuse equals \$598,202,797 and the single greatest risk factor was smoking and caused the highest toll in terms of charges, \$377,298,111 and in terms of the number of cases, 25,164, than any other single substance.
- Alcohol alone, however, was the second most costly risk factor as a single substance or in combination with other substances equaling \$134,268,531.
- The high costs of alcohol were primarily due to trauma and burn victims.
- The most expensive costs per case were for victims of drugs and alcohol \$21,075.

Implications of Inpatient Charges

It must be noted that the costs imposed on hospitals for treating patients with smoking, alcohol, drug abuse or any combination of substances must either be absorbed as a loss for the individual hospital or passed on to consumers. If the costs are continually absorbed by the hospital(s), it runs the risk of increased financial distress that could result in a reduction in the amount of services offered or even complete closure. If either of these scenarios result, then the community loses first, because access to hospital care is decreased and second, the loss of employment opportunities and the commensurate affect on the economy may be drastically lowered (with a value of two times the direct revenues of the hospital). If costs are passed on to the consumer, then the insurance premiums either paid by the employers – via health care benefits – or individuals would increase. This outcome, in turn, would reduce the state’s economic growth potential by increasing employers incentives to hire part-time workers who would not receive health insurance benefits and/or a reduction in the purchasing power of individuals in the State.



Health Care
State Mental Health Facilities
Inpatient Care and Contracted Outpatient Care

Major providers of substance abuse inpatient and outpatient care include the Department of Mental Health and Substance Abuse (DMH) and state owned and operated hospitals: Eastern State Hospital and Norman Griffin Hospital as well as the Tahlequah Facility which provides outpatient care. In fiscal year (FY) 1997, the appropriation for state facilities was **\$3,682,824**. The revolving fund equaled \$192,822 and the block grant amounted to \$641,642 (12). The state facility at Tahlequah – The Bill Willis Community Mental Health Center outpatient costs totaled \$132,376. The total amount allocated to operating state owned facilities was \$4,517,288. These inpatient costs were added to hospital inpatient costs in the previous section.

Budget allocations (appropriations plus revolving funds) for all contracted substance abuse outpatient care (1996) are presented in Table 6 (Section 7, References). (Contracted outpatient care are produced in the private sector compensated by State reimbursements). Outpatient medical care was the largest outlay for substance abuse clients followed by residential care. Combined together the total costs of contracted care comes to \$6,216,767. (Including outpatient and outreach programs directed for individuals afflicted with HIV/AIDS).

The total DMH budget for alcohol and drug abuse equals \$19,805,918. Of this amount the Federal Government provides \$13,589,651 which is 68.6% of the total; and the State outlay comes to \$6,216,767 which accounts for 31% of the total budget. The total budget for DMH equals \$39,611,836 of which 50% is allocated to alcohol and substance abuse. Therefore the amount of **\$19,938,794** is used here.

During this same fiscal year, 29,322 individuals received alcohol or substance abuse treatment via the DMH. 20,057 individuals were admitted for inpatient care and 10,565 clients received contract/outpatient services. The distribution of specific substance use by clients is in Table 7. From the results presented in Table 7, alcohol is the leading cause of addiction by these clients served. On further examination of the data, 6,498 clients (30.8%) lived alone; 12,398 (58.7%) lived with the family; and 2,218 (10.5%) lived with a non-relative. (Note that not all the clients provided this type of information, therefore the total does not equal 29,322.) These findings indicate that there is no substitute for formal alcohol/drug abuse treatment. In other words, living with someone does not replace professional care.

An additional expenditure of alcohol related costs is the prevalence of alcohol in domestic violence. In a recent study, (M. Wood Schneider and P. Curtis “Factors Associated with the Co-Occurrence of Domestic Violence and Child Abuse in a High Risk Sample” Presentation at the American Public Health Association Meeting, 1997) reported that 54% of all domestic violence/assault could be attributed to alcohol use. Using this 54% as an attributable risk, the estimated cost for treating domestic violence victims is \$1,556,279 ($\$2,881,999 * .54$) where the \$2,881,999 is the amount of money spent on domestic violence services by the DMH).

Medicaid was the payor of services for 1,978 clients, 7% of the total number of clients served by the DMH. As an aside it was also reported the Medicaid Costs attributed to cigarette smoking totaled \$17,340,000 in FY1993 (Leonard Miller, Professor – UC-Berkeley in a report to Doug Matheny, Oklahoma State Department of Health , July 18, 1996) or adjusting for the medical price inflation an approximate cost of \$19,787,368 for 1996. (The medical inflation rates used here come from the Health Care Financing Review, (6).)



Health Care
Indian Health Service

Substance abuse treatment within the Indian Health Service (IHS) falls into two categories: treatment directly provided and produced by the IHS; and those services provided by outside contractors via the PL93-638 agreement (7).

Under the auspices of the IHS, there are three half-way houses which provide counseling and group meetings for individuals who had successfully completed recovery treatments. The costs for IHS for these three facilities are \$312,646. Outpatient and prevention costs were combined since the outpatient care provided a prevention orientation component. These costs amounted to \$3,913,643.

Under the contractual agreements between the IHS and private providers, \$447,805 was paid for inpatient treatment. Also under contract was one adolescent inpatient unit which cost the IHS \$1,290,844. Two tribes directly treated alcohol related cases at a cost of \$651,462.

The total IHS budget allocated to alcohol and substance abuse sums to **\$6,616,400** which includes other outpatient and treatment centers.

Health Care
Health Care Costs of Children from Substance Abuse

1. Substance Abuse Prevalence among Pregnant Women

The Oklahoma Pregnancy Risk Assessment and Monitoring System (PRAMS) of the Oklahoma State Department of Health conducted a longitudinal study of pregnant women from 1988-1994. The findings from this report showed that an average of one out of every thirteen pregnant women consume alcohol during the last trimester. Pregnant women aged 35 or older, are 3.4 times more likely to drink than women under 20 (which should not be surprising since the legal drinking age in Oklahoma is 21.) Smokers are 2.3 times more likely to drink before delivery than non-smokers.

Other risk factors that are associated with 'heavy' drinking (seven or more total weekly drinks) during pregnancy are given in Table 8. By comparing women who are abstainers versus heavy drinkers, we found that heavy drinkers were more likely to have an unintended pregnancy, have little or no prenatal care, smoke, and suffer from domestic abuse vis-a-vis abstaining counterparts. These figures are disturbing given the fact that 25% of mothers reported that their health care provider did not fully inform them on the potential dangers of alcohol on their unborn fetuses.

2. Fetal Alcohol Syndrome

The most debilitating outcome from a pregnant woman consuming alcohol during pregnancy is the risk of delivering a child with fetal alcohol syndrome (FAS). According to Dr. Robin Gerwitsch of the University of Oklahoma Child Study Center, 78% of all FAS newborns are low-birth weight and present with cardiac problems. Further, FAS is 100% preventable and is currently the leading known cause of mental illness in the country. It has been estimated that for every 1000 births, 1.3 newborns will be afflicted with FAS (2,3,4). By race, white women are 1.4 times more likely to drink during pregnancy than African-American women; and among Native-American women the FAS incidence rate is approximately 1.8/1000.

The lifetime costs for the treatment of care per a FAS victim including neo-natal care is estimated to be \$596,000 (14).



Given Oklahoma's average annual birth rate of 45,000 (Maternal and Child Health Service, Oklahoma Department of Health, 1998) it can be expected that approximately 60 Oklahoma babies are born each year with FAS. Of these 60 babies, 2.5 % will be severely retarded; 45% will be moderately retarded; and 52.5% will be mildly retarded.

Characteristics of FAS individuals include:

- heart problems
- hearing problems
- cleft palate
- low IQ (an average of 66)

Non-medical services that FAS children require include:

- speech and language therapy
- physical therapy
- cognizant stimulation
- behavioral management
- special education

With an estimated cost of \$596,000 per FAS baby multiplied by the estimated number of 60 FAS babies born annually in Oklahoma, the estimated total life time added cost comes to \$35,760,000. This amount annualized represents an expense of **\$468,853** per year.

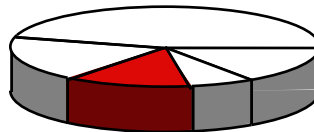
Health Care Summary of Costs Due to Substance Abuse

<u>HEALTH CARE</u>	<u>FEDERAL</u>	<u>STATE</u>	<u>LOCAL</u>	<u>PRIVATE</u>	<u>TOTAL</u>
Hospital Care	105,284,989	14,065,344		107,446,223	226,796,555
Mental Health Service	13,589,651	6,349,143			19,938,794
Indian Health Service	6,616,400				6,616,400
<u>Fetal-Alcohol Syndrome</u>	<u>328,197</u>	<u>140,656</u>			<u>468,853</u>
TOTALS	125,819,237	20,555,143		107,446,223	253,820,602

Health Care ... as a percent of total direct expenditures in Oklahoma ...

14%

Health Care Services	253,820,602	14%
Criminal Justice	354,655,027	19%
Social Services	837,800,064	45%
Costs to Business	296,805,676	16%
<u>Property Loss Costs</u>	<u>122,987,501</u>	<u>7%</u>
TOTAL EXPENSE	1,866,068,870	100%



Section 2

Social Services Costs

... a study of the fiscal impacts of those who abuse alcohol and use illegal drugs ...
for the State of Oklahoma for 1996



Presented March 31, 1998

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Social Services
Temporary Assistance to Needy Families

This program has been known for generations as Aid to Families with Dependent Children (AFDC) ... and Aid to Dependent Children (ADC). All of the expense is borne by state funds. However, the federal government provides half of the “administrative expense.” The administrative expense is an estimated 16% of program benefits.

According to the CASA study, 20% of women ages 18-44 on AFDC in U.S. are regular users of drugs and alcohol. Total program expenditures for AFDC in Oklahoma were multiplied by the substance abuse factor of 20% to determine the **\$26,279,195** costs.

Data and Source:

1. Total AFDC program expenditures in Oklahoma in 1996; \$131,395,975; Larry Garret, Department of Human Services.
-

Social Services
Home Relief

This program does not exist in Oklahoma (Larry Garret, DHS).

Data and Source:

1. Percentage of Home Relief recipients exempt from the state’s work experience program due to substance abuse.
 2. Total home relief program expenditures in Oklahoma, 1996.
-

Social Services
OASDI (Old-Age, Survivors, & Disability Insurance)

Eligible for benefits because of illness or accident attributable to substance abuse:

According to the CASA study, 14% of all OASDI beneficiaries in the U.S. receive OASDI benefits because of a substance abuse related disability (excluding HIV/AIDS).

Total number of all OASDI beneficiaries in Oklahoma was multiplied by the substance abuse factor of 14%. Then this number was multiplied by the average monthly benefit of disabled workers in Oklahoma (and then multiplied by 12) to determine a cost of \$645,923,600.

Eligible for benefits because of drug-related HIV/AIDS:

According to the CASA study, 57% of AIDS cases are traced to injection drug use or sex with an injection drug user.

Of all disabled workers in Oklahoma receiving OASDI, 1.4% fell into the diagnostic group of “Infection/Parasitic Disease including AIDS/HIV” (This diagnostic category could not be broken down any further, so the figures used in further calculations are overestimates). The total number of disabled workers in Oklahoma was multiplied by 1.4% and then this number was multiplied by the substance abuse factor of 57%. Then this number was multiplied by the average monthly benefit of



disabled workers (and then multiplied by 12) to determine a cost of \$3,796,104. As a final step, the non-HIV/AIDS costs were added to the HIV/AIDS costs to determine the cost of **\$649,719,704**.

Data and Source:

1. Total number of disabled workers, spouses, and children receiving Old-Age, Survivors, and Disability Insurance benefits because of substance abuse related disability (excluding HIV/AIDS) in OK in 1996; 78,271; Social Security Administration OASDI Dec. 1996 report.
2. Total number of all beneficiaries receiving Old-Age, Survivors, and Disability Insurance benefits in OK in 1996; 559,081; Social Security Administration OASDI Dec. 1996 report.
3. Average monthly benefit of disabled workers in Oklahoma in 1996; \$687.70; Jerry Abbot, SS Admin., Washington, DC.
4. Total number of beneficiaries in Oklahoma receiving OASDI benefits because of a disability due to HIV/AIDS; 460; Jerry Abbot, SS Admin., Washington, DC.

Social Services
SSI-Disabled (Supplementary Security Income)

Payments to people with primary or secondary diagnosis of substance abuse:

The number of persons determined to be in the drug addiction and alcohol program was multiplied by the average monthly benefit of SSI-D recipients (and then multiplied by 12) to determine a cost of \$2,819,611.

Payments to people whose disability is due to HIV/AIDS resulting from injection drug abuse:

Of all disabled workers in Oklahoma receiving SSID, 2.1% fell into the diagnostic group of "Infection and/or Parasitic Disease including AIDS/HIV" (This diagnostic category could not be broken down any further, so the figures used in further calculations are overestimates). The total number of disabled workers in Oklahoma was multiplied by 2.1% and then this number was multiplied by the substance abuse factor of 57%. Then this number was multiplied by the average monthly benefit of disabled workers (and then multiplied by 12) to determine a cost of \$2,860,239.

As a final step, the non-HIV/AIDS costs were added to the HIV/AIDS costs to determine the cost of **\$5,679,850**.

Data and Source:

1. Number of recipients in the drug addiction and alcohol program that are required to be in treatment; 694; Shirley Queen SSI, Washington, DC, based on June 1996 report.
2. Number of other recipients who have a primary or secondary diagnosis of substance abuse; NA.
3. Average monthly benefit of SSID recipients in OK in 1996; \$338.57; SSI December 1996 report.
4. Number of SSID recipients disabled due to HIV/AIDS; 704; Jerry Abbot, SS Admin., Washington, DC.



Social Services
Food Stamps

According to the CASA study, 19.5% of all Food Stamp recipients aged 18-64 are regular users of drugs or alcohol. Total program expenditures for food stamps in Oklahoma were multiplied by the 19.5% substance abuse factor to determine the **\$60,981,633** cost.

Data and Source:

1. Total Food Stamp expenditures in OK in 1996; \$312,726,322; Larry Garret, Department of Human Services.
-

Social Services
Private Charities

The CASA study applied a substance abuse factor of 45% to the total operating budget of all private charities.

In Oklahoma, charities have to register with the Secretary of State if they have budgets larger than \$10,000. Unfortunately, this data is not computerized at the Secretary of State's office. The staff estimated that there are between 1,200 and 2,000 charities registered in Oklahoma. It was assumed that there were 1,500 charities with budgets of \$10,000 each, for total operating budgets in the state of \$15,000,000 (since the minimum budget for registered charities was used in the calculation, this is probably a conservative estimate).

The substance abuse factor of 45% was applied to this figure to determine the cost of **\$6,750,000**.

Data and Source:

1. Total operating budgets for social services in non-profit, non-governmental sources in OK in 1996; \$15,000,000; Darlene Adams, Secretary of State's Office.
-

Social Services
Foster Care

According to the CASA study, substance abuse is a reason for placement in 77% of all foster care cases.

Total program expenditure for foster care in Oklahoma were multiplied by the 77% substance abuse factor to determine the **\$13,538,329** cost.

Data and Source:

1. Total budget expenditures for foster care in OK in 1996; \$17,582,245.15; Larry Garret, Department of Human Services.
-



Social Services
Preventative and Protective Services

Child Protective Services

The CASA study used the same 77% substance abuse factor for child protective services as was used in foster care. Total budget expenditures for child protective services in Oklahoma were multiplied by the 77% substance abuse factor to determine the cost of **\$12,087,976**.

Domestic Violence

According to the CASA study, substance abuse is involved in 50% of all domestic violence cases in the U.S. The total expenditures for services to victims of domestic violence in Oklahoma were multiplied by the 50% substance abuse factor to determine the cost of **\$1,447,076**.

As a final step, these two costs were added together to determine the prevention and protective services cost of **\$13,535,052**.

Data and Source:

1. Child Protective Services: Total budget for child protective services in OK in 1996 (include fringe benefits of personnel if possible); \$15,698,670 for protection and prevention; Larry Garret, Department of Human Services.
2. Domestic Violence: Total expenditures for services to victims of domestic violence in OK in 1996 (include direct and contracted services/expenses); \$2,894,151; Mark Reynolds, Department Mental Health and Substance Abuse Services.
3. Preventative Services to families whose children are at risk for foster care placement: Total budget for preventative services in OK in 1996; Included in 8.1.
4. Percentage of prevention cases in OK that involve parental substance abuse; NA; Larry Garret, Department of Human Services.

Domestic violence was also independently estimated by Dr. Valdmanis. Her calculations, and supporting data, are below and included for information purposes. Her calculated amount is similar to the number reported by Dr. Johnson. But the amount is not included in the cost summaries. Her comments are:

*“In a recent study, (M. Wood Schneider and P. Curtis “Factors Associated with the Co-Occurrence of Domestic Violence and Child Abuse in a High Risk Sample” Presentation at the American Public Health Association Meeting, 1997) reported that 54% of all domestic violence/assault could be attributed to alcohol use. Using this 54% as an attributable risk, the estimated cost for treating domestic violence victims is **\$1,556,279** ($\$2,881,999 * .54$) where the \$2,881,999 is the amount of money spent on domestic violence services by the DMH.)”*

Social Services
Emergency Shelters

Homeless Substance Abusers

In the CASA study, temporary shelter expenditures for the homeless were multiplied by a substance abuse factor of 29% for family shelters and 65% for single shelters. Since shelters in Oklahoma could not be broken down into family versus single shelters, shelter expenditures were multiplied by an average of the two CASA substance abuse factors (for a substance abuse factor of 47%).



In Oklahoma, \$350,000 in expenditures for homeless shelters is distributed through DHS equally to DMHSAS, Department of Commerce, and the Oklahoma Housing Finance Agency. In addition, the DMHSAS has another \$475,000 for homeless shelters designated by the McKinney Act. Similarly the Department of Commerce has another \$663,000 in an emergency shelter grant.

The substance abuse factor of 47% was applied to the state's \$1,488,000 expenditures for homeless shelters to determine the **\$699,360** cost.

Homeless Fire Victims

The information needed for these calculations was not available (Shirley Williams, Oklahoma Housing Finance Authority).

Data and Source:

Homeless Substance Abusers

This specific data was not available. However, the state's expenditures (\$1,488,000) on homeless were available and therefore used; information received from Larry Garret, Department of Human Services, Shirley William, Housing Finance Agency, and Mark Reynolds, Department of Mental Health and Substance Abuse Services.

1. Total temporary shelter and related services expenditures in OK for 1996 for family shelters.
2. Total temporary shelter and related services expenditures in OK for 1996 for single adults.
3. Fringe benefits for shelter and central administration personnel and administrative costs for family shelter personnel.
4. Fringe benefits for shelter and central administration personnel and administrative costs for single adult shelter personnel.

Homeless Fire Victims

5. Average number of all shelter residents per night in family shelters. NA
6. Average number of all shelter residents per night in single adult shelters. NA
7. Total number of Oklahomans left homeless by fire (and arson) who spent more than 6 months in homeless shelters. NA
8. Percentage of structural fires in Oklahoma in 1996 caused by smoking, 5.2%, Shannon Rowland, OK Fire Marshall's office.

Social Services
**Housing and Housing Assistance for
Persons with HIV/AIDS and Mentally Ill Chemical Abusers**

Housing for persons with HIV/AIDS

According to the CASA study, 57% of AIDS cases are traced to injection drug use or sex with an injection drug user. The total budget expenditures for the Housing Opportunity for Persons with AIDS (HOPWA) was multiplied by the 57% substance abuse factor to obtain the **\$370,500** cost.

Housing for Mentally Ill Chemical Abusers

The CASA study used a substance abuse factor of 25% as the percent of program costs for the dual-diagnosed patients that was attributable to substance abuse (and not mental illness).



Total expenditures for mental health community support services in Oklahoma were multiplied by the percent of patients in community support programs who were classified as dually-diagnosed, that is mentally ill chemical abusers (the 32% might seem high, but this statistic was computed from recorded data; the CASA study estimate was 27%)... and then multiplied by the 25% substance abuse factor to determine the **\$136,957** costs.

As a final step, the two housing costs were summed for a combined cost of \$507,457.

Data and Source:

Housing for persons with HIV/AIDS

1. Cost of housing and support services provided by or under contract to the State of Oklahoma-Division of AIDS Services (include overhead costs and fringe benefits if possible) for 1996; \$650,000 for the Housing Opportunity for Persons with AIDS (HOPWA), Shirley Williams, Housing Finance Agency.
2. Cost of rent supplements for persons with HIV/AIDS; Data not available, Shirley Williams, Housing Finance Agency.
3. Cost of homemaker services for persons with HIV/AIDS; Data not available, Shirley Williams, Housing Finance Agency.

Housing for Mentally Ill Chemical Abusers

4. Total expenditure for mental health community support services in OK in 1996; \$1,711,966 for mental health housing assistance; Mark Reynolds, Department of Mental Health and Substance Abuse Services.
5. Percentage of patients in community support programs who are mentally ill chemical abusers; 32%, Nancy Stone, Parkside Mental Health, Tulsa.

Social Services
Juvenile Corrections

State Custody

The number of Oklahoma youths in custody was multiplied by the percentage of youths in state custody with substance use or involvement. This number was then multiplied by the average cost per day per youth in (out-of-home) state custody (and then by 365) to determine the cost for state custody of **\$5,156,079**.

Detention

According to the CASA study, 38% of serious truants were “heavy” alcohol users. The total budget for juvenile justice in Oklahoma was multiplied by the 38% substance abuse factor to determine the detention cost of **\$41,419,262**.

The combined cost for state custody and detention for juvenile corrections was **\$46,575,341**.

Data and Source:

State Custody

1. Cost per day for one youth in State custody; \$11.33; Sam Davis, Office of Juvenile Affairs.
2. Number of OK youths in custody; 2,078 as of June 2, 1997; Sam Davis, Office of Juvenile Affairs.



3. Percentage of OK youths in State custody with substance use or involvement; 60% based on staff field reports; Sam Davis, Office of Juvenile Affairs.

Detention

4. Total budget for OK Department of Juvenile Justice; \$102,793,368 for OJA (Sam Davis) and \$6,204,690 through DHS (Larry Garret).
5. Percentage of serious truants (7-12th grade) in OK that were "heavy" alcohol users; 38% as reported by CASA study.

Social Services Substance Abuse Prevention

Department of Mental Health and Substance Abuse Services' expenditures for prevention and Drug Free Schools were used to determine costs of **\$3,275,606**.

Data and Source:

1. Total budget expenditures on prevention and prevention support programs (include, if possible, public and private school-based programs and community-based programs); 3,275,606; Mark Reynolds, Department of Mental Health and Substance Abuse Services.

Social Services Special Education

In the CASA study, 13.1% of students enrolled in special education were low birthweight, and according to the CASA study, 38% of low birthweight births are attributable to substance use.

The per pupil expenditure for elementary and secondary students was subtracted from the per pupil expenditure for special education students to compute an average additional cost/pupil of special education compared to general education.

This figure was multiplied by the total number of students in Special Education. Next this figure was multiplied by 13.1% and then the 38% substance abuse factor to determine the **\$9,290,668** cost.

Data and Source:

1. Percentage of students enrolled in Special Education who were low birthweight; NA, used 13.1% as reported by CASA study.
2. Total number of students enrolled in Special Education in OK in 1996; 70,533; Bobbi Caster, Department of Education.
3. Per pupil expenditure for elementary and secondary education; \$3,508.16; Bobbi Caster, Department of Education.
4. Per pupil expenditure for special education students; \$6,154.22; Bobbi Caster, Department of Education.
5. Total number of students enrolled in OK public school in 1996; 570,229.51 as average daily attendance; Bobbi Caster, Department of Education.



Social Services Family Court

The specific information needed for these calculations was not available (Ike Hill, Administrative Office of Courts).

Data and Source:

- 1 Number of cases heard by judges in each of the following areas in OK in 1996: permanent neglect, child protective, foster care review and approval, violations/modifications of child protective orders, adoption, surrender of child, juvenile delinquency, designated felony, persons in need of supervision, family offense, custody or guardianship, and supplementary cases (follow up of a previous order 14.1)
- 2 For the supplementary cases heard by judges in 1996, how many cases were heard in each of the following areas: permanent neglect, child protective, foster care review and approval, violations/modifications of child protective orders, adoption, surrender of child, juvenile delinquency, designated felony, persons in need of supervision, family offense, custody or guardianship.
- 3 Total number of cases heard by judges in 1996 in OK.
- 4 Total budget for Family Court in OK in 1996 (excluding the Hearing Examiner Program).
- 5 Total number of cases heard by Hearing Examiners in OK in 1996 that were paternity cases.
- 6 Total number of cases heard by Hearing Examiners in OK in 1996 that were child support cases.
- 7 Total number of all cases heard by Hearing Examiners in OK in 1996.
- 8 Total budget for the Hearing Examiner Program in 1996.
- 9 Average cost per proceeding of cases completed by the Family Court Division of the OK State Law Department.
- 10 Total number of all felony drug referrals in 1996.
- 11 Total number of all other felony referrals (excluding drug referrals) in 1996.
- 12 Total number of cases represented (by the Juvenile Rights Division) that were in each of the following areas in OK in 1996: child protective cases, juvenile delinquency cases, persons in need of supervision cases.
- 13 Total number of cases represented by the Juvenile Rights Division in OK in 1996.
- 14 Total budget for the Juvenile Rights Division in 1996.
- 15 Total expenditures for the Assigned Counsel Program (represents adults in cases of abuse, neglect, and termination of parental rights) in Family Court in 1996.
- 16 Department of Probation expenditures in 1996 for services to Family Court (including supervision of youth).

Social Services Employment/Training

The job opportunity and basic skills expenditures for AFDC and food stamp recipients (from the Department of Human Services) was multiplied by the 20% substance abuse factor (previously used in AFDC and Food Stamp computations). In addition, \$154,440 for substance abuse vocational services (from Department of Mental Health and Substance Abuse Services) as added to determine the cost of **\$967,869**.

Data and Source:

1. Department of Employment's total cost of employment and training programs for substance abusers in 1996; \$4,067,344.57 from Department of Human Services (Larry Garret) for job opportunity and



basic skills for AFDC and Food Stamp recipients and \$154,440 from Department of Mental Health and Substance Abuse Services for vocational services for substance abusers.

2. Department of Employment's additional costs for employment and training programs for homeless persons; NA.

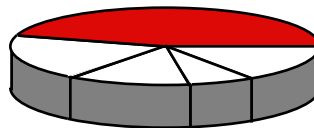
Social Services Summary of Costs Due to Substance Abuse

<u>SOCIAL SERVICES</u>	<u>FEDERAL</u>	<u>STATE</u>	<u>LOCAL</u>	<u>PRIVATE</u>	<u>TOTAL</u>
Disability Income	649,719,704				649,719,704
USDA Food Stamps	56,103,102	4,878,531			60,981,633
Temp Assistance		26,279,195			26,279,195
Foster Care		13,538,329			13,538,329
Private Charities				6,750,000	6,750,000
Supplemental Social Security Prevention/Protective Services	5,679,850				5,679,850
Domestic Violence		1,447,076			1,447,076
Child Protective Services		12,087,976			12,087,976
Emergency Shelters	538,507	160,853			699,360
Housing					
AIDS	370,500				370,500
Mental Illness/Chem Abuse		136,957			136,957
Juvenile Corrections					
State Custody		5,156,079			5,156,079
Detention		41,419,262			41,419,262
Substance Abuse Prevention		3,275,606			3,275,606
Special Education		9,290,668			9,290,668
Family Court (Not available)					
<u>Employment/Training</u>	<u>677,508</u>	<u>290,361</u>			<u>967,869</u>
TOTALS	713,089,171	117,960,893		6,750,000	837,800,064

Social Services ... as a percent of total direct expenditures in Oklahoma ...

45%

Health Care Services	253,820,602	14%
Criminal Justice	354,655,027	19%
Social Services	837,800,064	45%
Costs to Business	296,805,676	16%
<u>Property Loss Costs</u>	<u>122,987,501</u>	<u>7%</u>
TOTAL EXPENSE	1,866,068,870	100%



Section 3

Criminal Justice System

... a study of the fiscal impacts of those who abuse alcohol and use illegal drugs ...
for the State of Oklahoma for 1996



Presented March 31, 1998

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Criminal Justice
State/County/Municipal Law Enforcement Costs

Total budget expenditures were multiplied by the proportion of total arrests that were linked to drug and/or alcohol abuse (the substance abuse factor) to determine the **\$143,430,750** costs.

Data and Source:

1. Total budget/expenditures for FY 1996; \$318,735,000 (\$146,597,000 for state; \$272,138,000 for county/municipal); Police protection budgets from Sourcebook of Criminal Justice Statistics, 1996.
2. Proportion of total arrests that could be linked to drug and/or alcohol abuse; 45%; Uniform Crime Report, 1996.
3. Percentage of male and female arrestees that tested positive for any drug use; NA, Lisa Seybold, OSBI.

Criminal Justice
Federal Law Enforcement

The specific information needed for these calculations was not available from the U.S. Census Bureau.

Data and Source:

U.S. Census Bureau does not keep this type of data; Total budgets would be available, but it would not be broken down by drug laws/crimes or by agency.

1. Cost of law enforcement related to drug laws and crimes in OK during FY 1996 for the FBI
2. Cost of law enforcement related to drug laws and crimes in OK during FY 1996 for the Federal Drug Enforcement Administration
3. Cost of law enforcement related to drug laws and crimes in OK during FY 1996 for U.S. Marshals

Criminal Justice
Adult Jails/Prisons

Federal Prisons:

A substance abuse factor of 60.7% was used in these calculations. This is the percentage of federal prisoners in the El Reno reformatory who have drug or drug-related offenses.

The number of prisoners in custody as of January 1, 1997 was multiplied by the average cost of incarceration per inmate per year. Then the substance abuse factor of 60.7% was applied to determine the cost of **\$18,576,992**.

Data and Source:

1. Cost for incarceration and support of federal prisoners in OK in FY 1996 for drug offenses (spending on federal prisoners in OK). \$18,576,992; information to calculate provided by Leon Crawford, Asst. Warden, El Reno Reformatory.



State Prisons:

A substance abuse factor of 70.14% was used in these calculations. This is the percentage of state prisoners who are identified substance abusers. The number of prisoners in custody as of January 1, 1997 was multiplied by the cost of incarceration per inmate per year. Then the substance abuse factor of 70.14% was applied to determine the cost of **\$135,899,603** for State Prisons.

Data and Source:

1. Cost of incarceration per inmate in FY 1996; \$12,806/yr; Bob Zapffe, Department of Corrections.
2. Total number of inmates from OK under custody as of January 1, 1997; 15,130; Bob Zapffe, Department of Corrections.
3. Percentage of State prisoners who are identified substance abusers; 70.14%; Bob Zapffe, Department of Corrections.

County/Local Jails:

A substance abuse factor of 45% (the proportion of arrests caused by drug/alcohol abuse) was used here. The aggregated county budget expenditures (\$15,652,000) were multiplied by 45% to yield \$7,043,400.

Data and Source:

1. Total budget expenditures for FY1996; (\$15,652,000; Corrections budget from Sourcebook of Criminal Justice Statistics, 1996.

As a final step, the costs for county/local jails were added to the costs of state and federal prisons to determine the cost of **\$161,519,995** for adult jails/prisons.

Criminal Justice
Oklahoma Criminal Courts and Related Services

Oklahoma State Criminal Courts:

The specific data needed for these calculations was not available. Civil and criminal court cases were unable to be separated.

Data and Source:

1. Total expenditures for criminal courts in the state of OK for FY 1996; NA, Unable to discriminate between civil and criminal cases; NA, Howard Conyers, Administrative Office of the Courts.

Oklahoma State Supreme Court:

The specific data needed for these calculations was not available (Howard Conyers, Administrative Office of the Courts).

Data and Source:

1. Total number of felony indictments in OK in 1996; none, civil cases only heard, Howard Conyers, Administrative Office of the Courts.
2. Number of felony indictments that were drug felonies in OK in 1996; NA, felonies are not categorized by type, Howard Conyers, Administrative Office of the Courts.
3. Total expenditures for the OK Supreme Court in 1996; NA, could estimate the amount of work done in the trial courts, but the estimate would not be very accurate, Howard Conyers, Administrative Office of the Courts.



Criminal Justice
Federal Criminal Courts and Related Services

The study team was unable to locate a contact person/agency for the information needed.

Data and Source:

Could not locate a contact for this information.

1. Cost of federal judicial resources for court cases involving drug crimes in OK in FY 1996.

Criminal Justice
Housing Authority

Oklahoma City has a housing authority, but there is not a state housing authority. We assumed that Tulsa's housing authority would have similar expenditures, so we doubled the Oklahoma City estimate. Since this estimate is based on doubling Oklahoma City' expenditures, it is probably an underestimate of the state's costs related to drug eviction cases.

The number of narcotics eviction cases filed in Housing Court in Oklahoma City (for calendar year 1996) was multiplied by the average costs of housing court for eviction cases to determine a cost of \$128,539 for Oklahoma City. Then the Oklahoma City estimate was doubled to obtain the **\$257,078** cost.

Data and Source:

1. Housing Authority expenditures for eviction cases filed in OK in FY 1996; Average eviction cost = \$1,053.60 for Housing Authority in OKC, Jack Womack, OKC Housing Authority, 1997 calendar year data.
2. Number of narcotics eviction cases filed in Housing Court in OK in 1996; 122 in OKC; Jack Womack, OKC Housing Authority, 1997 data.

Criminal Justice
Prosecution

Given that 45% of all arrests were linked to drug and/or alcohol abuse, a substance abuse factor of 45% was used in these calculations.

The total budgets for all District Attorneys offices were multiplied by the substance abuse factor of 45% to determine a cost of **\$10,804,851** for district attorneys.

Each of the three U.S. Attorney's offices in Oklahoma (Oklahoma City, Tulsa, and Muskogee) was contacted concerning their drug-related expenditures. Tulsa's system did not allow the tracking of costs by program. After trying three phone numbers, the Muskogee office still could not be reached. However, the Oklahoma City (Western District) office provided a very rough estimate of \$875,000 to \$900,000. The lower estimate was used in calculations. The Oklahoma City estimate was multiplied by three (3), assuming that each office had similar drug-related expenditures, to determine the **\$2,625,000** cost for U.S. attorneys in Oklahoma.



As a final step, the costs for district attorneys were added to U.S. attorneys to obtain the **\$13,429,851** cost.

Data and Source:

1. Total budgets for all District Attorneys offices; \$24,010,781.03; Betty Koehn, District Attorney Council.
2. Total budget of Special Narcotics Prosecution office; NA.
3. Drug-related expenditures for U.S. attorneys in OK in FY 1996; \$875,000 for Western District; Joe Heton, First Assistant for U.S. Attorney Patrick Ryan.

Criminal Justice
Indigent Defense

The CASA study used the same substance abuse factor for this calculation as was used for police protection and district attorneys, 45% (45% of all arrests were linked to drug and/or alcohol abuse).

The Oklahoma Indigent Defense System provides legal aid for citizens except citizens of Oklahoma City and Tulsa. The total budgets of Oklahoma Indigent Defense System, Oklahoma City indigent defense, and Tulsa indigent defense were summed and then multiplied by the substance abuse factor of 45% to determine the **\$6,180,447** cost.

Data and Source:

1. Names of all programs that provide criminal defense for the indigent in OK; Oklahoma Indigent Defense System, Oklahoma County Public Defense, Tulsa County Public Defense.
2. Total budgets from each of these programs; \$9,218,079, \$2,296,891, \$2,219,356, respectively.

Criminal Justice
Probation, Parole, and Alternative to Incarceration

Parole

The number of parolees under active supervision at the end of March 1996 was multiplied by the annual cost of parole per parolee. Then this figure was multiplied by the substance abuse factor of 72.86% (the percentage of parolees that have a past or current substance abuse problem) to determine a cost of **\$1,214,247** for parole. If this factor seems high, it was 80% in the CASA study.

Data and Source:

1. Percentage of parolees that have a past or current substance abuse problem; 72.86%; Bob Zapffe, Department of Corrections.
2. Annual cost of parole per parolee (in FY 1996); \$702; Bob Zapffe, Department of Corrections.
3. Number of parolees from OK under active supervision at the end of March 1996; 2,374; Bob Zapffe, Department of Corrections.

Probation

The Department of Probation expenditures was multiplied by the substance abuse factor of 62% (the percentage of adult population on probation that has a drug or alcohol abuse problem) to determine a cost of **\$14,340,935** for probation.



Data and Source:

1. Percentage of adult population on probation that has a drug or alcohol abuse problem; 62%; Bob Zapffe, Department of Corrections.
2. Department of Probation expenditures for programs and operational activities for adults in FY 1996; \$23,130,541; Bob Zapffe, Department of Corrections.
3. Total number of individuals on probation at the end of March 1996; 26,465; Bob Zapffe, Department of Corrections.

Alternative to Incarceration:

The total cost of ATI programs was multiplied by the substance abuse factor of 62% (the percentage of adult population on probation that has a drug or alcohol abuse problem) to determine the cost of **\$562,340** for ATI.

Data and Source:

1. Total cost of ATI programs aimed at offenses with substance abuse problems; NA.
2. Total cost for the remaining ATI programs (excluding pretrial services); \$907,000; Bob Zapffe, Department of Corrections.

As a final step, the costs for parole, probation, and ATI were summed to obtain the **\$16,117,522** cost.

Criminal Justice Victims

Motor Vehicle Crashes:

The substance abuse factor used in this calculation was the percentage of people killed in traffic fatalities in Oklahoma who tested positive for drugs and alcohol (23.8%). The total number of people (drivers, passengers, pedestrians, motorcyclists, and bicyclists) who died in Oklahoma in motor vehicle crashes was multiplied by the substance abuse factor. Then this figure was multiplied by the national average cost (according to the Centers for Disease Control Prevention) for insurance administration, premature funeral purchase, property damage, and travel delays associated with motor vehicle fatalities to determine the **\$12,933,376** cost.

Data and Source:

1. Per Jan Turney, Department of Public Safety., the number of people who died in 1996 in OK in motor vehicle crashes who were: Drivers; 502; Passengers; 206; Pedestrians; 62; Motorcyclists; 27; Bicyclists; 5.
2. Percentage of people killed in traffic fatalities in 1996 who tested positive for drugs or alcohol; 23.8%; Department of Public Safety, Accident Records Division report for Statewide Collisions.

Cost of Services to Victims:

The CASA study assumed that the substance abuse factor for arrests mirrors the proportion of drug/alcohol-linked violent crimes. Therefore, the 45% was applied to the total expenditures of the Crime Victims Compensation Board (amount actually disbursed) to determine the **\$785,978** cost.

Data and Source:

1. Victim Services agency budget in FY 1996 (excluding domestic violence and homeless services); NA. Amount disbursed from the Crime Victims Compensation Board; \$1,746,617.89; Jerri Duncan, District Attorneys Council.



As a final step, costs for motor vehicle crashes were combined with costs for services to crime victims to obtain the overall victim cost of \$13,719,354.

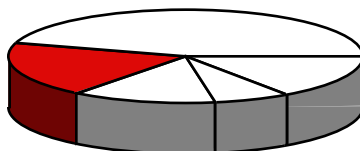
Criminal Justice Summary of Costs Due to Substance Abuse

<u>CRIMINAL JUSTICE</u>	<u>FEDERAL</u>	<u>STATE</u>	<u>LOCAL</u>	<u>PRIVATE</u>	<u>TOTAL</u>
Adult Jails/Prisons	18,576,992	135,899,603	7,043,400		161,519,995
Parole/Probation	Data not available	16,117,552			16,117,552
Law Enforcement	Data not available	20,968,650	122,462,100		143,430,750
Housing Authority (evictions)			257,078		257,078
Prosecution					
District Attorneys		10,804,851			10,804,851
US Attorneys	2,625,000				2,625,000
Indigent Defense		6,180,447			6,180,447
Victims					
Motor Vehicle				12,933,376	12,933,376
Crime Victims		785,978			785,978
TOTALS	21,201,992	190,757,081	129,762,578	12,933,376	354,655,027

Criminal Justice/Public Safety ... as a percent of total direct expenditures in Oklahoma ...

19%

Health Care Services	253,820,602	14%
Criminal Justice	354,655,027	19%
Social Services	837,800,064	45%
Costs to Business	296,805,676	16%
<u>Property Loss Costs</u>	<u>122,987,501</u>	<u>7%</u>
TOTAL EXPENSE	1,866,068,870	100%



Section 4

Costs to Private Business

... a study of the fiscal impacts of those who abuse alcohol and use illegal drugs ...
for the State of Oklahoma for 1996



Presented March 31, 1998

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Private Business
Security

The CASA study assumed that New York City's share of the nation's non-residential security costs were the same as New York City's share of the U.S. Gross Domestic Product.

The CASA study applied the substance abuse factor of the percentage of all arrests linked to drug and/or alcohol abuse in their calculations.

The \$54.3 billion non-residential security costs for the U.S. (paid by businesses) was multiplied by Oklahoma's share of the Gross Domestic Product and then multiplied by the 45% substance abuse factor to obtain the security cost of **\$244,215,000**.

Data and Source:

1. Oklahoma's share of the U.S. Gross Domestic Product (%); 1%; Jeff Wallace, Department of Commerce.
-

Private Business
Insurance Protection

The CASA study used a substance abuse factor for accident related liability of 20%. They indicated that previous studies showed 20% of worker's compensation costs are attributed to substance abuse, and they assumed that the same percentage approximated the percent of accidents and product defects resulting from substance abusers. This factor was applied to business related liability premiums. A factor of 70.14% was applied to theft and vandalism premiums (percent of state prisoners who are identified substance abusers). A factor of 5.2% was applied to fire premiums (percent of structural fires in Oklahoma in 1996 caused by smoking). The respective factors were applied to appropriate insurance premiums, and summed to yield **\$13,635,179**.

Data and Source:

1. Total premiums paid by Oklahoma companies for accident-related liability (excluding auto accidents) was \$51,999,539. Bob Card, Oklahoma Insurance Commission.
 2. Total premiums paid by Oklahoma companies for theft and vandalism was \$1,136,955. Bob Card, Oklahoma Insurance Commission.
 3. Total premiums paid by Oklahoma companies for protection against fires was \$46,880,986. Bob Card, Oklahoma Insurance Commission.
-

Private Business
Workers' Compensation

The CASA study used a substance abuse factor of 20% in their calculations based on prior research of the health care system.

The total amount that Oklahoma businesses paid in workers' compensation premiums (to private carriers) was multiplied by the 20% substance abuse factor.



This figure was then multiplied by the percentage of workers' compensation costs that are related to indemnity costs (versus medical costs) to determine the **\$38,955,497** cost.

Data and Source:

1. How much money Oklahoma businesses paid in WC premiums in 1996; \$347,816,934; Bob Card, OK Insurance Department, 1995 data.
2. The percentage of Workers' Compensation costs that are related to indemnity costs (versus medical costs); 56%; Bob Card, OK Insurance Department, 1995 data.

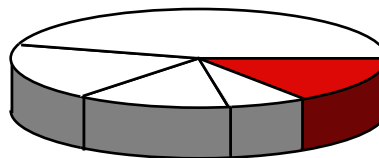
Private Business Summary of Costs Due to Substance Abuse

<u>PRIVATE BUSINESS</u>	<u>FEDERAL</u>	<u>STATE</u>	<u>LOCAL</u>	<u>PRIVATE</u>	<u>TOTAL</u>
Security				244,215,000	244,215,000
Insurance Protection				13,635,179	13,635,179
<u>Workers Compensation</u>				<u>38,955,497</u>	<u>38,955,497</u>
TOTALS				296,805,676	296,805,676

Costs to Private Business ... as a percent of total direct expenditures in Oklahoma ...

16%

Health Care Services	253,820,602	14%
Criminal Justice	354,655,027	19%
Social Services	837,800,064	45%
Costs to Business	296,805,676	16%
<u>Property Loss Costs</u>	<u>122,987,501</u>	<u>7%</u>
TOTAL EXPENSE	1,866,068,870	100%



Section 5

Property Losses

... a study of the fiscal impacts of those who abuse alcohol and use illegal drugs ...
for the State of Oklahoma for 1996



Presented March 31, 1998

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Loss of Property
Stolen Property

The CASA study assumed that not all stolen property was reported, so an additional 40% was added to their value of stolen property.

For these calculations, the CASA study used a substance abuse factor of the percentage of all arrests that were linked to drug and/or alcohol abuse.

The value of stolen property reported in the Oklahoma Uniform Crime Report was multiplied by 1.40% and then this amount was multiplied by the substance abuse factor to determine the **\$103,676,552** cost.

Data and Source:

1. Value of stolen property reported to the OK State Division of Criminal Justice Services for 1996; \$164,565,956; Uniform Crime Report, 1996.
-

Loss of Property
Fire Damage and Fire Department Response

The state's estimate of total direct dollars lost from fires in Oklahoma was multiplied by the 81% adjustment for the percent of structural fires in the state. Then this figure was multiplied by the percentage of all structural fires that are caused by smoking in Oklahoma to determine the **\$11,845,368** cost.

Data and Source:

1. State's estimate of total direct dollars lost from fires in OK in 1996; \$281,229,056; Shannon Rowland, OK Fire Marshall's office.
 2. Percent of structural fires in Oklahoma in 1996 caused by smoking; 5.2%, Shannon Rowland, Oklahoma Fire Marshal's Office.
-

Loss of Property
Homeowners Insurance

Total homeowner's insurance claims were multiplied by the percentage of claims for fire damage, then multiplied by the percentage of fires caused by smoking to yield damage costs.

Total homeowner's insurance claims were multiplied by the percentage of claims for theft, then multiplied by the percentage of arrestees identified as substance abusers to yield theft and vandalism costs. These costs were summed to yield **\$7,365,345**.

Data and Source:

1. Total value of homeowners' insurance claims in 1996; \$113,629,407, Don Beckle, Insurance Service Office, Inc. Dallas, Texas, 1995 data.
 2. Percentage of these claims for fire damage; 10%, Don Beckle, Insurance Service Office, Inc. Dallas, Texas, 1995 data.
 3. Percentage of these claims for theft and vandalism; 8.5%, Don Beckle, Insurance Service Office, Inc. Dallas, Texas, 1995 data.
-



Loss of Property State Parks Department

Chief Ranger Larry Habegger, Oklahoma State Parks, estimated that at least 1% of the \$1,209,000 salaries of the 56 full time rangers was devoted to patrolling the parks because of substance use/abuse.

Similarly, Melinda Sturgis, Oklahoma Wildlife Conservation, estimates that 75% of one warden's salary (\$26,061), an additional \$3,600 for housing the warden, and 50% of one area manager's salary (\$30,000) is devoted to patrolling Tishomingo Blue River Wild Life Management because of substance use/abuse.

Finally, Chief Ranger Larry Habegger reports that there was \$50,000 in property damage in Oklahoma State parks in 1996.

Together, these estimates result in a cost of **\$100,236**.

Data and Source:

1. Cost of patrolling the parks because of substance use/abuse; \$50,236; Melinda Sturgis, Wildlife Conservation and Larry Habegger, OK Department of Tourism and Recreation.
2. Cost of cleaning up or repairing damage due to vandalism as a result of substance use/abuse. NA.
3. Cost of property damaged resulting from substance use/abuse; \$50,000; Larry Habegger, OK Department of Tourism and Recreation.

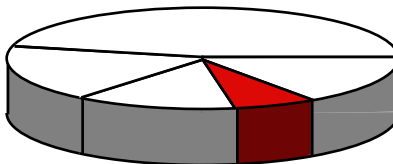
Property Losses Summary of Costs Due to Substance Abuse

PROPERTY LOSS	FEDERAL	STATE	LOCAL	PRIVATE	TOTAL
Stolen Property				103,676,552	103,676,552
Fire Damage (Tobacco Related)				11,845,368	11,845,368
Homeowners Insurance				7,365,345	7,365,345
<u>State Parks</u>		<u>100,236</u>			<u>100,236</u>
TOTALS		100,236		122,887,265	122,987,501

Property Losses ... as a percent of total direct expenditures in Oklahoma ...

7%

Health Care Services	253,820,602	14%
Criminal Justice	354,655,027	19%
Social Services	837,800,064	45%
Costs to Business	296,805,676	16%
<u>Property Loss Costs</u>	<u>122,987,501</u>	<u>7%</u>
TOTAL EXPENSE	1,866,068,870	100%



Section 6

Loss of Productivity

... a study of the fiscal impacts of those who abuse alcohol and use illegal drugs ...
for the State of Oklahoma for 1996



Presented March 31, 1998

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Loss of Productivity
The Costs of Alcohol & Drug Abuse to Oklahoma ¹

Alcohol and drugs do not only affect the individual abuser, but the economy as a whole. Whereas, it is impossible to put a dollar value on a human life, economists rely on the Human Capital Approach (1), which estimates the value of a productive member of society by what he/she adds to the economy. Each individual's addition to the economy is quantified by his/her income. The basis behind the human capital approach is that the marginal product or what an individual adds to total productivity equals his/her wage rate or income. There are several assumptions that must be made in order to use this approach:

- The market must be free of biases in income due to discriminatory processes
- There are no market failures that artificially lower or raise incomes (i.e., a monopsony)
- That the wage rate/income equals the marginal product per worker

Whereas these assumptions may not be fully realized, the human capital approach has merit in determining the value that a productive member in society contributes to the whole economy. The other studies on assessing the costs of substance abuse also used this approach, so there is precedence for using this model here (2,3,4).

In order to estimate a life-time earnings potential from a specific starting date, an individual's current income is divided by an appropriate discount rate and summed over time. A discount rate is used because future dollars are worth less than current dollars. This is called the *present value of life time earnings*. The methodological approach for assessing the present value of life time earnings is given in Formula B.

By applying this method and accounting for annual productivity increases of 1% per year (4), the discount rate of 5.9% (the 30 year U.S. treasury bond, which is often referred to as the risk free discount rate as reported in the January 25, 1998 New York Times), a potential labor force of 1,616,000, a labor force participation rate of .965 and a median income for all working Oklahomans of \$27,700 (Oklahoma Department of Commerce, 1997) ²: the total median life time earnings for Oklahoma – barring any disabilities – in 1997 equaled \$881,833,700,000. In other words, this amount reflects the total productivity potential of Oklahomans and provides a benchmark for productivity losses for the state due to substance abuse.

Alcohol Abuse

In order to estimate the total productive costs due to drinking, an approach used by other state studies (2,3) will be followed.

First, an estimate must be made regarding the number of individuals in the work force who are drinkers. This is estimated by multiplying the drinking prevalence of chronic drinkers in the population by the number of working individuals. Using the BRFSS data (Oklahoma State Department of Health, 1994) the prevalence rate of chronic drinking (60 or more drinks/month) in 1994 was 3.2%. Using a straight

¹ Smoking Costs are excluded from this section of the report

² Unfortunately, the Oklahoma Department of Commerce could not break down median income by race and gender for the most recent year, and since the last census was in 1990, the age of that data is considered to be too old to apply here. Therefore, the median income for the entire population is used here.



line approach and following the trend increases from 1991 to 1994, the extrapolated estimate of prevalence for 1997 is 6.29%. Therefore, assuming a constant distribution of chronic drinking in the work force as in the general population, the total work force in Oklahoma was multiplied by 0.0629 to arrive at an estimate of drinkers in the work force.

Further, it has been estimated that drinkers have a 21% lower productivity rate than non-drinkers (2), therefore a 'decay in growth of productivity' was added to the discount rate. The discount rate for the total future life time earnings for drinkers is .269. The assumption used here is that drinkers will continue declining in productivity through the years and that this decline is cumulative. This method is more fully described in Formula C (Section 7, References).

Utilizing this approach the total estimated life time earnings for chronic drinkers equal \$10,119,780,000. Had these individuals not been chronic drinkers, their total estimated life time earnings would have been \$55,555,530,000 or a difference of **\$45,435,750,000 (an annualized \$3,549,428,698) which represents the total cost to the state's economy attributed to chronic alcohol use.** The cost is realized if the individual stays in the workforce and continues to drink. If this is the case, his/her income should be 21% lower than a non-drinking worker. However, since wages are 'sticky' i.e., wages are paid the same by employee category, the drinking worker receives an inflated wage for a lower productivity level. This is a cost to the economy in terms of higher prices for the final good or service.

In a recent article in the The Economist (December 13, 1997, pps. 24-27), it is reported that Oklahoma is currently in a state of "under/full employment" which implies a shortage of labor. Firms such as AT&T and Southwest Airlines which recently opened new offices are offering higher than average wages, implying that the state's labor force productivity should rise with the higher wages (as well as median income).

However, these increases are dependent on the currently strong economy in Oklahoma and the relatively low prevalence of chronic drinking in the state vis-a-vis the United States as a whole (21.8%) or the Southern Region (19.2%) (Oklahoma Department of Health, 1997). If the economy continues to strengthen and median income continues to rise and/or if the prevalence of chronic drinking continues to rise, then the total costs to the state for alcohol abuse will surely rise beyond the relatively conservative figures presented here.

Illegal Drug Use

Similar to individuals who are chronic drinkers, users of illegal substances likewise are expected to have lower productivity. Employing the same assumptions given above, a similar analysis is given for substance abusers in the work place. The prevalence rates for the use of illegal drugs are given in Table 9. A prevalence rate here is defined as the number of existing cases who are substance users including all old and new cases.

These figures reflect the findings elsewhere (4) that marijuana is the most likely cause of lower worker productivity. This result makes sense since the other illegal drugs presented in Table 9 (Section 7, References) may prohibit working at all because of their affect on an individual's capacity to be cogent vis-a-vis recreational marijuana use. It was assumed that abusers of other illegal drugs such as cocaine, heroin, etc., would render an individual incapable of holding a job.

Once again, the same assumptions regarding the distribution rate of illegal drug use (defined as any monthly usage) is equal among the labor force as in the general population, and the lower productivity levels due to drug use will be used here.



Applying the same work force participation rates and median income levels, the total present value of life time earnings for marijuana users is \$4,497,679,892. If these individuals had not used marijuana, their present value of life time earnings would have been \$24,691,340,000 or a difference of \$20,193,660,108. Identical calculations are performed for other substances yielding a difference of \$11,254,689,026.

Combining the marijuana differential (\$20,193,660,108) with the other illegal drug differential (\$11,254,689,026) ... **yields a total of \$35,946,029,026 (or an annualized amount of \$2,148,927,304).**

Non- Employment

Being employed is not the only value an individual has for society. Home-makers, volunteers, those who are searching for work et cetera also have time value. Whereas, the market provides a convenient vehicle for estimating the value of employed individuals (i.e., median income as used here); no straightforward approach exists outside the labor market. Therefore, other assumptions must be used.

One approach economists have used is to value leisure time at half the income level (5). Another approach is to value leisure time at more than the prevailing income, because those individuals have a higher reservation wage, e.g., they value time more than the prevailing wage rates (1). The reservations wage that will be used here is that leisure time is valued at 1.50 times the income rate since overtime wages are often 1.5 times the regular working hours wage. The valuation of non-working time is relevant since these hours can be used in highly productive services such as family responsibilities, child rearing, volunteer services to name a few.

Currently, the Oklahoma labor force participation equals 96.5%; which leaves 3.25% out of formal employment. Multiplying this rate (3.25%) by the potential labor force figures results in 56,560 individuals currently out of the labor market. Assuming that these individuals stay out of the labor market, their present value of life time earnings will range from \$814,032,610 (assuming time value is half the median income) to \$2,505,411,478 (in the case that time value is 1.5 times the median income rate).

If these individuals are chronic drinkers or illegal drug abusers, the value of their time would also be reduced in the same way that workers' productivity is reduced. The present value of time for chronic alcohol users in this group ranges from \$165,613,531 to \$549,514,042.

The costs to society of this drinking population is a range of \$195,589,706 - \$648,419,079.

Using the same approach as used for chronic drinkers, the societal costs of illegal drug users (2.8%) to society ranges from \$287,889,094 - \$911,831,482.³ By combining the lower estimates, we may conservatively say the lifetime costs are **\$483,478,800 (or an annualized \$55,974,422)**. This estimate assumes that lost productivity is valued at the half of the median income.

Fetal-Alcohol Syndrome

In addition to the direct health care costs of Fetal Alcohol Syndrome (FAS) presented above, there are societal costs associated with the loss of productivity for FAS adults. Using the calculations presented in table 10 the estimated life time economic costs from FAS will be derived.

An estimate of the total number of FAS individuals in Oklahoma (assuming a stable FAS rate) equals 3,331. Of these individuals 49% (1,632) may be assumed to be at labor force participation age. Within

³ A data set is currently being constructed by the Oklahoma Department of Mental Health and the Center for Economic and Management Research – University of Oklahoma that will provide more precise data in the future.



this population of 1,632, 41 are severely retarded, 734 are moderately retarded, and 857 are mildly impaired. The estimated present value of the life time earnings lost due to FAS are found in the same manner as the total present value of life time earnings for workers. However, the reduction of productivity is shown in the income rate rather than the discount rate because these individuals are assumed to enter the labor market at lower wages and more menial labor due to their mental disabilities.

The total productivity costs (measured as the difference between what these individuals could have earned and what they do earn due to their disability) by FAS category are:

- \$ 19,249,152 for the severely retarded (100% productivity loss)
- \$172,303,389 for the moderately retarded (50% productivity loss)
- \$100,588,559 for the mildly retarded (25% productivity loss)

This sums to a total in the present value of life time earnings potential loss of **\$292,141,100 ... or \$17,236,325** for a single year.

Premature Mortality

Economic Costs can also be evaluated for individuals who die prematurely due to alcohol and/or drug overdoses.⁴ The data for this section were obtained from the Oklahoma Medical Examiners Office. From this report, 180 out of the 691 vehicular fatalities in Oklahoma from April through December, 1997 were attributed to alcohol (26%). Sixty eight (68) individuals died prematurely from accidental deaths due to alcohol and drug poisoning. Fifty one (51) other individuals committed suicide via alcohol or drug overdose.

Applying the human capital approach the estimated economic costs of these deaths equal \$156,944,309⁵ for the nine month period April through December, 1997. **This is \$208,735,931 for a 12-month amount (or \$12,315,419 annually).**

*Conservative Estimate. Approximately 10% of the total present value of Oklahoma’s Labor Force is lost through substance abuse.

<u>Summary of Total Economic/Societal Costs</u>	<u>Lifetime Costs</u>	<u>Annualized Costs</u>
Lost Productivity Costs due to Alcohol	\$45,435,750,000	\$3,549,428,698
Lost Productivity Costs due to Illegal Drugs	\$35,946,029,026	\$2,148,927,304
Lost Productivity Costs for the Non-Employed*	\$483,478,800	\$36,532,527
Fetal Alcohol Syndrome	\$292,141,100	\$17,236,325
<u>Premature Mortality</u>	<u>\$156,944,309</u>	<u>\$12,315,419</u>
Total	\$96,708,482,608	\$5,764,440,273

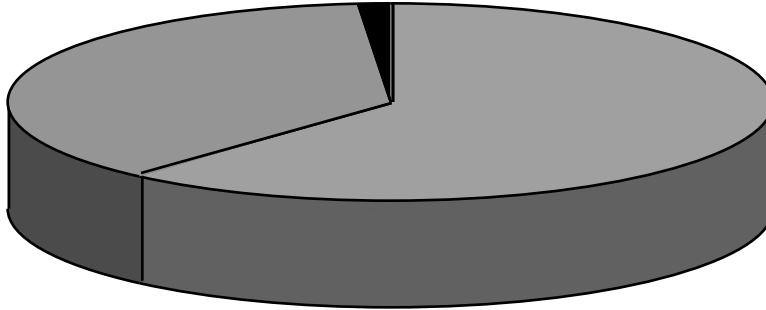
⁴ In order to avoid double counting, the economic costs of premature death due to illness related deaths due to alcohol and drug use were not included here, because they have been implicitly included in the productivity loss sections and the health care section of this report.

⁵ No assumptions were made in the human capital approach used here about productivity increases or decreases over time, since no information was provided by the M.E.’s office regarding habitual use of a substance.



Loss of Productivity Summary of Costs Due to Substance Abuse

<u>LOSS OF PRODUCTIVITY</u>	<u>TOTAL IMPACT</u>	
Alcohol	3,549,428,698	Striped
Illegal Drugs	2,148,927,304	Gray
Non-Employed	36,532,527	Black
Fetal-Alcohol Syndrome	17,236,325	Black
<u>Premature Mortality</u>	<u>\$12,315,419</u>	Black
TOTALS	\$5,764,440,273	



Section 7

Appendices

... a study of the fiscal impacts of those who abuse alcohol and use illegal drugs ...
for the State of Oklahoma for 1996



Presented March 31, 1998



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Health Care Costs and Loss of Productivity
(Vivian Valdmanis)

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Loss of Productivity Formulas

Formula A

1) Total Charges by Substance =
$$\sum_{i=1}^{n} (\# \text{ cases})(\text{disease category})(\% \text{ attributable risk})$$

Percent Attributable Risk means the % of cases caused by a particular substance. (The % Attributable Risk data used for this report are from The Costs of Substance Abuse in New York City: Joseph Califano et al, 1997)

For all $i = (1, \dots, I)$ = type of substance

2) Cost/Charge ratio =
$$\frac{\text{Total Charges} - \text{net revenues}}{\text{Total Charges}}$$

Where n is the total number of hospitals. The mean ratio (.38) was multiplied with Total Charges to define costs faced by the hospital.

3) Medicaid Charges for Hospitals =
$$\text{Total Charges Per Substance} * \frac{\text{Medicaid Revenues}}{\text{Total Revenues}}$$

Formula B

Human Capital Approach

$$\sum_{t=1}^T \frac{\text{Labor Force Participation Rate} * \text{Labor Force} * \text{Median Income}}{(1 + r - g)^t}$$

which reduces to ^{a)}

$$\frac{\text{Labor Force Participation Rate} * \text{Labor Force} * \text{Median Income}}{(r - g)}$$

Values

The median income for Oklahoma is (1996)	\$27,700 ^b
Labor Force (1997)	\$1,616,500 ^b
Labor Force Participation Rate	.965
Treasury Bond Rate (r)	5.9% ^c
Average Yearly Growth Rate of Productivity (g)	1% ^d

- a) As the time frame for evaluating present value of lifetime earnings increases, the expression $(1 + r - g)^t$ reduces to $r - g$. Given the median age in Oklahoma is 34.9 (Oklahoma Department of Commerce, 1997), the median working life is 30 years, the reduced form of the discount rate can be used (Gramlich, 1990).
- b) Oklahoma Department of Commerce
- c) Treasury Bond Value of 5.9% - risk free investment rate
- d) Washington Report on the Costs of Substance Abuse (Wickizer, et al, 1993)

Formula C

$$\frac{\text{Prevalence Rate of Substance use}^{(a)} * (\text{LFP rate}) * (\text{Labor Force}) * (\text{Median Income})}{r + d}$$

Where r is the discount rate and d is the productivity loss due to substance use, which in this case is 21%^b. This added to the discount rate since a drop in productivity adds to the discounting value over the working life.

- a) .0629 for alcohol; .028 for marijuana use
- b) Texas Study, 1989

Table 1
Disease/Conditions Attributable to Substance Abuse for Oklahoma, 1995
 (Source: Attributable Risks Source CASA Report (Califano, et al, 1997))

<u>DISEASE</u>	<u>SUBSTANCE</u>	<u>%</u>	<u>DISEASE</u>	<u>SUBSTANCE</u>	<u>%</u>
<u>Cancer</u>			<u>OB/Gyn</u>		
• Oral	Smoking	85	• Pelvic Inflamm Disease	Smoking	33
• Pharyngeal	Alcohol/Smoking**	80	• Spontaneous Abortion	Smoking/Cocaine	41
• Colorectal	Alcohol	17	• Pregnancy:Bleeding	Smoking	19
• Esophageal	Alcohol & Smoking	80	• Premature Rupture	Smoking	32
• Stomach	Smoking	36	• Ectopic Pregnancy	Smoking	74
• Anal	Smoking	46	• Previa	Smoking	43
• Liver	Alcohol	29	• Perinatal Death	Smoking	17
• Pancreatic	Smoking	30	• Low Birth Weight*	Smoking	42
• Laryngeal	Alcohol/Smoking	87	• Premature Delivery	Smoking	25
• Lung	Smoking	82			
• Breast	Alcohol	13	<u>Digestive</u>		
• Cervical	Smoking	21	• Stomach Ulcer	Smoking	34
• Bladder	Smoking	48	• Stomach Ulcer	Alcohol	13
• Kidney	Smoking	33	• Duodenal Ulcer	Smoking	52
• Leukemia	Smoking	30	• Duodenal Ulcer	Alcohol	5
• Ureter	Smoking	71	• Peptic Ulcer	Smoking	29
• Brain***	Smoking	20	• Alcoholic Gastritis	Alcohol	100
• Brain	Alcohol	27			
• Renal/Pelvis	Smoking	36			
			* Does not include Fetal Alcohol Syndrome (see later section of this report)		
<u>Heart Disease</u>			<u>Hepatitis</u>		
• Myocardial Infarction	Smoking	55	• A	IV Drugs	6
• Angina	Smoking	16	• B	IV Drugs	12
• Coronary Heart Dis.	Smoking	52	• C	IV Drugs	36
• Coronary Artery Dis.	Smoking	74			
• Endo Carditis	IV Drug Use	75	Epilepsy	Alcohol	30
• Cardio-Myopathy	Alcohol	40	Dementia	Alcohol & Drugs	8
			Cataracts	Smoking	6
<u>Pulmonary Disease</u>			Periodontitis	Smoking	40
• COPD	Smoking	82	Cirrhosis	Alcohol	74
• Pneumonia	Smoking	36	Rheumatoid Arthritis	Smoking	17
• Asthma	Smoking	27	Low Back Pain	Smoking	10
• Bronchitis	Smoking	36	Trauma	Alcohol & Drugs	40
			Burns	Alcohol & Drugs	25
Stroke	Smoking & Cocaine	65	<u>Pancreatitis</u>		
Hypertension	Alcohol	11	• Acute	Alcohol	47
Influenza	Smoking	45	• Chronic	Alcohol	72

100% Substance Abuse Disease Categories

Alcohol Amnesia	Alcohol Abuse	Alcoholic Deliveries	Alcohol Dependency
Alcohol Diagnosis	Alcohol Neuropathy	Alcohol Poisoning Drug Abuse	Drug Dependent Delivery
Drug Diagnosis	Drug Neuropathy	Drug Poisoning	Overdose Prescription Drugs

* % Attributable Risks Source CASA Report (Califano, et al, 1997)

The general formula is given as:

$$\frac{Pe (Ie - Iu)}{Pt * It} * 100$$

Where Pe = number of persons exposed
 Pt = persons in the population
 Ie = incidence rate among the exposed
 Iu = incidence rate among the unexposed
 It = incidence rate for the total population

(Source: A Dictionary of Epidemiology (1988), John M. Last, Editor, Second Edition, Oxford University Press: London)

** Risk factors considered in Tandem as either and/or or combined together

*** The attributable risks were separated by risk factors and not considered in tandem

Table 2
Smoking and Drinking Prevalence Rates by Income, Oklahoma, 1995

(Source: 1991 - 1994 Oklahoma Behavioral Risk Factor Surveillance System Report, Oklahoma State Department of Health, 1996).
 Unfortunately, no comparable estimates were given for drug abuse).

<u>Income Levels</u>	<u>Smoking</u>	<u>Chronic Drinking*</u>
< 10,000	30.97	1.99
10 - 14,999	32.78	3.09
15 - 19,999	28.29	3.69
20 - 24,999	28.92	2.36
25 - 34,999	27.10	3.19
35 - 49,999	22.71	2.71
≥ 50,000	17.54	2.06

* Chronic Drinking is defined as an average of 60 or more drinks per month.

Table 3
Inpatient Hospital Charges in Oklahoma for 1996 by Public or Private Source

(Calculated using data from the Division of Health Care Information (DHCI), Health Care Financing Authority)

<u>Category</u>	<u>Federal</u>	<u>State</u>	<u>Private</u>	<u>Total</u>
Smoking	202,986,384	15,846,521	158,465,207	377,298,111
Drugs	3,584,301	279,815	2,798,153	6,662,269
Alcohol	18,562,403	1,449,110	14,491,095	34,502,607
Smoke/Alcohol	2,022,868	157,919	1,579,191	3,759,978
Drugs/Alcohol	72,236,470	5,639,278	56,392,783	134,268,531
Drugs/Smoking	6,728,066	1,583,962	29,401,350	37,713,378
<u>Prescriptions</u>	<u>2,150,882</u>	<u>167,912</u>	<u>1,679,127</u>	<u>3,997,921</u>
Total	308,271,372	25,124,517	264,806,906	598,202,795
Total (less smoking)	105,284,989	9,277,996	106,341,699	220,904,684

Table 3a
Inpatient Hospital Charges in Oklahoma for 1996 by Category of Payor

(Calculated using data from the Division of Health Care Information (DHCI), Health Care Financing Authority)

<u>Category</u>	<u>Medicaid</u>	<u>Other Govt</u>	<u>Private</u>	<u>Total</u>
Smoking	52,821,735	166,011,169	158,465,207	377,298,111
Drugs	932,717	2,931,399	2,798,153	6,662,269
Alcohol	4,830,365	15,181,147	14,491,095	34,502,607
Smoke/Alcohol	526,397	1,654,390	1,579,191	3,759,978
Drugs/Alcohol	18,797,594	59,078,154	56,392,783	134,268,531
Drugs/Smoking	5,279,873	3,032,155	29,401,350	37,713,378
<u>Prescriptions</u>	<u>559,708</u>	<u>1,759,086</u>	<u>1,679,127</u>	<u>3,997,921</u>
Total	83,748,389	249,647,500	264,806,906	598,202,795
Total (less smoking)	30,926,654	83,636,331	106,341,699	220,904,684

Table 3b
Inpatient Hospital Charges in Oklahoma for 1996 by Category of Substance

<u>Category</u>	<u>Total</u>	<u>Pct SA</u>	<u>Pct All</u>
Smoking	377,298,111	63.1%	12.6%
Drugs	6,662,269	1.1%	0.2%
Alcohol	34,502,607	5.8%	1.2%
Smoke/Alcohol	3,759,978	0.6%	0.1%
Drugs/Alcohol	134,268,531	22.4%	4.5%
Drugs/Smoking	37,713,378	6.3%	1.3%
<u>Prescriptions</u>	<u>3,997,921</u>	<u>0.7%</u>	<u>0.1%</u>
Total	598,202,795	100%	20.0%
Total (less smoking)	220,904,684	36.9%	7.4%



Table 4
The Number of Attributable Risk Cases by Substance
 (Based upon 348,126 hospital cases)

<u>Substance</u>	<u>Cases</u>	<u>Percent of all SA Cases</u>	<u>Percent of all Hospital Cases</u>
Smoking	25,164	61%	7%
Drugs/Alcohol	6,371	15%	2%
Alcohol	5,241	13%	2%
Drugs/Smoking	1,912	5%	1%
Drugs	1,364	3%	0%
Prescription Drugs	799	2%	0%
<u>Smoking/Alcohol</u>	<u>362</u>	<u>1%</u>	<u>0%</u>
Total	41,213	100%	12%

Table 5
Average Expenditure/Case by Substance

<u>Substance</u>	<u>Average Expense Per Case</u>	<u>Average Cost Per Case</u>
Drugs/Alcohol	21,075	8,009
Drugs/Smoking	19,724	7,495
Smoking	14,994	5,698
Smoking/Alcohol	10,387	3,947
Alcohol	6,583	2,502
Prescription Drugs	5,004	1,901
<u>Illegal Drugs</u>	<u>4,884</u>	<u>1,856</u>
All Patients	8,610	3,272

Table 6
Contracted Outpatient Costs
 Source: The Department of Mental Health and Substance Abuse

<u>Service</u>	<u>Dollar Cost</u>	<u>% of Costs</u>
Outpatient - Contract	2,031,718	32.7
Residential	1,818,694	29.3
Detoxification	1,086,074	17.5
Half-Way Abuse	948,737	15.2
Prevention	236,096	4.0
<u>Revolving Abuse Funds</u>	<u>94,947</u>	<u>1.5</u>
TOTAL	6,216,767	100.0



Table 7
Number of DMH Clients by Type of Addiction

<u>Type of Addiction</u>	<u>Number of Clients</u>	<u>% of Total</u>
Alcohol	6,937	31.1
Drugs	5,224	23.5
Poly-Substance use	4,218	18.9
<u>Non Responding</u>	<u>12,943</u>	<u>26.5</u>
TOTALS	29,322	100.0

Table 8
Risk Factors of Drinking During Pregnancy
Source: Division of Child and Maternal Health, Oklahoma State Department of Health.

<u>Risk Factors</u>	<u>Percent Non-Drinking</u>	<u>Percent Drinking 7+ Weekly Drinks</u>
Unintended Pregnancy	29.5	57.6
Late or No Prenatal Care	19.2	29.5
Smokes	16.4	50.6
Domestic Abuse	4.7	13.3

Table 9
Prevalence Rate of Illegal Substances in Oklahoma
Source, Oklahoma State Department of Mental Health, 1997

<u>Substance</u>	<u>Prevalence Rate</u>
Stimulants	.00065
Hallucinogens	.00065
Marijuana	.00028
Inhalants	.00017
Heroin	.00009
Sedatives	.00006
Cocaine	.00003

For example, there are 28 marijuana users per 10,000 population; and 9 heroin users per 10,000 population.



Section 7

Accompanying 35mm Slides

... a study of the fiscal impacts of those who abuse alcohol and use illegal drugs ...
for the State of Oklahoma for 1996



Presented March 31, 1998





Everyone Pays

*Estimated Costs of
Alcohol Abuse ... Use of Illegal Substances*

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*Federal Taxpayer
~ \$860 million*

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*State Taxpayer
~ \$330 million*

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*Local Taxpayer
~ \$130 million*

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*Oklahoma Private Business
~ \$547 million*

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*The State Economy
almost \$6 billion!*

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Every Household ~ \$1,000 Federal, State/Local Taxes

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Expense to Taxpayers

Local	7%
State	25%
Federal	66%

~ \$1.3 billion

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Everyone Pays

Business	29%
Governments	71%

~ \$1.9 billion

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Everyone Pays

Lost Productivity	76%
Budgets Public/Private Expenditures	24%

~ \$7.6 billion

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We Pay Cash ...

❖ Health Care Services	\$254 million
❖ Social Services	\$838 million
❖ Criminal Justice	\$355 million
❖ Private Business	\$297 million
❖ Property Loss Costs	\$123 million

~ \$1.9 billion

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For This ...

Other	37%
Criminal Justice	19%
Social Services	45%

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and Economic Losses

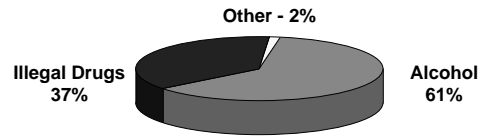
❖ Alcohol	\$3.5 billion
❖ Illegal Drugs	\$2.1 billion
❖ Non-Employment	\$36 million
❖ Fetal Alcohol Syndrome	\$17 million
❖ Premature Mortality	\$12 million

\$5.8 billion

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Caused By...



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14

Everyone Pays

❖ Federal Government	~ \$860 million
❖ State Government	~ \$330 million
❖ Local Government	~ \$130 million
❖ Private Sector	~ \$547 million
❖ State Domestic Product	~ \$6 billion

~ \$7.6 billion

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The 7% "Stealth Tax"

State expenditures that were attributable to substance abusers were \$330 million ... **7%** of 1996 state tax receipts

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Can You Spare It?

That's **\$100 in state taxes** for every man, woman and child in Oklahoma ... or **\$260 in state taxes** for every household.

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17

Health Care Services

❖ Inpatient Costs	\$227million
❖ Mental Health	\$20 million
❖ Indian Health Service	\$7 million
❖ Fetal Alcohol Syndrome	\$.5 million

\$254 million

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18

Criminal Justice

❖ Adult Jails/Prisons	\$162 million
❖ Law Enforcement	\$143 million
❖ Parole/Probation	\$16 million
❖ Victims (motor & crime)	\$14 million
❖ Prosecution	\$13 million
❖ Indigent Defense	\$6 million
❖ Housing Authority	\$257 k

\$355 million

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19

Social Services ...

❖ OASDI (Disability)	\$650 million
❖ Food Stamps	\$61 million
❖ Juvenile Corrections	\$46 million
❖ Temp Assist/Needy Families	\$26 million



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Social Services ...

❖ Foster Care	\$14 million
❖ Prevention/Protective Services	\$14 million
❖ Private Charities	\$7 million
❖ Supplemental Social Security	\$6 million



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Social Services

❖ Special Education	\$9 million
❖ Substance Abuse Prevention	\$3 million
❖ Employment Training	\$1 million
❖ Emergency Shelters	\$.7 million
❖ Housing	\$.5 million

\$838 million

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Private Business

❖ Security	\$244 million
❖ Workers Compensation	\$39 million
❖ Insurance Protection	\$14 million

\$297 million

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Property Losses

❖ Stolen Property	\$104 million
❖ Fire Damage	\$12 million
❖ Homeowners Insurance	\$7 million
❖ Parks	\$100 k

\$123 million

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*If that's the problem ...
... what's the solution?*

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Recommendations

1

2

3

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26

Recommendations

4

5

6

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27

"Everyone Pays" Video

- ❖ Costs
 - ❖ Higher than we know
 - ❖ Human costs incalculable
- ❖ State is not well organized to respond
 - ❖ Many states are not ... need public leadership
- ❖ Success is possible
 - ❖ Valley Hope
 - ❖ Drug Courts

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*Prepared for
The Governor's Task Force
on Substance Abuse in Oklahoma*

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*Prepared by
The Oklahoma Academy
Oklahoma State University
University of Oklahoma HSC*

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30

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32

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33

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34

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35

The End

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36