The Economic Costs

of

Alcohol and Drug Abuse

in

Maine, 2000

Division of Data and Research
Office of Substance Abuse
Department of Health and Human Services
Augusta, Maine

July 2004

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by

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TABLE OF CONTENTS

Acknowledgments ii

List of Tables vi

List of Figures viii

Chapter 1: Introduction 1
- Introduction and Background 1
- Methodology 2
- Limitations 3
- Organization 3

Chapter 2: Substance Abuse Treatment 4
- Major Findings 4
- Methodology 5
- Results 5
- Summary 10

Chapter 3: Morbidity 11
- Major Findings 11
- Methodology 12
- Results 13
- Summary 18

Chapter 4: Mortality 19
- Major Findings 19
- Methodology 20
- Results 21
- Summary 27

Chapter 5: Crime 28
- Major Findings 28
- Methodology 29
- Results 31
  - Law Enforcement 31
    - Police Protection 31
    - Substance Control: Prevention and Drug Supply Reduction 32
  - Judicial 33
  - Corrections 34
    - State 34
    - County 35
  - Other 36
    - Productivity Losses Due to Incarceration 36
    - Property Destruction 38
    - Criminal Victimization 39
- Summary 40

Chapter 6: Medical Care 41
Major Findings 41
Methodology 42
Results 42
Hospital Inpatient and Outpatient 42
Fetal Alcohol Syndrome 48
Prescription Drugs and Nursing Homes 50
Summary 51

Chapter 7: Other Related Costs 52
Major Findings 52
Methodology 53
Results 53
Social Welfare 53
Child Welfare 53
Other Social Welfare Administration 54
Fire Protection and Destruction Due to Fire 56
Motor Vehicle Crashes (Non-Medical Costs) 57
Summary 58

Chapter 8: Summary 59
Major Findings 59
Overview 60
Maine versus Washington State 62
Maine versus the United States 65
Conclusions 68

References 69

Appendices

A.1 Calculation of the Labor Force Participation Rate

A.2 Calculation of Morbidity Costs

B.1 Formula for Calculating the Current Value of Lifetime Earnings

B.2 Calculation of Mortality Costs Due to Substance Use Disorders

C.1 Total Hospital Inpatient Charges for Specific Diagnosis or Condition, Maine, 2000

C.2 ICD-9 Codes and Alcohol Attributable Fractions for Alcohol-Related Injuries and Associated Hospital Inpatient Charges, Maine, 2000

C.3 Total Hospital Outpatient Charges for Specific Diagnosis or Condition, Maine, 2000

C.4 ICD-9 Codes and Alcohol Attributable Fractions for Alcohol-Related Injuries and Associated Hospital Outpatient Charges, Maine, 2000

Table of Contents (continued)

D Calculation of Estimated Non-Medical Costs of Alcohol-Related Motor Vehicle Crashes, Maine, 2000

E Summary: Estimated Cost of Alcohol and Drug Abuse by Category, Maine, 2000

F Estimated Total and Per Capita Costs of Substance Abuse, United States, 2000

LIST OF TABLES

Table **Page**

2.1 Treatment Funding by Payer, Maine, 2000 6

2.2a Number of Admissions for Treatment by Type of Disorder, Maine, 2000 7

2.2b Number of Clients Receiving Treatment by Type of Disorder, Maine, 2000 7

2.3 Number of Admissions for Treatment by Ethnic Group, Maine, 2000 8

2.4 Number of Admissions for Treatment by Age, Maine, 2000 9

3.1 Estimated Prevalence of Alcohol and Drug Use Disorders by Age and Gender, Maine, 2000.....14

3.2 Estimated Labor Force Participation Rates and Number of Employed and Unemployed Persons with Substance Use Disorders by Age and Gender, Maine, 2000.....15

3.3 Estimated Earnings, Housekeeping Values, and Impairment Rates by Age and Gender, Maine, 2000.....16

3.4 Total Morbidity Costs by Age and Gender, Maine, 2000.....17

4.1 Estimated Number of Alcohol- and Drug-Related Deaths by Age and Gender, Maine, 2000 21

4.2 Estimated Number of Deaths Attributable to Alcohol by Diagnosis and Gender, Maine, 2000.....22

4.3 Estimated Number of Deaths Attributable to Drugs by Diagnosis and Gender, Maine, 2000.....24

4.4 Estimated Mortality Costs and Years of Potential Life Lost, Maine, 2000.....26

5.1 Estimated Cost of Police Protection, Maine, 2000 31

5.2 Substance Control Expenditures, Maine, 2000.....32

5.3 Estimated Legal and Adjudication Costs, Maine, 2000.....33

List of Tables (continued)

Table **Page**

5.4 Estimated Cost of State Corrections, Maine, 2000 34

5.5 Estimated Cost of County Corrections, Maine, 2000 35

5.6 Estimated Productivity Losses Due to Incarceration, Maine, 2000 37

5.7 Estimated Property Destruction Due to Crime, Maine, 2000 38

5.8 Estimated Productivity Losses for Victims of Crime, Maine, 2000 39

6.1 Estimated Alcohol- and Drug-Related Hospital Inpatient Charges, Maine, 2000 44

6.2 Estimated Alcohol- and Drug-Related Hospital Outpatient Charges, Maine, 2000 .. 46

6.3 Estimated Cost of Fetal Alcohol Syndrome, Maine, 2000 49

6.4 Estimated Costs of Prescription Drugs and Nursing Home Care, Maine, 2000 50

7.1 Estimated Administrative Costs of Selected Social Welfare Programs Attributed to Substance Abuse, Maine, 2000 55

7.2 Estimated Alcohol-Related Cost of Fire Protection and Property Damage and Destruction Due to Fire, Maine, 2000 56

7.3 Estimated Non-Medical Cost of Alcohol-Related Motor Vehicle Crashes, Maine, 2000 58

8.1 Comparison of Per Capita Medical Care Cost of Substance Abuse, Maine versus Washington, 2000 63

8.2 Substance-Related Conditions/Injuries with the Number of Discharges at Least 50% Higher than Expected, Maine, 2000 64

8.3 Estimated Per Capita Substance Abuse Costs, Maine versus the U.S., 2000 67

LIST OF FIGURES

Figure **Page**

8.1 Estimated Economic Costs of Drug and Alcohol Abuse in Maine, 2000.....60

8.2 Distribution of Drug and Alcohol Costs, Maine, 2000.....61

8.3 Costs of Alcohol versus Drug Abuse, Maine, 2000.....61

8.4a Costs of Substance Abuse, Maine, 2000.....62

8.4b Costs of Substance Abuse, Washington State, 2000.....62

8.5a Costs of Alcohol versus Drug Abuse, Maine, 2000.....65

8.5b Costs of Alcohol versus Drug Abuse, United States, 2000 65

8.6a Costs of Substance Abuse, Maine, 2000.....66

8.6b Costs of Substance Abuse, United States, 2000 66

Chapter 1

Introduction

Introduction and Background

The problem of alcohol and drug abuse continues to be a major social concern, with serious personal, social and economic consequences for Maine and the nation. Alcohol and drug abuse are major causes of widespread illness, disability, and premature death. The burden on society encompasses the use of costly health care resources, significant productivity (economic) losses due to morbidity, serious injuries from motor vehicle accidents, and criminal activity resulting in property damage and incarceration. Although it is not possible to quantify in monetary terms all of the consequences of drug and alcohol abuse, prior to this report the only estimate of the costs of substance abuse in Maine was a total based on an extrapolation from national data.

Similar efforts to analyze the economic costs of substance abuse have been undertaken by other states, including Washington, Texas, Minnesota, and Oregon, as well as by the federal government. This report is directly modeled after the Washington State reports for 1990 and 1996 (Wickizer et al., 1993 and Wickizer, 1999), which in turn incorporated the basic methodology of two reports done for the U.S. Department of Health and Human Services; the first was conducted by Rice et al. (1990), and the second was conducted for the National Institute of Drug Abuse (NIDA) and the National Institute of Alcoholism and Alcohol Abuse (NIAAA), (NIDA/NIAAA, 1998).

Methodology

The Washington State cost analyses and the two national studies used the same general approach: employing prevalence-based data and the human capitol method to estimate costs. Prevalence-based costs provide an estimate of the direct and indirect economic burden incurred during a time period (the base period) resulting from the prevalence of a disease (e.g., substance abuse). For this report, the base period is calendar year 2000. Prevalence-based costs measure the value of resources used or lost during a specified period of time, regardless of the time of disease onset. In estimating the economic burden resulting from the prevalence of disease, the present discounted value of future losses due to mortality is calculated.

Cost-of-illness studies, like this one, require the valuation of human life. Two approaches can be used to value life, the human capital and the willingness-to-pay approach. This study, and all previous economic cost studies, used the human capital approach, which measures an individual's value to society in terms of his or her production potential, reflected in earnings. From this perspective, the value of an individual to society is his or her earnings and the value of a life lost due to premature death becomes the discounted stream of future earnings of that individual.

Studies employing the human capital approach measure the direct and indirect costs of specific disease categories. Direct costs are those for which payments are made (e.g., for medical care or substance abuse treatment); indirect costs are those for which resources are lost (e.g., lost productivity due to morbidity or mortality). The estimation of direct costs is straightforward, but indirect costs are more difficult to analyze because they require valuation of a person's production potential. The human capital approach is based on the restrictive assumption that a person's earnings reflect his or her value. Obviously, this undervalues certain members of society: children, elderly, ethnic minorities and women. Despite its limitations, the human capital approach remains widely used and provides a useful method for analyzing the cost of disease.

Limitations

This analysis has two limitations that merit mention. First, to estimate costs related to drug and alcohol abuse, the analysis had to link different "cost factors" to alcohol and drug abuse. This was done by applying "attributable fractions" to these cost factors. For example, if 30% of all stomach cancer cases can be attributed to alcohol abuse, then 30% of all medical costs incurred in treating stomach cancer should be attributable to alcohol abuse for the report. The attributable fractions used here are the same as those used for the more recent national cost analysis (NIDA/NIAAA, 1998). While these are based on the best available information, many of the attributable fractions were developed from research conducted as much as 25 years ago. Second, although an effort was made to obtain data specific to Maine, this was not always possible. When data for Maine were unavailable, we used U.S. or Washington State per capita estimates adjusted for inflation using recently updated, category-specific values from NIDA/NIAAA (Harwood, 2000). While this method is imperfect, it reflects current best practices.

Organization

The report is organized into eight chapters. Chapters two through seven present cost estimates for each of the six cost areas analyzed: alcohol and drug treatment, morbidity, mortality, crime, medical care, and other related costs. The final chapter summarizes the findings of the analysis.

Chapter 2

Substance Abuse Treatment

Treatment services available in Maine to help persons with chemical dependency problems include various levels of residential programs, outpatient programs, opioid replacement therapy, detoxification, and specialty programs for youth, pregnant women, and persons who are diagnosed as both mentally ill and chemically addicted.

This chapter documents treatment costs in Maine for 2000 and also presents information concerning service utilization. Complete and detailed information regarding treatment costs is difficult to obtain because of the multiplicity of funding sources and the large number of programs. The best single source of current information on treatment cost is the Treatment Data System (TDS) maintained the by the Maine Office of Substance. The service utilization data presented in this chapter are from the TDS.

Major Findings

- 16,706 admissions for drug and/or alcohol treatment were reported during 2000.
- These admissions represent an unduplicated count of 11,620 clients.
- The total estimated cost of providing treatment in Maine in 2000, based on reported annual revenue, was $19.3 million.
- Of this amount, the largest proportion, $5.2 million (26.7%), was paid out of State General Funds, followed by Medicaid, $4.4 million (22.8%) and Substance Abuse Prevention and Treatment Block Grant monies, $4.3 million (22.4%).
- Only 13.7% of treatment costs ($2.7 million) were paid by private funding sources.

Methodology

Cost estimates in this chapter were derived from OSA's fiscal records (OSA, 2003a), and treatment service information came from the TDS database (OSA, 2003b). The TDS contains data collected when a client is admitted and discharged from substance abuse treatment services, and used to evaluate treatment utilization and effectiveness. The data in the TDS are collected from approximately 90% of the treatment facilities throughout the State. The proportion of clients whose data are in the TDS is even higher because the facilities that are not required to report are generally small. The facilities that are required to report to the TDS are those that are: 1) funded by OSA, 2) reimbursed by Medicaid for substance abuse treatment, 3) licensed to dispense methadone or 4) private practitioners certified by the Driver Education and Evaluation Program for clients with DUI offenses.

Results

Major sources of treatment funding are shown in Table 2.1. Treatment costs totaled approximately $19.3 million. The single largest source of payment was the State General Funds, $5.2 million (26.7%), followed by Medicaid and Medicaid seed money, $4.4 million (22.8%), and the federal Substance Abuse Prevention and Treatment Block Grant monies, $4.3 million (22.4%). These three sources account for $13.9 million or 71.9% of total treatment funding. Only $2.7 million (13.7%) was paid by private sources.

Table 2.1
Treatment Funding by Payer, Maine, 2000

Funding Source	Funding [1]	Percent of Total (%)	Alcohol (78%) [2]	Drugs (22%) [2]
Public Funding				
State General Funds	$5,153,494	26.7%	$4,019,725	$1,133,769
Driver Education & Evaluation Program (DEEP)	$877,792	4.5%	$684,678	$193,114
Medicaid	$150,000	0.8%	$117,000	$33,000
Medicaid Seed				
State Share [3]	$1,075,000	5.6%	$838,500	$236,500
Federal Share	$3,182,576	16.5%	$2,482,409	$700,167
Substance Abuse Prevention & Treatment Block Grant [4]	$4,327,736	22.4%	$3,375,634	$952,102
Other Federal Government Funds	$1,007,000	5.2%	$785,460	$221,540
Local Government Funds	$631,000	3.3%	$492,180	$138,820
Other Public Funds	$250,000	1.3%	$195,000	$55,000
Total Public Funding	**$16,654,598**		**$12,990,586**	**$3,664,012**
Private Funding				
Client Payments	$1,590,000	8.2%	$1,240,200	$349,800
Private Health Insurance	$688,000	3.6%	$536,640	$151,360
Other	$375,000	1.9%	$292,500	$82,500
Total Private Funding	**$2,653,000**		**$2,069,340**	**$583,660**
Total	**$19,307,598**	**100.0%**	**$15,059,926**	**$4,247,672**

Notes and Sources:

[1] unpublished data from the Maine Office of Substance Abuse (OSA, 2003a)

[2] based on primary substance used by treatment clients (OSA, 2003b)

[3] paid by the Maine Department of Human Services

[4] treatment funding only; for prevention funding see Table 5.2

The data indicate that 51% of the admissions for treatment in 2000 were clients receiving inpatient services (Table 2.2a). Eleven percent (11.0%) of admissions were clients who received treatment for drug problems only, 55.7% received treatment for alcohol problems only, and the remaining 33.3% received treatment for combined alcohol and drug problems.

Table 2.2b shows that these 16,706 admissions represent 11,620 individual clients. The higher proportion of inpatient admissions relative to the number of clients is due primarily to the large number of readmissions to shelter and detoxification facilities.

Table 2.2a
Number of Admissions for Treatment by Type of Disorder
Maine, 2000

Type of Disorder	Treatment Type		Total	Percentage (%)
	Inpatient	Outpatient		
Drug abuse	637	1,204	1,841	11.0
Alcohol abuse	5,696	3,608	9,304	55.7
Dual abuse	2,167	3,394	5,561	33.3
Total	**8,500**	**8,206**	**16,706**	**100.0%**

Table 2.2b
Number of Clients Receiving Treatment by Type of Disorder
Maine, 2000

Type of Disorder	Treatment Type		Total	Percentage (%)
	Inpatient	Outpatient		
Drug abuse	500	1,152	1,652	14.2
Alcohol abuse	2,116	3,493	5,609	48.3
Dual abuse	1,224	3,135	4,359	37.5
Total	**3,840**	**7,780**	**11,620**	**100.0%**

Source: OSA, 2003b, Treatment Data System (unpublished data)

As Table 2.3 shows, 93% of the admissions for treatment were white clients, 2% were black, 1.7% were Hispanic, 2.8% were Native American clients, and the remaining small portion included Asians and clients of other unspecified race. The demographic profile of the state population overall is shown in the last column of Table 2.3. In general, the treatment population reflects the state population, although Blacks, Hispanics and Native Americans are somewhat over represented in the treatment population and Whites and Asians are somewhat under represented.

Table 2.3
Number of Admissions for Treatment by Ethnic Group
Maine, 2000

Ethnic Group	Inpatient	Outpatient	Total	Treatment Population (%)	State Population Overall (%)
White	7,792	7,744	15,536	93.0	96.9
Black/African American	231	95	326	2.0	0.5
Hispanic	135	143	278	1.7	0.7
Native American	281	192	473	2.8	0.6
Asian	16	13	29	0.2	0.7
Other/Unknown	45	19	64	0.4	0.5
Total	**8,500**	**8,206**	**16,706**	**100%**	**100%**

Source: OSA, 2003b, Treatment Data System (unpublished data)

Table 2.4 indicates that more than a third (34.6%) of persons in treatment was between the ages of 35 and 44, with the 25-34 year old age group the second highest (23.0%). Youth under the age of 18 were much more likely to receive outpatient rather than inpatient treatment (95% versus 5%, respectively).

Table 2.4
Number of Admissions for Treatment by Age, Maine, 2000

Age Group	Inpatient	Outpatient	Total	Percentage (%)
Under 18	46	886	932	5.6
18-24	890	1474	2364	14.2
25-34	1639	2208	3847	23.0
35-44	3463	2310	5773	34.6
45-54	1904	998	2902	17.4
55-64	443	258	701	4.2
65+	115	72	187	1.1
Total	**8500**	**8206**	**16706**	**100%**

Source: OSA, 2003b, Treatment Data System, (unpublished data)

Summary

Treatment costs in Maine in 2000 were estimated at $19.3 million, which makes up 3% of the total cost of substance abuse. The largest funding sources were the State General Fund ($5.2 million), Medicaid ($4.4 million) and the Substance Abuse Prevention and Treatment Block Grant ($4.3 million). The number of admissions to Maine's treatment facilities in 2000 totaled 16,706, representing 11,620 individual clients. The largest proportion of admissions were clients in the 35-44 age group (34.6%).

Chapter 3
Morbidity

Alcohol and drug use or dependence may adversely affect an individual's work productivity as well as his or her ability to function in other roles. Examples of reduced work productivity would include a worker calling in sick or working while hung-over from heavy drinking the night before, using drugs or alcohol on the job, or leaving work early to use drugs or consume alcohol. An individual's productivity in other non-work roles may also be affected by alcohol or drug use, e.g., performing household or child-care duties. In all these cases, reduced output resulting from alcohol or drug use can be measured as an economic loss. It is often assumed, incorrectly, that the affected worker or individual incurs all of the costs for his or her behavior. But alcohol and drug abuse or dependence creates an economic loss borne by society at large.

Major Findings

- Total morbidity costs in 2000 were an estimated $97.4 million.
- Approximately $69.8 million (72%) of the morbidity costs were attributed to alcohol abuse and $27.6 million (28%) were attributed to drug abuse.
- Substance abuse among males accounted for $72.3 million or 74% of total morbidity costs.
- The highest morbidity cost, $28.6 million, was due to alcohol disorders among males age 25-44.

Methodology

Morbidity costs represent reduced productivity from alcohol and drug abuse, measured in terms of either wage earnings for workers or housekeeping value for non-workers. The method used to estimate morbidity costs was the same as was used in the Washington State reports (Wickizer, et al., 1993, and Wickizer, 1999), and the two national studies (Rice et al., 1990 and NIDA/NIAAA, 1998). This report relied on substance use disorder prevalence estimates from the State of Maine Substance Abuse Treatment Needs Assessment, Study 1 (OSA, 1998), which gathered data through a statewide telephone survey of randomly selected households. These estimates of need include persons who: a) received formal treatment in the past 12 months, or b) met lifetime DSM-III-R criteria for dependence or abuse for a given drug covered in the telephone survey (APA, 1987), use the drug in the past 12 months, and had one or more symptoms in the past 12 months or had a "problem" pattern of use in the past 12 months (see OSA, 1998, Appendix E, for a detailed definition of "need for treatment").

We used the same methodology as Wickizer and Rice to estimate morbidity cost, although the age groups defined in the Washington reports were collapsed to correspond to those used in Maine's needs assessment study. First, the numbers of persons with a drug or alcohol use disorder were estimated based upon prevalence data gathered through the needs assessment survey (OSA, 1998, Tables A9-11). Second, to calculate the total number of employed persons with a substance use disorder, we multiplied the number of persons with a drug or alcohol use disorder within age-gender groups by the corresponding labor force participation rate for the civilian, non-institutionalized adult population (see Appendix A.1). Because substance abuse among individuals who do not earn wages may result in some economic loss through reduced ability to perform other activities, such as maintaining a household, the numbers of unemployed persons with a substance use disorder were also determined by subtracting the number of employed persons from the total number of persons with the disorder. Third, average housekeeping values (for both employed and unemployed persons) and the average earnings for each age-gender group were calculated by taking Washington State's 1996 values, increasing them 4% per year for inflation (Harwood, 2000), and adjusting for Maine's lower median income (79.6% for males and 80.8% for females; U.S. Bureau of the Census, Table DP-3). Finally, the average wage and housekeeping values were multiplied by the number of impaired persons in

each grouping, and these estimates were multiplied by the impairment rate, to generate estimates of lost productivity due to drug and alcohol abuse.

The estimated impairment rates, adapted from those used by Wickizer, are different for various age-gender groups as well as for alcohol versus drugs. These impairment rates provide an estimate of reduced productivity, measured by earnings, associated with drug and alcohol use disorder. For example, for males aged 45-64 the alcohol impairment rate is 7.4% indicating that males in this age group are, on average, 7.4% less productive as a result of alcohol use disorder. See Appendix A.2 for a summary table of the calculations used in this chapter.

Results

An estimated 52,923 adults age 18 or over in Maine had an alcohol use disorder in 2000, and an additional 21,169 adults had a drug use disorder (Table 3.1). Based on the substance use disorder criteria discussed above, the prevalence rate for alcohol use disorder varied from 21.7% for males 18-24 to a fraction of a percent for females 65 or older. The prevalence rate of a drug use disorder was also highest among males aged 18-24 (4.9%).

Within Maine's labor force there were an estimated 59,604 employed persons with serious substance abuse problems in 2000. As shown in Table 3.2 below, approximately 42,894 (72%) of these employees had an alcohol use disorder while 16,710 (28%) had a drug use disorder. There were an additional 14,488 persons estimated to have serious substance abuse problems who were not employed in 2000. Among those unemployed persons, approximately 10,029 had an alcohol use disorder and 4,459 had a drug use disorder.

Table 3.1
Estimated Prevalence of Alcohol and Drug Use Disorders by Age and Gender
Maine, 2000

	Maine Population [1]	Alcohol Use Disorder Prevalence [2]%	Drug Use Disorder Prevalence [3]%	Persons with Alcohol Use Disorder	Persons with Drug Use Disorder
Males					
18-24	52,337	21.7	4.9	11,357	2,565
25-44	181,347	11.0	4.4	19,948	7,979
45-64	156,058	4.3	2.3	6,710	3,589
65+	76,004	0.6	1.0	456	760
Total Males	**465,746**			**38,472**	**14,893**
Females					
18-24	51,566	10.9	3.0	5,621	1,547
25-44	189,250	3.4	1.4	6,435	2,650
45-64	159,725	1.5	1.1	2,396	1,757
65+	107,398	[4]	0.3	[4]	322
Total Females	**507,939**			**14,451**	**6,276**
Total Population	**973,685**			**52,923**	**21,169**

Notes and Sources:

[1] U.S. Bureau of the Census, Census 2000, Table QT-P1

[2] OSA, 1998; calculated by adding percentage of persons with alcohol dependency (Table A.10) to the percentage of persons with symptoms of alcohol abuse (Table A.11)

[3] OSA, 1998; calculated by subtracting percentage of persons with alcohol use disorder from total number of persons in need of treatment (Table A.9)

[4] Estimated percentage rounds to zero.

Components may not sum to totals because of rounding.

Table 3.2
Estimated Labor Force Participation Rates and Number of Employed and Unemployed Persons with Substance Use Disorders by Age and Gender, Maine, 2000

Male	Labor Force Participation Rates [1]%	Employed Persons with Alcohol Use Disorder [2]	Employed Persons with Drug Use Disorder [3]	Unemployed Persons with Alcohol Use Disorder [4]	Unemployed Persons with Drug Use Disorder [5]
18-24	74.4	8,450	1,908	2,907	657
25-44	93.3	18,611	7,444	1,337	535
45-64	79.0	5,301	2,835	1,409	754
65+	17.4	79	132	377	628
Total Male		**32,441**	**12,320**	**6,030**	**2,573**

Female	Labor Force Participation Rates [1]%	Employed Persons with Alcohol Use Disorder [2]	Employed Persons with Drug Use Disorder [3]	Unemployed Persons with Alcohol Use Disorder [4]	Unemployed Persons with Drug Use Disorder [5]
18-24	65.9	3,704	1,019	1,917	528
25-44	77.8	5,006	2,062	1,429	588
45-64	72.7	1,742	1,277	654	480
65+	9.7	0	31	0	291
Total Female		**10,453**	**4,390**	**3,999**	**1,886**
Total Population		**42,894**	**16,710**	**10,029**	**4,459**

Notes and Sources:

[1] calculated using unpublished data from the US Department of Labor, Bureau of Labor Statistics (data do not meet BLS reliability standards for publication), and Census 2000 data (Tables QT-P2 and QT-P24)

[2, 3] produced by multiplying the number of persons with an alcohol or drug use disorder by the labor force participation rate.

[4, 5] produced by subtracting employed from total population with drug or alcohol disorder

Components may not sum to totals because of rounding.

Gender and level of impairment also appear to be linked to the economic impact of substance abuse in Maine. The average 18-24 year old man in Maine in 2000 earned wages of approximately $10,953 while those aged 45-64 earned an estimated $37,318 (Table 3.3). The corresponding earnings for women were lower. Housekeeping values, which represent imputed market values for maintaining the home, are included in Table 3.3. Employment earnings do not capture all of the productive capacity of individuals, because people have to maintain households apart from their jobs. Thus, Table 3.3 includes two sets of housekeeping values, one for persons in the labor force, the second for persons not in the labor force. Housekeeping values are significantly higher for females than males, reflecting the relative amount of time spent in this activity (from Wickizer, 1999).

Table 3.3
Estimated Earnings, Housekeeping Values, and Impairment Rates by Age and Gender, Maine, 2000

Male	Average Earnings [1]	Average Housekeeping Value [1]	Housekeeping Not in the Labor Force [1]	Impairment Rates Alcohol [2]%	Drugs [2]%
18-24	$10,953	$3,004	$6,224	1.40	1.10
25-44	$31,838	$3,778	$7,056	4.25	5.45
45-64	$37,318	$4,091	$7,378	7.40	7.80
65+	$19,923	$3,052	$5,800	9.30	7.30
Female	**Average Earnings [1]**	**Housekeeping [1]**	**Housekeeping Not in the Labor Force [1]**	**Impairment Rates Alcohol [2]%**	**Drugs [2]%**
18-24	$9,772	$9,500	$15,728	0.80	0.20
25-44	$15,655	$11,260	$17,452	7.35	1.45
45-64	$19,338	$9,939	$16,203	15.30	4.55
65+	$8,842	$4,718	$7,734	18.70	7.30

Notes and Sources:
[1] estimated using Wickizer's 1996 values, adjusted for inflation (4% per year) and Maine's income
[2] impairment rates adapted from Wickizer, 1999

The higher costs associated with alcohol abuse are primarily a reflection of the higher prevalence of alcohol use rather than a function of the differences in impairment rates (Tables 3.1 and 3.3). The data presented in Tables 3.1-3.3 were used to derive morbidity cost estimates shown below in Table 3.4. Total morbidity costs for Maine in 2000 were estimated at $97.4 million. Male substance abuse accounted for 74% ($72.3 million) of these costs, and female use accounted for the remaining 26% ($25.2 million). Alcohol abuse was responsible for $69.8 million or 72% of the total morbidity costs and drug abuse was responsible for an estimated $27.6 million (28%).

Table 3.4
Total Morbidity Costs by Age and Gender, 2000

Male	Alcohol	Drugs	Total
18-24	$1,904,452	$330,711	$2,235,163
25-44	$28,571,819	$14,251,219	$42,823,037
45-64	$17,012,789	$9,332,402	$26,345,191
65+	$371,988	$481,214	$853,202
Subtotal	$47,861,047	$24,395,546	$72,256,593
Female	**Alcohol**	**Drugs**	**Total**
18-24	$812,232	$55,266	$867,498
25-44	$11,735,521	$938,842	$12,674,363
45-64	$9,424,672	$2,020,081	$11,444,753
65+	0	$194,449	$194,449
Subtotal	$21,972,425	$3,208,638	$25,181,063
Total	**$69,833,473**	**$27,604,183**	**$97,437,656**

Note: calculated by multiplying the average loss per person with a substance use disorder by the population for each age and gender group.

Summary

The findings of the analysis presented in this chapter indicate that alcohol and drug abuse in Maine result in substantial economic loss through reduced productivity. Total morbidity costs for 2000 were conservatively estimated at $97.4 million, or 16% of the total economic cost of substance abuse in Maine. Seventy-two percent (72%) of these costs ($69.8 million) resulted from alcohol abuse and 28% ($27.6 million) resulted from drug abuse. The highest morbidity cost was from alcohol disorders among males aged 25-44 ($28.6 million).

Chapter 4
Mortality

A major economic loss is imposed on society by premature death from substance use and abuse. Premature death through illness or injury can occur through auto and other accidents involving alcohol, through liver diseases such as hepatitis and cirrhosis, through increasing the risk of cancer or cerebrovascular disease, and through violence involving drugs or alcohol. When an individual dies prematurely, there is an economic cost to society in the form of loss of that individual's productive capacity.

This chapter looks at these costs and their economic impact on Maine in 2000. The three areas addressed are:

1. The number of alcohol- and drug-related deaths.
2. The number of years of potential life lost from these deaths.
3. The total economic costs of drug- and alcohol-related deaths.

Major Findings

- In 2000, an estimated 541 deaths related to drug or alcohol abuse occurred in Maine; 473 alcohol-related and 68 drug-related.
- These 541 deaths resulted in 11,738 years of potential life lost.
- Major causes of death were:
    - a. cancers (various types) – 117 deaths
    - b. cirrhosis - 64 deaths
    - c. cerebrovascular disease – 57 deaths
- Estimated total mortality costs for 2000 were $140.3 million. Of this amount, $104.2 million resulted from alcohol abuse and $36.2 million from drug abuse.
- The average cost per death in 2000, measured in lost earnings, was $259,410.

Methodology

The Office of Substance Abuse followed the methodology described below to estimate the cost of substance-related mortality. The total number of deaths due to diseases or conditions associated either directly or indirectly with alcohol or drug use, broken down by age and gender, was obtained from the Maine Office of Data, Research and Vital Statistics, (ODRVS, 2003a). To estimate the number of alcohol- and drug-related deaths by age group (Table 4.1) and by disease category (Tables 4.2 and 4.3), these figures were multiplied the Alcohol Attributable Fractions (AAF) and Drug Attributable Fractions (DAF). These attributable fractions represent the percentage of deaths within a given diagnosis believed to be attributable to alcohol or drugs. For example, the AAF for cancer of the larynx is 0.50 indicating 50% of the deaths from this form of cancer could reasonably be associated with alcohol use. The AAF and DAF used in this report are those used by NIDA/NIAAA with one exception: the AAF for motor vehicle deaths is the actual proportion (22%) of fatal traffic accidents in Maine in 2000 involving a driver with a Blood Alcohol Content (BAC) at or above 0.10 g/dl (U.S. Department of Transportation).

To calculate the cost associated with these deaths (Table 4.4), the number of years of potential life lost was calculated for each age group and gender using life expectancy for Maine residents in 2000 (ODRVS, 2003b). The mortality cost for each age-gender cohort was determined by using the same cost per year of potential life lost as used by Wickizer (1999), multiplied by the number of substance-related deaths in Maine, and adjusted for inflation using 3.0% per year (Harwood, 2000) and for the lower median annual wage in Maine relative to that of Washington State (80%). The formula used by Wickizer to calculate mortality costs is based on the assumption that an individual retires at age 75 and that his or her productivity would grow annually 1% based on present income (Wickizer, et al., 1993; see Appendix B.1). Details of these calculations are shown in Appendix B.2.

Results

There were 541 deaths in Maine in 2000 caused by or related to drug or alcohol use. A breakdown of the deaths by age and gender is shown in Table 4.1 below. Alcohol accounted for 473 (87%) of the substance abuse deaths, and the greatest number of alcohol-related deaths (264) was among persons 65 and over (56%). In contrast, the greatest number of drug-related deaths (25) occurred among persons aged 35-44 (37%).

Table 4.1

Estimated Number of Alcohol- and Drug-Related Deaths by Age and Gender
Maine, 2000

Age	Alcohol Related Deaths				Drug Related Deaths			
	Male		Female		Male		Female	
	No.	%	No.	%	No.	%	No.	%
1-18	9	2.8	4	2.6	2	4.3	0	0.0
19-24	11	3.4	2	1.3	8	17.0	0	0.0
25-34	15	4.7	5	3.3	12	25.5	3	14.3
35-44	38	11.9	9	5.9	12	25.5	13	61.9
45-54	50	15.6	11	7.2	8	17.0	3	14.3
55-64	45	14.1	12	7.8	3	6.4	1	4.8
65+	153	47.8	111	72.5	2	4.3	1	4.8
Total	**320**	**100**	**153**	**100**	**47**	**100**	**21**	**100**

Notes and Sources:
Maine Office of Data, Research and Vital Statistics, 2003a
Sorg and Greenwald, 2003
Components may not sum to totals due to rounding.

Tables 4.2 and 4.3 show these deaths broken down by specific cause of death. Table 4.2 shows alcohol-related deaths and Table 4.3 shows drug-rated deaths. Various cancers accounted for the greatest number of alcohol-related deaths (117), followed by cirrhosis of the liver (64), and cardiovascular disease (57). Accidental poisoning was the leading cause of drug-related deaths (50).

Table 4.2
Estimated Number of Deaths Attributable to Alcohol by Diagnosis and Gender, Maine, 2000

Diagnosis	ICD-10-CM Diagnostic Codes [1]	Alcohol Attributable Fraction [2]	Age (Years) [3]	Total Deaths [4a]	Male Total Deaths [4b]	Male Alcohol Related Deaths [2]x[4b]	Female Total Deaths [4c]	Female Alcohol Related Deaths [2]x[4c]
Direct Causes								
Excessive blood levels of alcohol	F10.0	1	≥15	2	2	2	0	0
Alcohol abuse	F10.1	1	≥15	11	8	8	3	3
Alcohol dependence syndrome	F10.2	1	≥15	23	23	23	0	0
Other mental and behavioral problems due to alcohol	F10.3-.9	1	≥15	5	5	5	0	0
Alcoholic cardiomyopathy	I42.6	1	≥15	8	7	7	1	1
Alcoholic fatty liver	K70.0	1	≥15	1	0	0	1	1
Acute alcoholic hepatitis	K70.1	1	≥15	4	4	4	0	0
Alcoholic cirrhosis	K70.3	1	≥15	26	23	23	3	3
Alcoholic hepatic failure	K70.4	1	≥15	10	8	8	2	2
Alcoholic liver damage	K70.9	1	≥15	5	5	5	0	0
Indirect Causes								
Respiratory tuberculosis	A15, A16	0.25	≥35	1	1	0	0	0
Malignant neoplasm of the oral cavity [5]	C00-C14	0.50	≥35	44	30	15	14	6
Malignant neoplasm of the esophagus	C15	0.75	≥35	86	62	47	24	18
Malignant neoplasm of the stomach	C16	0.20	≥35	73	42	8	31	6
Malignant neoplasm of the liver	C22	0.15	≥35	51	36	5	15	2
Malignant neoplasm of the larynx [5]	C32	0.50	≥35	22	16	8	6	2
Diabetes mellitus	E10-E14	0.05	≥35	353	154	8	199	10
Cerebrovascular disease	G45, I60-I69	0.07	≥35	824	307	21	517	36
Essential hypertension	I10	0.08	≥35	31	7	1	24	2
Pneumonia and influenza	J10-J18	0.05	≥35	334	126	6	208	10
Diseases of the stomach esophagus, duodenum	K20-K31 (excl. K29.2)	0.10	≥35	40	22	2	18	2
Cirrhosis of liver, w/o mention of alcohol	K74.3-K74.6	0.50	≥35	76	46	23	30	15
Portal hypertension	K76.6	0.50	≥35	2	0	0	2	1
Acute pancreatitis	K85	0.42	≥35	12	8	3	4	2

(continued on next page)

Table 4.2 (continued)

Diagnosis	ICD-10-CM Diagnostic Codes [1]	Alcohol Attributable Fraction [2]	Age (Years) [3]	Total Deaths [4a]	Male Total Deaths [4b]	Male Alcohol Related Deaths [2]x[4b]	Female Total Deaths [4c]	Female Alcohol Related Deaths [2]x[4c]
Unintentional Injuries								
Accidental drowning & submersions	W65-W74	0.38	≥0	12	12	5	0	0
Accidental falls	W00-W19	0.35	≥15	0	0	0	0	0
Accidents caused by fire & flames	X00-X09	0.45	≥0	17	13	6	4	2
Air and space transport accidents	V95-V97	0.16	≥0	1	1	0	0	0
Other injuries and adverse effects	[6]	0.25	≥15	58	41	10	17	4
Motor vehicle accidents	[7]	0.22	≥0	166	101	22	65	14
Pedal cycle & other road vehicle accidents	[8]	0.20	≥0	10	6	1	4	1
Water transport accidents	V90-V94	0.20	≥0	11	11	2	0	0
Intentional Injuries								
Suicide	X60-X84.9,Y87.0	0.28	≥15	151	130	36	21	6
Homicide	X85-Y09,Y87.1	0.46	≥15	17	9	4	8	4
Totals			-	2487	1266	**320**	1221	**153**

Notes and Sources:

[1] World Health Organization, 1992, International Classification of Diseases, 10th Revision, Clinical Modification (ICD-10-CM)

[2] NIDA/NIAAA, 1998

[3] Deaths occurring before this age are not included in the calculations

[4a-c] Office of Data, Research and Vital Statistics, 2003a, unpublished data

[5] The AAF for females is 0.40.

[6] W22-W24, W27-W34, W50, W51, W78-W79, X31, Y10, Y13, Y14, Y18, Y19

[7] V02-04, V09(.0, .2), V12-14(.3-.9), V19(.0-.2, .4-.6), V20-79, V80(.3-.5), V81(.0, .1), V82(.0, .1), V83-86, V87(.0-.8), V88(.0-.8), V89(.0, .2); the attributable fraction is the proportion of fatal crashes in Maine, 2000, involving a driver with a BAC ≥ 0.10 g/dl (US Dept. of Transportation).

[8] V01, V06, V09(.1, .3, .9), V10-11, V12-14(.0-.2), V16-18, V19(.3, .8, .9), V82(.2-.9), V82(.2-.9), V87.9, V88.9, V89(.1, .3)

Table 4.3
Estimated Number of Deaths Attributable to Drugs by Diagnosis and Gender, Maine, 2000

Diagnosis	ICD-10-CM Diagnostic Code [1]	Drug Attributable Fraction [2]	Age (Years) [2]	Total Deaths [3a]	Male		Female	
					Total Deaths [3b]	Drug-Related Deaths [2]x[3b]	Total Deaths [3c]	Drug-Related Deaths [2]x[3c]
Direct Causes								
Drug Dependence	F11-F19(.2)	1	≥0	0	0	0	0	0
Nondependent abuse of drugs	F11-F19(.1)	1	≥0	3	2	2	1	1
Accidental poisoning by drugs [4]	X41-42	1	≥0	50	36	36	14	14
Poisoning by drugs undetermined intent	Y11-Y12	1	≥0	1	1	1	0	0
Suicide [4]	X60-X64	1	≥0	10	5	5	5	5
Indirect Causes								
HIV/AIDS	B20-B24	0.05	≥0	17	12	1	5	0
Hepatitis B	B16.9	0.28	≥0	2	2	1	0	0
Homicide	X85-Y09,Y87.1	0.13	≥15	17	9	1	8	1
Total						**47**		**21**

Notes and Sources:

[1] World Health Organization, 1992, International Classification of Diseases, 10th Revision, Clinical Modification (ICD-10-CM)

[2] NIDA/NIAAA, 1998

[3a-c] Office of Data, Research and Vital Statistics, 2003a, unpublished data.

[4] Sorge and Greenwald, 2003

Table 4.4 provides information on the number of years of potential life lost (YPLL) due to drug and alcohol use and the estimated economic cost of premature death. In 2000, deaths associated with drug and alcohol use resulted in 11,738 years of potential life lost. Alcohol accounted for a greater number of total years of life lost, 9,033 (77%) than did drugs, 2,705 (23%). The greatest number of years of lost life (2,854) was among males age 35-54 dying of alcohol-related causes (24% of total YPLL).

Premature death due to alcohol and drug use resulted in an estimated economic loss of $140.3 million. The estimated economic loss due to premature death in 2000 related to alcohol use was $104.2 million (74%), compared to $36.2 million for drug use (26%). Alcohol-related deaths among males aged 35-44 accounted for the largest cost for any single age/gender group, $25.4 million.

Table 4.4
Estimated Mortality Costs and Years of Potential Life Lost (YPLL)
Maine, 2000

Age	Alcohol		Drugs		Total	
	Costs [1]	YPLL [2]	Costs [1]	YPLL [2]	Costs	YPLL
Male						
1-18	$5,325,485	595	$1,183,433	132	$6,508,918	727
19-24	$8,343,861	600	$6,128,009	436	$14,471,870	1,036
25-34	$11,739,448	705	$9,600,487	564	$21,339,935	1,269
35-44	$25,358,422	1,429	$7,850,396	451	$33,208,818	1,880
45-54	$21,322,179	1,425	$3,332,089	228	$24,654,268	1,653
55-64	$8,102,407	900	$498,021	60	$8,600,428	960
65+	$4,933,356	903	$64,370	12	$4,997,726	915
Total	$87,463,986	6,556	$30,254,440	1,883	$117,718,426	8,439
Female						
1-18	$1,296,892	284	$0	0	$1,296,892	284
19-24	$778,273	118	$0	0	$778,273	118
25-34	$1,932,878	257	$1,149,473	154	$3,082,351	410
35-44	$2,967,309	374	$4,238,899	541	$7,206,209	915
45-54	$2,593,263	354	$679,037	97	$3,272,299	451
55-64	$1,549,313	280	$111,923	23	$1,661,235	303
65+	$5,357,245	810	$24,096	7	$5,381,342	818
Total	$16,706,220	2,477	$5,916,189	822	$22,622,409	3,299
Total						
1-18	$6,622,378	879	$1,183,433	132	$7,805,810	1,011
19-24	$9,122,135	718	$6,128,009	436	$15,250,143	1,154
25-34	$13,672,327	962	$10,749,959	718	$24,422,286	1,679
35-44	$28,325,732	1,803	$12,089,295	992	$40,415,027	2,795
45-54	$23,915,442	1,779	$4,011,125	325	$27,926,567	2,104
55-64	$9,651,720	1,180	$609,943	83	$10,261,663	1,263
65+	$10,290,602	1,713	$88,466	19	$10,379,068	1,732
Total	**$104,170,206**	**9,033**	**$36,170,629**	**2,705**	**$140,340,836**	**11,738**

Notes and Sources:

[1] Wickizer, 1999; Rice et al., 1990; based on a 4% discount rate and the assumption that individuals retire before or by age 75, and that an individual's productivity would grow 1% annually based on his or her present income

[2] calculated using Life Expectancy in Maine, 2000 (ODRVS, 2003b)

Components may not sum to totals because of rounding.

Summary

In 2000, an estimated 541 people died in Maine from drug and alcohol-related causes, resulting in 11,738 years of potential life lost. Translated into economic terms, this loss of life represented an estimated economic cost of approximately $140.3 million. Approximately 74% of this cost, $104.2 million, was due to premature death related to alcohol abuse, and $36.2 million (26%) was due to drug abuse. Economic loss due to mortality was the highest cost in our analysis, represented nearly a quarter (23%) of the total cost of substance abuse in Maine.

Chapter 5

Crime

Over the last twenty years, evidence has accumulated showing a strong link between substance abuse and crime. A 1989 Department of Justice study found that in some cities as many as 50%-80% of persons arrested for felonies tested positive for drugs (Tonry & Wilson, 1990). Recent surveys of incarcerated populations provide further evidence of the strong link between crime and substance abuse. Approximately one in four Federal inmates and one in two State inmates reported that they were under the influence of alcohol or illicit drugs at the time of their current offense (U.S. Department of Justice, 1995).

This chapter analyzes crime costs for Maine in 2000. It examines four types of costs related to criminal activity: (1) Law Enforcement Costs, (2) Judicial Costs, (3) Correctional Costs, and (4) Other Societal Costs.

Major Findings

- Of 11 arrests for homicide in Maine, 3 were estimated to be related to alcohol and 2 to drug abuse.
- Maine saw a total of 7,625 arrests for assault (aggravated, sexual and other) of which an estimated 2,280 (30%) were related to alcohol abuse and 386 (5%) to drug abuse.
- Total estimated drug- and alcohol-related costs of crime in 2000 were $128.4 million, of which $79.3 million (62%) was attributed to drug-related crimes and $49.1 million (38%) was attributed to alcohol-related crimes.
- The highest costs were for corrections, $40.2 million, followed by the cost of police protection $37.2 million.
- $6.0 million was spent on the prevention of drug and alcohol abuse, and an additional $2.3 million was spent on reducing the supply of drugs.

Methodology

Information was gathered from various sources on criminal activities (offenses and arrests), prison populations, numbers of crime victims, and property destruction. These data were then adjusted to reflect criminal activity related specifically to drug and alcohol abuse.

The analysis was restricted to the set of crimes believed to be most closely linked to substance abuse (NIDA/NIAAA, 1998):

Felonies

- homicide
- assault (aggravated, sexual and other)
- robbery
- burglary
- larceny (property theft)
- auto theft

Less serious offenses

- driving under the influence (DUI)
- liquor law violations
- public drunkenness
- stolen property (buying, receiving and selling)
- prostitution
- drug law violations (possession, sale, use, or manufacture).

The numbers of drug- and alcohol-related crimes were estimated by multiplying the total number of crimes by attributable fractions in the same manner as done in Chapter 4 to derive the number of substance-related deaths. The attributable fractions used for this report were those used by NIDA/NIAAA (1998, Table C.1), and ranged from 2.4% for drug-related sexual assault to 100% for DUI. In other words, it was assumed that 2.4% of all sexual assaults are related to drug use; by definition, 100% of DUI offenses are related to alcohol use.

The attributable fractions used for the analysis are shown below (crimes such as DUI with attributable fractions of 100% are not show):

	Alcohol	Drugs
	(%)	(%)
Homicide	30.0	15.8
Aggravated Assault	30.0	5.1
Sexual Assault	22.5	2.4
Other Assault	30.0	5.1
Robbery	3.4	27.2
Burglary	3.6	30.0
Larceny	2.8	29.6
Auto Theft	3.5	6.8
Stolen Property	0.0	15.1
Prostitution	0.0	12.8

To derive some of the cost estimates (correctional and judicial costs), it was necessary to convert numbers of arrests or offenses into dollar equivalents. This conversion was done using the same procedure as NIDA/NIAAA (1998), which assumed that costs were proportional to the numbers of crimes committed. For example, the total cost of police protection associated with substance abuse was calculated by taking the total cost of police protection divided by the total number of arrests in 2000, and multiplying the resulting average cost per arrest by the estimated number of substance-related arrests. The costs of the less serious alcohol arrests (DUI, liquor law, and public drunkenness) were calculated separately using Wickizer's 1996 per-arrest cost, adjusted for inflation and Maine's median wage.

Results

Law Enforcement

Police Protection:

The total police protection costs for 2000 were estimated at $37.2 million (Table 5.1). There were an estimated 3 homicides and 2,280 assaults in 2000 related to alcohol use or abuse. There were fewer drug-related crimes in these two categories, 2 and 386, respectively, but more drug-related robberies, burglaries and thefts, 2058.

Table 5.1
Estimated Cost of Police Protection, Maine 2000

Type of Offense	Total Arrests [1]	Number of Arrests Due to: Alcohol [2]	Drugs [2]	Police Protection Costs Alcohol [3]	Drug [3]	Total
Homicide	11	3	2	$12,050	$6,346	$18,397
Aggravated Assault [4]	632	190	32	$692,345	$117,699	$810,044
Sexual Assault	106	24	3	$87,091	$9,290	$96,381
Other Assaults [4]	6,887	2,066	351	$7,544,591	$1,282,581	$8,827,172
Robbery	148	5	40	$18,375	$146,999	$165,374
Burglary	1,328	48	398	$174,576	$1,454,801	$1,629,378
Larceny-Theft	5,390	151	1,595	$551,101	$5,825,925	$6,377,026
Auto Theft	372	13	25	$47,544	$92,371	$139,915
DUI [5]	7,452	7,452	0	$287,871	$0	$287,871
Liquor Laws [5]	3,089	3,089	0	$119,328	$0	$119,328
Public Drunkenness [5]	26	26	0	$1,004	$0	$1,004
Stolen Property	303	0	46	$0	$167,072	$167,072
Prostitution	22	0	3	$0	$10,283	$10,283
Drug laws	5,090	0	5,090	$0	$18,586,695	$18,586,695
Total		**13,067**	**7,586**	**$9,535,877**	**$27,700,062**	**$37,235,939**

Notes and Sources:

[1] Maine Department of Public Safety (MDPS), Crime in Maine 2000

[2] derived using attributable fractions from NIDA/NIAAA

[3] based on a per arrest cost of $3,651.61; total police protection costs for Maine were estimated to be $167,112,473 for 45,764 arrests, excluding alcohol violation arrests (US Department of Justice, Sourcebook of Criminal Justice Statistics Online).

[4] These categories together includes a total of 3,191 domestic violence assaults; using the above attributable fractions an estimated 957 would be related to alcohol abuse and 163 to drug abuse (MDPS, 2003, personal communications).

[5] based on a per arrest cost of $39.14; calculated using Wickizer's 1996 data and adjusting for inflation using the Consumer Price Index (9.75% for the 4-yr period) and for Maine's lower median wage (80%)

Components may not sum to totals due to rounding.

Substance Control – Prevention and Drug Supply Reduction:

The mandated duties of the Office of Substance Abuse include providing funds for the prevention and treatment of substance abuse disorders. The expenditures given in the Prevention category in Table 5.2 below includes only administrative and prevention costs (expenditures for substance abuse treatment are discussed in Chapter 2) (OSA, 2003a). The largest portion of the $6.0 million prevention budget goes toward implementing the federal Safe and Drug Free Schools and Communities Act ($2.0 million), which provides monies to schools throughout the State of Maine for planning, administering and evaluating substance abuse and violence prevention programs.

Supply reduction is undertaken by the Maine Drug Enforcement Agency. In 2000, their budget totaled $2.3 million dollars, of which $1.4 million (59%) was federally funded, and $0.9 million came from the State General Fund (39%).

Table 5.2
Substance Control Expenditures, Maine, 2000

Type of Activity	Total Expenditures	Expenditures Alcohol (50%)	Expenditures Drug (50%)
Prevention - OSA [1]			
State General Fund	$1,308,207	$654,104	$654,104
Federal Categorical	$1,092,344	$546,172	$546,172
Safe and Drug Free Schools & Communities Act	$2,045,787	$1,022,894	$1,022,894
Substance Abuse Prevention & Treatment Block Grant [2]	$1,590,023	$795,012	$795,012
Total	**$6,036,361**	**$3,018,181**	**$3,018,181**
Drug Supply Reduction - MDEA [3]			
State General Fund	$911,607		$911,607
Federal Funds	$1,361,608		$1,361,608
All Other	$49,158		$49,158
Total	**$2,322,373**		**$2,322,373**

Notes and Sources:
[1] OSA, 2003a, unpublished data; includes only prevention and administration
[2] includes only prevention expenditures; see Table 2.1 for treatment expenditures
[3] Maine Drug Enforcement Agency, 2003, unpublished data

Judicial Costs

Legal and judicial costs were estimated based on the number of arrests for substance-related crimes provided by the Maine Department of Public Safety. Base cost figures for Maine were obtained from the U.S. Department of Justice (2002). As shown in Table 5.3, the most costly crime category was Other Assaults ($3.7 million) due to the large number of alcohol-related arrests (2,066). The most costly drug-related crime category was direct drug law violations (manufacture, sale or possession) with 5,090 arrests. The total estimated 2000 cost for drug- and alcohol-related legal and adjudication activities was $15.6 million, with drug abuse accounting for about 73% of the costs ($11.5 million).

Table 5.3
Estimated Legal and Adjudication Costs, Maine, 2000

Type of Offense	Total Arrests [1]	Number of Arrests Due to: Alcohol [2]	Drugs [2]	Legal & Adjudication Costs Alcohol [3]	Drug [3]	Total
Homicide	11	3	2	$4,984	$2,625	$7,608
Aggravated Assault [4]	632	190	32	$286,326	$48,675	$335,001
Sexual Assault	106	24	3	$36,017	$3,842	$39,859
Other Assaults [4]	6,887	2,066	351	$3,120,134	$530,423	$3,650,557
Robbery	148	5	40	$7,599	$60,793	$68,392
Burglary	1,328	48	398	$72,198	$601,646	$673,844
Larceny-Theft	5,390	151	1,595	$227,913	$2,409,364	$2,637,277
Auto Theft	372	13	25	$19,662	$38,201	$57,863
DUI [5]	7,452	7,452	0	$291,671	$0	$291,671
Liquor Laws [5]	3,089	3,089	0	$120,903	$0	$120,903
Public Drunkenness [5]	26	26	0	$1,018	$0	$1,018
Stolen Property	303	0	46	$0	$69,094	$69,094
Prostitution	22	0	3	$0	$4,253	$4,253
Drug laws	5,090	0	5,090	$0	$7,686,697	$7,686,697
Total		**13,067**	**7,586**	**$4,188,425**	**11,455,612**	**$15,644,037**

Notes and Sources:

[1] Maine Department of Public Safety (MDPS), Crime in Maine 2000

[2] derived using attributable fractions from NIDA/NIAAA, 1998

[3] based on a per arrest cost of $1510; total legal and adjudication costs for Maine were estimated to be $69,110,802 for 45,764 arrests, excluding alcohol violation arrests (US Department of Justice, Sourcebook of Criminal Justice Statistics Online)

[4] These categories together includes a total of 3,191 domestic violence assaults; using the above attributable fractions an estimated 957 would be related to alcohol abuse and 163 to drug abuse (MDPS, 2003, personal communications).

[5] based on a per arrest cost of $39.14; Rice et al., 1990, used the same per arrest cost for judicial costs as for the cost of police protection.

Corrections

State:

Total state substance abuse-related corrections costs (the cost of housing, feeding and securing inmates) were estimated at $28.7 million (Table 5.4), with drug-related costs accounting for $16.3 million or 57% of the total costs and alcohol-related costs accounting for $12.3 million (43%). The most costly category was drug law offenses ($7.6 million) followed by assaults ($6.0 million) and burglary ($4.7 million).

Table 5.4
Estimated Cost of State Corrections, Maine, 2000

Type of Offense	Total Inmates	Inmate Population: Substance-Related Crimes		State Corrections Costs		
		Alcohol	Drugs	Alcohol	Drug	Total
	[1]	[2]	[2]	[3]	[3]	
Homicide	239	72	38	$3,195,290	$1,682,853	$4,878,143
Aggravated Assault	152	46	8	$2,032,151	$345,466	$2,377,617
Sexual Assault	222	50	5	$2,226,008	$237,441	$2,463,449
Other Assaults	77	23	4	$1,029,445	$175,006	$1,204,451
Robbery	92	3	25	$139,398	$1,115,188	$1,254,586
Burglary	316	11	95	$506,968	$4,224,735	$4,731,704
Larceny-Theft	61	2	18	$76,117	$804,661	$880,777
Auto Theft	43	2	3	$67,070	$130,307	$197,377
DUI	69	69	0	$3,074,966	$0	$3,074,966
Liquor Laws	0	0	0	$0	$0	$0
Public Drunkenness	0	0	0	$0	$0	$0
Stolen Property	6	0	1	$0	$40,376	$40,376
Prostitution	0	0	0	$0	$0	$0
Drug laws	170	0	170	$0	$7,576,002	$7,576,002
Total Substance-Related	**1,447**	**277**	**366**	**$12,347,413**	**$16,332,034**	**$28,679,447**

Notes and Sources:

[1] Maine Department of Corrections (2002a), unpublished data for 2002 (data for 2000 was not available)

[2] derived using attributable fractions from NIDA/NIAAA, 1998

[3] based on a per inmate cost of $44,564.72; total state corrections costs for Maine were estimated to be $83,246,895 for 1,868 arrests; 1999 estimates were increased 6.12% to adjust for inflation (US Department of Justice, Sourcebook of Criminal Justice Statistics Online).

County:

In Maine, some individuals arrested for substance-related crimes can be booked into county jails. Thus, some of the expense of operating these jails should be included in the analysis as drug- and alcohol-related costs. The same general procedure for estimating state corrections costs was followed for county corrections costs. As shown in Table 5.5, total alcohol- and drug-related county corrections costs for 2000 were estimated at $11.5 million with alcohol-related costs accounting for $7.6 million (66%) and drug-related costs accounting for $3.9 million (34%).

Table 5.5
Estimated Cost of County Corrections, Maine, 2000

Type of Offense	Proportion of Total County Inmates [1]	Number of County Inmates [2]	Number of Substance-Related County Admissions		County Correction Costs		
			Alcohol [3]	Drug [3]	Alcohol [4]	Drug [4]	Total
Homicide	0.002	3	1	0	$18,217	$0	$18,217
Aggravated Assault	0.036	49	15	3	$327,900	$55,743	$383,642
Sexual Assault	0.003	4	1	0	$20,494	$0	$20,494
Other Assault	0.076	104	31	5	$692,232	$117,680	$809,912
Robbery	0.012	16	1	4	$12,387	$99,099	$111,486
Burglary	0.030	41	1	12	$32,790	$273,250	$306,040
Larceny	0.107	146	4	43	$90,962	$961,596	$1,052,558
Auto Theft	0.014	19	1	1	$14,877	$28,904	$43,781
DUI	0.115	157	157	0	$3,491,523	$0	$3,491,523
Liquor Laws	0.038	52	52	0	$1,153,721	$0	$1,153,721
Public Drunkenness	0.059	81	81	0	$1,791,303	$0	$1,791,303
Stolen Property	0.011	15	0	2	$0	$50,430	$50,430
Prostitution	0.007	10	0	0	$0	$0	$0
Drug Laws	0.076	104	0	104	$0	$2,307,441	$2,307,441
Total			**344**	**175**	**$7,646,405**	**$3,894,141**	**$11,540,546**

Notes and Sources;

[1] from NIDA/NIAAA, 1998, (Table C-4)

[2] average number of county inmates was 1367, Maine Department of Corrections, Total County Monthly Jail Population, 2000

[3] derived using attributable fractions from NIDA/NIAAA, 1998

[4] Total county corrections costs ($30,360,932) are based on 1999 data increased 6.12% for inflation. Average cost per inmate was $30,360,932/1367=$22,210 (US Department of Justice, Sourcebook of Criminal Justice Statistics Online).

Other Societal Costs

Other societal costs arising from drug and alcohol abuse include the costs of lost productivity due to incarceration, the value of lost productivity due to criminal victimization, and the cost of property damage arising from substance abuse-related accidents.

Productivity Losses Due to Incarceration:

Inmates of state prisons and local jails are unable to participate in the economy as workers. This results in a substantial economic cost to society in the form of lost productivity. The cost estimates were based upon the numbers of individuals entering state prisons and local jails from the Maine Department of Corrections. We assumed, as did Rice et al. (1990) that one year was served per offense even though that would tend to inflate the cost of less serious offenses. Since annual costs were calculated, the analysis was based upon a maximum of 12 months served, even though individuals served much longer for some crimes (e.g., homicide). Productivity losses were calculated based upon a $21,285 median annual wage for Maine (U.S. Bureau of the Census, Census 2000, Table P85).

The findings are presented in Table 5.6. Total productivity losses due to incarceration were estimated to be $23.3 million, with $14.2 million (61%) representing losses associated with incarceration in state prisons, and $9.1 million (39%) representing losses associated with incarceration in county jails. Productivity losses were quite evenly split between alcohol-related losses, $11.8 million, and drug-related productivity losses of $11.5 million.

Table 5.6
Estimated Productivity Losses Due to Incarceration
Maine, 2000

Type of Offense	Alcohol		Drugs		Total Losses
	Person Years Served [1]	Productivity Losses [2]	Person Years Served [1]	Productivity Losses [2]	
State Prisons [3]					
Homicide	72	$1,532,520	38	$808,830	$2,341,350
Felonious Assault	135	$2,873,475	23	$489,555	$3,363,030
Robbery	3	$63,855	25	$532,125	$595,980
Burglary	14	$297,990	113	$2,405,205	$2,703,195
Auto Theft	2	$42,570	3	$63,855	$106,425
DUI	69	$1,468,665	--	--	$1,468,665
Stolen Property	--	--	1	$21,285	$21,285
Drug Laws	--	--	170	$3,618,450	$3,618,450
State Total	**295**	$6,279,075	**373**	$7,939,305	**$14,218,380**
County Jails [4]					
Homicide	1	$21,285	0	$0	$21,285
Assault	16	$340,560	3	$63,855	$404,415
Robbery	1	$21,285	4	$85,140	$106,425
Burglary	7	$148,995	56	$1,191,960	$1,340,955
Auto Theft	1	$21,285	1	$21,285	$42,570
DUI	156	$3,320,460	--	--	$3,320,460
Liquor Laws	52	$1,106,820	--	--	$1,106,820
Public Drunkenness	26	$553,410	--	--	$553,410
Stolen Property	--	--	2	$42,570	$42,570
Drug Laws	--	--	103	$2,192,355	$2,192,355
County Total	**260**	**$5,534,100**	**169**	**$3,597,165**	**$9,131,265**
Grand Total	**555**	**$11,813,175**	**542**	**$11,536,470**	**$23,349,645**

Notes and Sources:

[1] One year per offense is assumed.

[2] Productivity is based on Maine's median annual earnings of $21,285, US Bureau of the Census, Table P85

[3] Maine Department of Corrections, Controlling Sentence Offense Counts for Current Prisoners, 2002

[4] Maine Department of Corrections, Total Counties Monthly Jail Population Report, 2000

Property Destruction:

State data on property destruction costs for 2000 were unavailable. Therefore, estimates of property destruction costs were calculated by taking Wickizer's total property loss due to crime (1999), multiplying the per offense cost by the number of offenses in Maine, adjusting for inflation using the Consumer Price Index (10%), and applying the drug and alcohol attributable fractions. The cost figures are presented in Table 5.7. Overall, property destruction costs due to criminal activity related to drug or alcohol abuse were estimated at $2.1 million, with drug-related costs accounting for $1.7 million (83%).

Table 5.7
Estimated Property Destruction Due to Crime, Maine, 2000

Type of Offense	Property Destruction Losses [1]]	Alcohol Related Losses [2]	Drug Related Losses [2]	Total Losses
Robbery	$61,500	$2,091	$16,728	$18,819
Assault	$89,270	$26,781	$4,553	$31,334
Larceny	$1,261,824	$35,331	$373,500	$408,831
Burglary	$3,379,500	$121,662	$1,013,850	$1,135,512
Motor Vehicle Theft	$4,613,451	$161,471	$313,715	$475,185
Total Losses	**$9,405,545**	**$347,336**	**$1,722,345**	**$2,069,681**

Notes and Sources:
[1] calculated by taking Wickizer's 1996 per offense losses, multiplying by number of offenses in Maine (Maine Department of Public Safety, Crime in Maine, 2000) and adjusting by 10% for inflation (Bureau of Labor Statistics, Consumer Price Index)
[2] derived using Attributable Fractions from NIDA/NIAAA, 1998, Table C.7

Criminal Victimization:

The economic cost associated with criminal victimization is the value of lost productivity due to time lost from work and the cost of medical care that the victim requires. There were no state level data on the number of crime victims, so the number of alcohol- and drug-related felonies was used for the analysis, and the assumption was made that there was one victim per offense. The average number of days lost from work was estimated in an earlier report by Liu (1992). In addition to the costs of lost work time, the costs of medical care needed by victims, as reported by NIDA/NIAAA (1998), were incorporated in the analysis. The number of offenses was multiplied by the estimated monetary loss, based on lost workdays and medical expenses, and the product was then multiplied by the appropriate attributable fraction for the offense.

The findings are shown in Table 5.8. As indicated, the estimated total economic loss in 2000 due to criminal victimization related to drug and alcohol abuse was $1.6 million, with drug abuse accounting for $1.3 million, or 85%.

Table 5.8
Estimated Productivity Losses for Victims of Crime, Maine, 2000

Type of Offense	Number of Offenses [1]	Average Work Days Lost [2]	AAF [2]	DAF [2]	Alcohol-Related Productivity Losses [3]	Drug-Related Productivity Losses [3]	Total Productivity Losses
Forcible Rape	318	4.6	0.225	0.024	$21,064	$2,247	$23,311
Aggravated Assault	812	3.7	0.300	0.051	$73,908	$12,564	$86,473
Robbery	246	4.4	0.034	0.272	$3,018	$24,142	$27,160
Burglary	6,759	1.7	0.036	0.300	$33,919	$282,661	$316,581
Larceny	23,808	1.7	0.028	0.296	$92,927	$982,375	$1,075,303
Motor Vehicle Theft	1,317	2.7	0.035	0.068	$10,205	$19,828	$30,033
Total	**33,260**				**$235,042**	**$1,323,817**	**$1,558,860**

Notes and Sources:
[1] Maine Department of Public Safety, Crime in Maine 2000, p. 96
[2] NIDA/NIAAA, 1998, Table B5
[3] calculated using median annual earnings of $21,285/ 260 work days= $82/day, except for forcible rape which is based on a median annual earning of $16,644 for women, or $64/day (U.S. Bureau of the Census, Census 2000, Table P85)

Summary

With costs estimated at $128.4 million, criminal activity represents a major component (21%) of overall drug and alcohol-related costs ($618.0 million). The category with the greatest cost was corrections ($40.2 million), followed by police protection ($37.2 million). Productivity loss due to incarceration was also significant, reaching $23.3 million. In contrast, prevention efforts received $6.0 million and supply reduction received $2.3 million. Unlike in other cost categories, drug abuse-related crime resulted in a higher proportion of total costs, than did alcohol abuse; $79.3 million in drug-related crime (62%) versus $49.1 million in alcohol-related crime (38%).

Chapter 6

Medical Care

Alcohol or drug abuse increases the risk of illness or injury and thereby increases the use of health care services. The effects of substance abuse on health care utilization may be obvious and immediate or more indirect and long term. The link between substance use and health care costs is clear in the case of an individual overdosing on drugs and then requiring hospitalization, or a person driving under the influence of alcohol who sustains serious injury in an auto accident and requires emergency hospital treatment. But prolonged alcohol abuse can also increase the risk for a number of diseases, including stomach cancer, cancer of the esophagus, respiratory tuberculosis, liver damage and pancreatitis, thereby increasing the demand for costly medical care as well as premature nursing home care. In addition, heavy alcohol use can affect not only the health of the individual with the disorder, but, in the case of a pregnant woman, can permanently affect the health of her unborn child, a condition known as Fetal Alcohol Syndrome.

Major Findings

- There were approximately 7,577 hospital discharges associated with medical conditions directly or indirectly related to drug or alcohol abuse.
- The total charges for hospital inpatient medical care related to substance abuse was estimated to be $59.9 million; in addition, an estimated $12.8 million in charges resulted from the extension of hospital stays due to substance abuse co-morbidity.
- The estimated cost of substance-related outpatient medical care was $21.0 million.
- The estimated cost of Fetal Alcohol Syndrome was $2.1 million
- Prescription drug costs and nursing home costs were, respectively, $13.7 million and $3.5 million.
- The total estimated medical care cost associated with substance abuse was $113.0 million or 18% of the total cost of substance abuse in Maine.

Methodology

For this chapter, medical costs are divided into three subsections: 1) inpatient and outpatient hospital costs; 2) FAS costs, and 3) prescription drug and nursing home costs. Because the method of collecting and analyzing the data was different for each of the sections, methodology is presented with the results in each section.

Results

Hospital Inpatient and Outpatient Costs

The estimation of hospital inpatient costs was based upon data from the Maine Health Data Organization (MHDO, 2002), which gathers information on total hospital charges, length of stay, diagnosis, gender and age for all hospital discharges in Maine. For this analysis, the Maine Health Data Organization supplied the number of inpatient discharges and associated charges for the treatment of primary conditions within selected diagnostic categories related totally or in part to drug and alcohol abuse (see Appendix C.1). In Table 6.1, injuries and poisonings related to alcohol abuse were grouped into one category; see Appendix C.2 for a breakdown into individual codes. The adjustment process using alcohol- and drug-attributable fractions followed the same procedure as was used to estimate mortality costs in Chapter 4; this is commonly known as the illness-specific approach (NIDA/NIAAA, 1998).

This illness-specific approach does not take into account the extra days a patient may stay in the hospital if he or she has an illness unrelated to substance abuse, but has a co-occurring alcohol or drug disorder. Estimating the costs of these extra days was not possible using the data obtained for this analysis, but it was possible to use cost estimates generated by the NIDA/NIAAA (1998) national study to extrapolate these costs to Maine. The NIDA/NIAAA study, which was based on analysis of over 200,000 records from the U.S. Hospital Discharge Survey (NCHS, 1993), found that hospital inpatient costs associated with longer stays due to co-occurring alcohol or drug conditions represented 21.3% of substance abuse specific and substance abuse related costs. Therefore, Maine cost estimates derived from the analysis of inpatient discharge data were then increased by this same percentage to account for the longer hospital stays associated with secondary (co-occurring) diagnoses related to substance abuse.

The estimation of alcohol- and drug-related outpatient charges was also based upon data from the Maine Health Data Organization (see Appendix C.3 for total charges). The same illness-specific approach discussed above was used to apply attributable fractions to these charges.

An estimated 7,577 hospital discharges occurred as a result of a medical condition or injury related to drug or alcohol abuse (Table 6.1). Approximately 5,612 or 74% of these were related to alcohol abuse. Males accounted for 4,280 discharges and females accounted for 3,297. Of the $59.9 million in hospital inpatient charges shown in Table 6.1, hospital care for alcohol-related conditions or injuries was $49.1 million (82%). The conditions that resulted in the highest charges were: alcohol-related injuries and poisonings ($16.2 million), alcohol psychoses and dependence ($12.7 million), drug psychoses and dependence ($6.6 million), alcohol-related acute pancreatitis ($3.9 million), cerebrovascular disease ($3.6 million), and various cancers ($3.2 million). Adding the cost of longer hospital stays due to co-occurring substance abuse increases the estimated total inpatient charges to $72.7 million.

Alcohol-Related Inpatient Charges:	$49,062,787 x 1.213	= $59,513,160
Drug-Related Inpatient Charges:	$10,856,915 x 1.213	= $13,169,438
Total Substance-Related Inpatient Charges:		**= $72,682,598**

As shown in Table 6.2, a total of 49,571 outpatient visits resulted in alcohol- and drug-related charges amounting to an estimated $21.0 million. Of these, alcohol-related charges made up 88% ($18.5 million). Alcohol-related injuries resulted in the greatest costs ($7.7 million), followed by Alcohol Dependence Syndrome and non-dependent abuse of alcohol ($4.9 million), various cancers ($2.0 million) and drug dependence and non-dependent abuse of drugs ($1.8).

Table 6.1
Estimated Alcohol- and Drug-Related Hospital Inpatient Charges, Maine, 2000

Diagnosis or Condition	AAF [1]	Est. Number of Alcohol-Related Discharges [2]		Estimated Alcohol-Related Inpatient Charges [3]		
		Males	Females	Males	Females	Total
Alcoholic psychoses	1	852	306	$5,135,779	$1,738,499	$6,874,278
Alcohol dependence syndrome	1	972	496	$3,916,319	$1,928,848	$5,845,167
Non-dependent abuse of alcohol	1	86	51	$425,324	$204,356	$629,680
Alcoholic polyneuropathy	1	2	0	$66,642	$0	$66,642
Alcoholic cardiomyopathy	1	7	2	$62,716	$11,144	$73,860
Alcoholic gastritis	1	23	4	$240,150	$34,796	$274,946
Alcoholic fatty liver	1	0	0	$0	$0	$0
Acute alcoholic hepatitis	1	34	12	$413,814	$108,536	$522,350
Alcoholic cirrhosis of the liver	1	121	29	$1,416,840	$358,033	$1,774,873
Alcoholic liver damage, unspecified	1	6	3	$57,812	$33,189	$91,001
Cancer of the lip, tongue oral cavity, pharynx [4]	0.5	26	8	$325,100	$74,877	$399,977
Cancer of the esophagus	0.75	37	11	$1,639,786	$137,392	$1,777,178
Cancer of the stomach	0.2	16	8	$446,769	$151,245	$598,014
Cancer of the liver and intrahepatic bile ducts	0.15	4	2	$63,952	$18,982	$82,934
Cancer of the larynx	0.49	13	3	$258,329	$58,507	$316,836
Essential hypertension	0.08	5	11	$23,897	$59,095	$82,991
Cerebrovascular disease	0.07	138	143	$1,754,596	$1,851,945	$3,606,541
Respiratory tuberculosis	0.25	2	0	$14,853	$0	$14,853
Diabetes mellitus	0.05	38	34	$518,230	$382,386	$900,616
Pneumonia and influenza	0.05	115	123	$1,226,055	$1,323,791	$2,549,847
Diseases of the esophagus, stomach, duodenum	0.1	108	112	$92,526	$1,100,947	$1,193,473
Chronic hepatitis	0.5	0	1		$4,155	$4,155
Cirrhosis without mention of alcohol	0.5	22	19	$287,776 $0	$208,705 $0	$496,481 $0
Other chronic nonalcoholic liver damage & disease	0.5	2	1	$16,961 $0	$7,504 $0	$24,465 $0
Portal hypertension	0.5	12	4	$201,931	$38,392	$240,322
Acute pancreatitis	0.42	167	144	$2,036,344	$1,874,912	$3,911,255
Chronic pancreatitis	0.6	31	23	$267,703	$251,265	$518,968
Injuries and poisonings [5]	varies	525	699	$7,760,896	$8,430,190	$16,191,085
Total Alcohol-Related Inpatient Discharges and charges		**3,362**	**2,250**	**$28,671,097**	**$20,391,689**	**$49,062,787**

(continued on next page)

Table 6.1 (continued)

Diagnosis or Condition	DAF [1]	Est. Number of Drug-Related Discharges [2]		Estimated Drug-Related Charges Costs [3]		
		Males	Females	Males	Females	Total
Drug psychoses	1	309	284	$2,017,429	$1,959,240	$3,976,669
Drug dependence	1	362	330	$1,253,300	$1,408,122	$2,661,422
Nondependent abuse of drugs	1	47	33	$355,222	$270,310	$625,532
Polyneuropathy due to drugs	1	0	2	$0	$25,011	$25,011
Drug dependence complicating pregnancy, childbirth, or puerperium	1	0	11	$0	$35,786	$35,786
Narcotics affecting fetus or newborn via placenta or breast	1	0	1	$0	$3,241	$3,241
Drug withdrawal syndrome in newborn	1	0	0	$0	$0	$0
Poisoning by opiates and related narcotics	1	42	34	$255,781	$255,775	$511,556
Poisoning by sedatives and hypnotics	1	16	38	$88,116	$157,308	$245,424
Poisoning by central nervous system muscle tone depressants	1	0	8	$0	$27,094	$27,094
Poisoning by psychotropic agents	1	142	304	$747,737	$1,988,815	$2,736,552
Poisoning by central nervous system stimulants	1	0	2	$0	$8,628	$8,628
Total Drug-Related Inpatient Discharges and Charges		**918**	**1,047**	**$4,717,585**	**$6,139,330**	**$10,856,915**
Total Drug and Alcohol-Related Inpatient Discharges and Charges		**4,280**	**3,297**	**$33,388,682**	**$26,531,019**	**$59,919,702**

Notes and Sources:

[1] AAF and DAF refer to alcohol and drug attributable fractions (Wickizer, 1999, and NIDA/NIAAA, 1998).

[2] Substance-related discharges are the total number of discharges (MHDO, 2003) multiplied by the corresponding attributable fraction.

[3] Substance-related charges are the total charges for these conditions (see Appendix C.1) multiplied by the corresponding attributable fraction.

[4] AAF is 40% in women.

[5] See Appendix C.2 for the specific injury and accident codes that make up this category.

Table 6.2

Estimated Alcohol- and Drug-Related Hospital Outpatient Charges, Maine, 2000

Diagnosis or Condition	AAF [1]	Est. Number of Alcohol-Related Outpatient Visits [2]		Estimated Alcohol-Related Outpatient Charges [3]		
		Males	Females	Males	Females	Total
Alcoholic psychoses	1	282	71	$115,420	$27,480	$142,899
Alcohol dependence syndrome	1	4,628	1,993	$2,269,850	$1,065,626	$3,335,476
Non-dependent abuse of alcohol	1	2,579	1,135	$1,014,936	$565,097	$1,580,033
Alcoholic polyneuropathy	1	11	3	$1,165	$1,588	$2,753
Alcoholic cardiomyopathy	1	1	0	$2,988	$0	$2,988
Alcoholic gastritis	1	49	27	$31,956	$16,517	$48,473
Alcoholic fatty liver	1	1	1	$262	$23	$285
Acute alcoholic hepatitis	1	44	17	$11,014	$2,426	$13,440
Alcoholic cirrhosis of the liver	1	115	36	$63,266	$20,028	$83,294
Alcoholic liver damage, unspecified	1	15	7	$5,725	$1,387	$7,112
Excessive blood levels of alcohol	1	2	1	$710	$140	$850
Cancer of the lip, tongue, oral cavity, pharynx (4)	0.5	429	154	$601,400	$178,274	$779,674
Cancer of the esophagus	0.75	614	149	$683,232	$227,673	$910,905
Cancer of the stomach	0.2	97	45	$92,930	$40,042	$132,972
Cancer of the liver and intrahepatic bile ducts	0.15	26	24	$30,831	$35,345	$66,176
Cancer of the larynx	0.49	49	10	$83,120	$13,655	$96,775
Essential hypertension	0.08	1,527	2,239	$246,534	$341,375	$587,909
Cerebrovascular disease	0.07	526	518	$252,726	$245,384	$498,110
Respiratory tuberculosis	0.25	8	10	$1,800	$2,024	$3,824
Diabetes mellitus	0.05	1,792	1,999	$274,961	$284,991	$559,952
Pneumonia and influenza	0.05	200	224	$64,986	$67,346	$132,333
Diseases of the esophagus, stomach, duodenum	0.1	749	928	$545,631	$616,981	$1,162,612
Chronic hepatitis	0.5	29	58	$20,027	$18,255	$38,282
Cirrhosis without mention of alcohol	0.5	285	189	$87,404	$58,909	$146,313
Other chronic nonalcoholic liver damage & disease	0.5	60	68	$39,693	$42,255	$81,948
Portal hypertension	0.5	17	10	$14,413	$9,772	$24,185
Acute pancreatitis	0.42	148	158	$83,696	$81,006	$164,702
Chronic pancreatitis	0.6	85	96	$53,911	$75,805	$129,716
Injuries (5)	varies	10,451	9,429	$4,256,669	$3,462,252	$7,718,921
Total Alcohol-Related Outpatient Visits and Charges		**24,818**	**19,597**	**$10,951,258**	**$7,501,656**	**$18,452,914**

(continued on next page)

Table 6.2 (continued)

Diagnosis or Condition	DAF [1]	Est. Number of Drug-Related Outpatient Visits [2]		Estimated Drug-Related Charges [3]		
		Males	Females	Males	Females	Total
Drug psychoses	1	328	277	$141,192	$140,092	$281,283
Drug dependence	1	1,336	931	$675,462	$433,683	$1,109,145
Non-dependent abuse of drugs	1	1,197	610	$422,234	$275,338	$697,571
Polyneuropathy due to drugs	1	0	1		$150	$150
Drug dependence complicating pregnancy, childbirth, or puerperium	1	0	0	$0	$0	$0
Narcotics affecting fetus or newborn via placenta or breast	1	0	0	$0	$0	$0
Drug withdrawal syndrome in newborn	1	0	0	$0	$0	$0
Poisoning by opiates and related narcotics	1	33	30	$29,545	$18,881	$48,426
Poisoning by sedatives and hypnotics	1	1	4	$1,286	$2,028	$3,314
Poisoning by central nervous system muscle tone depressants	1	7	10	$8,591	$7,331	$15,923
Poisoning by psychotropic agents	1	145	245	$134,540	$221,401	$355,940
Poisoning by central nervous system stimulants	1	0	1		$85	$85
Total Drug-Related Outpatient Visits and Charges		**3,047**	**2,109**	**$1,412,850**	**$1,098,988**	**$2,511,838**
Total Drug and Alcohol-Related Outpatient Visits and Charges		**27,865**	**21,706**	**$12,364,108**	**$8,600,644**	**$20,964,752**

Notes and Sources:

[1] AAF and DAF refer to alcohol and drug attributable fractions, from Wickizer, 1999, and NIDA/NIAAA, 1998.

[2] Substance-related cases are the total number of outpatient cases from MHDO (2003) multiplied by the corresponding attributable fraction

[3] Substance-related charges are the total charges multiplied by the corresponding attributable fraction.

[4] AAF is 40% among women

[5] See Appendix C.4 for the specific injury and accident codes that make up this category.

Fetal Alcohol Syndrome

Fetal Alcohol Syndrome (FAS) results from exposure of a fetus to alcohol over the course of a woman's pregnancy. Damage to the fetus can be physical, mental, or both. The diagnosis of FAS is often based on three criteria (Abel and Sokol, 1987): (1) pre and/or post natal growth retardation, or weight, length, and/or head circumference below the tenth percentile; (2) central nervous system problems, including neurological abnormality or intellectual impairment; and (3) characteristic facial features, including small eyes, crossed eyes, or abnormalities of the mouth such as cleft palate. Other problems associated with FAS include heart defects, hearing loss, visual defects, dental defects, and mental retardation.

Determining the number of persons living with FAS is difficult. Many babies with FAS do not exhibit characteristic behaviors and growth abnormalities until age two or three, making diagnosis and surveillance more complicated. Abel (1995) updated incidence rates for the U.S. overall and found that among the general obstetric population the incidence of FAS is 0.97 per 1,000 live births, but this rate increases to 43 per 1,000 among women who drink heavily. The State of Maine Treatment Needs Assessment, Study 1 (OSA, 1998) estimates that one in five pregnant adult women in Maine need intervention because of her use of alcohol. If we applied this rate to the number of women whose pregnancy resulted in a live birth, 13,590 (ODRVS, 2003c), and Abel's estimate that 4.3% of these births could result in an FAS birth, yields an estimate of 117 FAS births in Maine in 2000.

A more conservative estimate is derived from data from the Center for Disease Control and Prevention's Fetal Alcohol Syndrome Surveillance Network (FASSNet). The FAS rates from this multi-source surveillance system collected between 1995 and 1999 in Alaska, Arizona, Colorado and New York, ranged from a low of 0.30/1000 live births in Arizona to 1.4/1000 in Alaska. However, the FASSNet data may underestimate the true prevalence of the disorder, because cases were diagnosed before the age of six (Fox, et al., 2003) and the average age at which FAS is diagnosed is 6.5 years (Loudenburg, 2002). For this study we used the same FAS birth rate as that cited by Wickizer in the 1999 Washington State report, 1.3 per 1,000 live births, yielding an estimated 18 FAS infants born in Maine in 2000.

The most widely reported cost associated with FAS is for intensive neonatal care for newborns. It is estimated that 75% of all FAS babies are low birth weight. Applying this figure to the estimated number of FAS infants in Maine (18) suggests that as many as 14 FAS infants may have needed neonatal intensive care during 2000.

In addition to these costs at birth, there are other medical costs incurred by FAS children and adults. These costs are related to surgical procedures needed to correct problems resulting from FAS, e.g., cleft palate surgery, as well as special services needed to monitor development, e.g., audio screening. Finally, some FAS children and adults who have serious mental problems or developmental disabilities may need special services, ranging from special education to prolonged institutional care.

In order to estimate the cost of FAS in Maine in 2000, we used Wickizer's per case medical costs for 1996 adjusted for inflation using 6.1% per year (Harwood, 2000). As Table 6.4 shows, estimated FAS costs in 2000 were $2.1 million. This is a conservative estimate of the true cost of substance-related fetal abnormalities, as it does not address less serious fetal alcohol effects or the effects from *in utero* exposure to drugs.

Table 6.3
Estimated Cost of Fetal Alcohol Syndrome (FAS)
Maine, 2000

Complications	Costs
Medical*	$341,028
First year rehospitalization	$39,071
Mental Retardation	$569,132
Neonatal Care	$1,054,250
Neonatal physician care	$116,988
Total	**$2,120,469**

Notes and Source:

*Medical costs includes initial audio screening, audio check-up, otitis media surgery, hearing aids, hearing aid mold, heart surgery, and cleft palate surgery (Wickizer, 1999)

Prescription Drugs and Nursing Homes

Cost estimates for prescription drugs in Maine came from the Henry J. Kaiser Family Foundation (2003). An attributable fraction of 2.2% was used by NIDA/NIAAA (1998) as the proportion of prescription drugs used for the medical treatment of diseases and injuries related to alcohol abuse. This figure is based upon earlier research by Harwood et al. (1984), indicating that 2.2% of hospital inpatient days are due to illnesses caused wholly or in part to alcohol abuse. No equivalent estimates have been made for drug abuse.

Cost estimates for nursing home care were derived from unpublished data prepared by Maine's Community Service Center (2003). Based on research from the 1985 National Nursing Home Survey, it is assumed that 1.0% of all nursing home expenditures can reasonably be related to alcohol abuse (NCHS, 1989). The cost estimates for these two categories are shown in Table 6.4. For prescription drugs, the estimated cost was $13.7 million, and for nursing home care the estimated cost was $3.5 million. Both of these costs are attributed to alcohol abuse.

Table 6.4
Estimated Costs of Prescription Drugs and Nursing Home Care, Maine, 2000

Cost Category	Total Costs
Prescription Drugs [1]	13,709,872
Nursing Home Care [2]	3,480,110
Total [3]	**$17,189,982**

Sources:
[1] Henry J. Kaiser Family Foundation, State Health Facts Online
[2] Community Service Center, 2003
[3] Attributable fractions (2.2% of prescription drugs costs and 1.0% of nursing home care costs) are from NIDA/NIAAA, 1998, p. 4-26
Note: All of these costs are attributed to alcohol use disorders.

Summary

Total medical costs associated with drug and alcohol abuse in Maine were estimated to be $113.0 million, or 18% of the total costs of substance abuse. At an estimated $72.7 million, hospital inpatient charges made up the largest proportion (64%) of this total, including $12.8 million in charges resulting from the extension of hospital stays due to co-occurring substance abuse. Inpatient charges resulting from alcohol abuse accounted for $59.5 million or 82% of substance-related inpatient charges. Outpatient medical services accounted for $21.0 million. The cost of FAS was estimated to be $2.1 million, while prescription drugs accounted for $13.7 million, and nursing home care accounted for another $3.5 million.

Chapter 7

Other Related Costs

In addition to the costs examined in the previous chapters, there are three other drug and alcohol-related costs that are included in this analysis. These are the substance abuse related costs of: 1) child welfare and the administration of other social welfare programs, 2) fire protection and the destruction caused by fire, and 3) the non-medical costs of motor vehicle accidents. The general methodology used to estimate these costs was similar to that used to estimate other costs; attributable risk coefficients, used by Rice at al. (1990) and NIDA/NIAAA (1998), were applied to cost data obtained from available sources and used to generate estimates of costs related to drug and alcohol abuse in Maine.

Major Findings

- An estimated $67.7 million in child welfare costs related to substance abuse was spent in Maine during 2000; an additional $1.7 million was spent in the administration of other social welfare programs.
- In 2000, the estimated cost of fires associated with alcohol abuse in Maine was $8.5 million.
- The non-medical cost of alcohol-related motor vehicle crashes in Maine in 2000 is estimated at $41.7 million.
- The combined cost of all three cost categories was $119.6 million.

Methodology

Since the methods used to derive the cost estimates vary for the three categories, the methodological description is provided as part of the results sections.

Results

Social Welfare

Child Welfare:

Although there is little documented data on this subject for Maine, a report by the Maine Bureau of Child and Family Services (BCFS) to the Maine Legislature indicates that 50% or more of the Bureau's clients in State Fiscal Year 2003 needed substance abuse services. This estimate is supported by data from the National Center on Addiction and Substance Abuse at Columbia University (CASA, 1999), which states that in a survey of child welfare professionals, the vast majority felt that "substance abuse causes or contributes to at least half of all cases of child maltreatment". This report goes on to suggest that, based on additional research, an average of 70% of cases of child abuse and neglect are directly or indirectly associated with substance abuse. For this report we will use a conservative estimate of 55% (BCFS, 2003a) and assume that of the substance abuse-related cases, 67% were due to alcohol abuse by parents or guardians and 33% were due to drug abuse, based on NIDA/NIAAA's distribution of social welfare administration costs.

The estimated total cost of protecting Maine's children from abuse and neglect in 2000 is $123 million (BCFS, 2003b). Applying the above proportions to this total, we estimate that child welfare costs due to substance abuse were $67.7 million with $45.1 million due to alcohol abuse and $22.6 million due to drug abuse.

Other Social Welfare Administration:

The social welfare programs discussed in this section serve individuals with substance abuse problems, and, therefore, it is appropriate to include a portion of these expenses as part of the overall costs of substance abuse. Direct welfare payments to these clients, however, are considered transfer (redistribution) payments, and so only administrative costs are included.

Drug and alcohol-related administrative costs for the following social welfare programs are shown in Table 7.1. The first two federal programs are administered by the Social Security Administration: Old Age, Survivors and Disability Insurance (OASDI) (SSA, 2001a) and Supplemental Security Income (SSI) (SSA, 2001b). The next program category includes Temporary Assistance for Needy Families (TANF) (U.S. Department of Health and Human Services) and the Food Stamp Program (U.S. Department of Agriculture). The third category of drug- and alcohol-related social welfare administration costs is veterans' pensions and rehabilitation (U.S. Department of Veterans Affairs).

Again, we used the same substance attributable fraction as those used by NIDA/NIAAA (1998). As shown in Table 7.1, only a small percentage of the total administrative costs are considered alcohol- or drug-related. The total estimated cost for these programs combined is approximately $1.7 million.

Table 7.1
Estimated Administrative Costs of Selected Social Welfare Programs Attributed to Substance Abuse, Maine, 2000

Program	Total Admin. Costs	% Attributed to Alcohol or Drug Abuse [1]	Alcohol and Drug Admin. Costs	Attributed to: Alcohol (67%) [1]	Drugs (33%) [1]
OASDI [2]	$53,950,000	1.7	$917,150	$614,491	$302,660
SSI [3]	$8,625,138	3.0	$258,754	$173,365	$85,389
Public Assistance: TANF [4]	$2,219,963	5.2	$115,438	$77,344	$38,095
Food Stamps [5]	$4,803,084	5.2	$249,760	$167,339	$82,421
Veterans Compensation and Pension [6]	$10,559,985	1.7	$179,520	$120,278	$59,242
Total			**$1,720,622**	**$1,152,817**	**$567,805**

Sources:
[1] NIDA/NIAAA, 1998, Table D.3.
[2] Social Security Administration; Old Age, Survivors and Disability Insurance (OASDI), 2001a, Table 5.J1 (CY 2000)
[3] Social Security Administration; Supplemental Security Income (SSI), 2001b,Table 7.B7 (CY 2000)
[4] U.S. Dept. of Health and Human Services; Temporary Assistance for Needy Families (TANF), Table B (FY 2000)
[5] U.S. Dept. of Agriculture; Food Stamp Program Annual Benefits (FY 2000)
[6] U.S. Department of Veterans Affairs; Table 22: Estimated Selected Expenditures by State, FY 2000, Table 22

Fire Protection and Destruction Due to Fire

While alcohol plays a role in economic losses resulting from fire destruction, the extent of this role is unclear. The best available information from an early study (Berry & Boland, 1973) suggests that approximately 6.1% of structural fire destruction and 11.2% of fire protection costs can be attributed to alcohol use. Because the total cost of structural damage and fire protection in Maine is not available, we used national per capita costs adjusted for inflation. The source of structural fire damage cost was from the National Fire Protection Association (2002) and the costs of fire protection were from the U. S. Bureau of the Census (1994). For Maine, the total estimated cost of fire destruction related to alcohol abuse was $8.5 million.

Table 7.2
Estimated Alcohol-Related Cost of Fire Protection and Property Damage and Destruction Due to Fire
Maine, 2000

Type of Cost/Loss	Total Costs/Losses	Alcohol Attributable Fraction [3]	Total Alcohol-Related Costs/Losses
Fire Protection Costs [1]	$54,744,985	0.112	$6,131,438
Property Damage/Destruction [2]			
Residential Structure	$25,692,894	0.061	$1,567,267
Other Structure	$12,804,459	0.061	$781,072
Total			**$8,479,777**

Notes and Sources:
[1] U. S. Bureau of the Census, 1994; per capita costs were calculated and adjusted for inflation.
[2] National Fire Protection Association, 2002, Fire Loss in the United States During 2001
[3] Berry and Boland, 1973

Motor Vehicle Crashes (Non-Medical Costs)

Use or abuse of drugs and alcohol is a significant risk factor for motor vehicle crashes. Costs resulting from alcohol- or drug-related accidents result in premature death, medical care, vehicle damage, and legal and court costs. The costs related to premature death were presented in Chapter 4, and those related to medical care were reported in Chapter 6. This section reports on other costs resulting from alcohol-related motor vehicle accidents: legal and court costs, insurance administration, and vehicle damage. While drug abuse is known to contribute to some accidents, we found no published, reliable research on the frequency of drug-related accidents that do not involve alcohol.

The source of the cost data is NIDA/NIAAA (1998, Table 6-17). Data on the percent of alcohol-related fatalities in Maine was provided by the U.S. Department of Transportation, and was defined as a crash involving a driver with a Blood Alcohol Content (BAC) at or above 0.10 grams per deciliter. To calculate the costs attributable to alcohol of less severe crashes, we used the same proportions, relative to fatal crashed, as those used by NIDA/NIAAA (1998). Per capita costs of motor vehicle crashes were calculated using the NIDA/NIAAA results, which were multiplied by the Maine 2000 population and adjusted for inflation (a 22.7% increase since 1992). Table 7.3 shows these estimates for Maine by the type of cost and severity of the crash. Details of these calculations are shown in Appendix D.

Table 7.3
Estimated Non-Medical Cost of Alcohol-Related Motor Vehicle Crashes, Maine, 2000

Type of Cost [1]	Type/Severity of Crash				Total
	Fatal	Severe/ Critical Injury	Minimum/ Moderate Injury	Property Damage Only	
Legal/Court Costs	$18,849,561	$18,649,388	$15,391,028	--	$52,889,976
Insurance Administration	$12,844,391	$21,101,499	$17,414,992	$18,921,845	$70,282,727
Vehicle/Roadway Damage	$2,140,732	$6,911,506	$89,310,219	$174,272,250	$272,634,706
Total	**$33,834,683**	**$46,662,393**	**$122,116,239**	**$193,194,095**	**$395,807,410**
Percent Attributed to Alcohol Abuse [2]	22%	17.3%	9.4%	7.6%	10.5%
Costs Attributed to Alcohol Abuse	**$7,443,630**	**$8,084,260**	**$11,417,868**	**$14,769,689**	**$41,715,447**

Notes and Sources:
[1] NIDA/NIAAA, 1998, Table 6-17; US per capita costs were adjusted for inflation using the CPI (22.7% increase since 1992).
[2] U.S. Department of Transportation, 2000, State Traffic Data, Table 4; the percent of fatal crashes involving a driver with a BAC $\geq$0.10 g/dl is actual Maine data; other percentages are calculated using NIDA/NIAAA figures.
Details of how these data were derived are shown in Appendix D.

In Maine in 2000, 22% of fatal motor vehicle crashes involved a driver with a blood alcohol level of 0.10 g/dl or greater (U.S. Department of Transportation). The total non-medical costs of alcohol-related automobile crashes were estimated at $41.7 million, with property damage accounting for the largest proportion, $14.8 million (35%), followed by minimum to moderate injuries, $11.4 million (27%).

Summary

This chapter presented estimates for selected costs not included in previous chapters. Of the three cost categories examined, social welfare costs were the highest, with child welfare estimated to be $67.7 million and the administration of other programs an additional $1.7 million. Motor vehicle accidents also posed a significant economic loss ($41.7 million), and the cost of alcohol-related fires, including protection costs, was $8.5 million. The total cost for these three categories was $119.6 million, or 19% of the total economic cost of substance abuse.

Chapter 8

Summary

The purpose of this report has been to assess in economic terms the cost to society of substance abuse among Maine residents in 2000. It attempts to quantify these costs broken down by the major categories in which actual costs are expended or opportunities for economic productivity are lost: Substance Abuse Treatment, Morbidity, Mortality, Crime, Medical Care, and Other Related Costs. Although this type of analysis cannot measure the emotional toll exacted by alcohol and drug abuse, and devalues certain segments of the population (e.g., youth, homemakers and the elderly), it nonetheless provides a valuable comparison between the resources invested in the prevention and treatment of substance abuse, and the costs resulting from these disorders. This report also provides a bench mark for tracking changes in these costs over time.

Major Findings

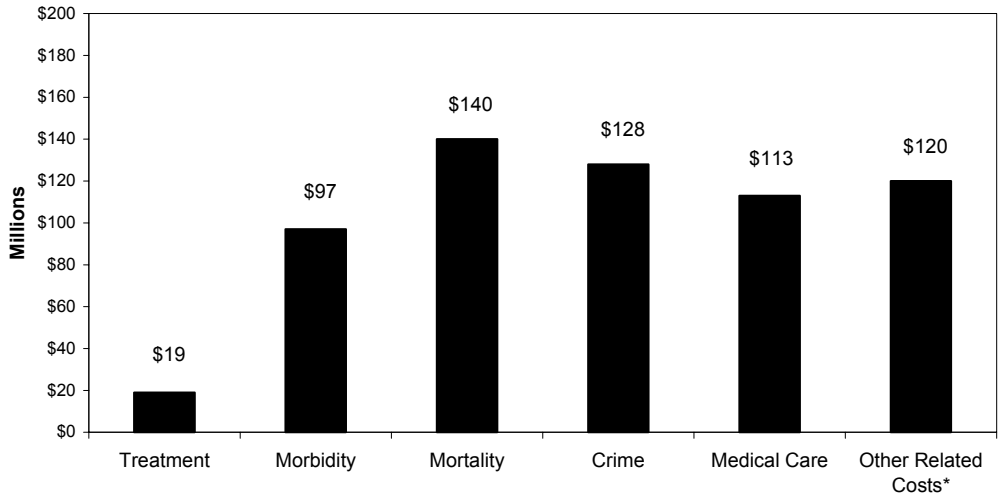
- In 2000, the total estimated cost of substance abuse in Maine was $618 million; $432 million in alcohol-related causes and $186 million in drug-related causes.
- This $618 million translates into a cost equaling $485 for every resident of Maine.
- Drug abuse made up a smaller proportion of the total cost in Maine than in the United States as a whole: 30% in Maine versus 41% in the U.S.
- At $19 million, substance abuse treatment comprised the smallest proportion of total cost (3%), while lost earnings due to mortality, $140 million, comprised the largest proportion (23%).
- Illness or injury associated with substance abuse resulted in 49,571 outpatient visits ($21 million), 7,577 hospital discharges ($60 million*) and 541 deaths ($140 million).

* an estimated $13 million in additional inpatient charges resulted from extensions to hospitalizations prolonged due to co-occurring alcohol or drug use disorders.

Overview

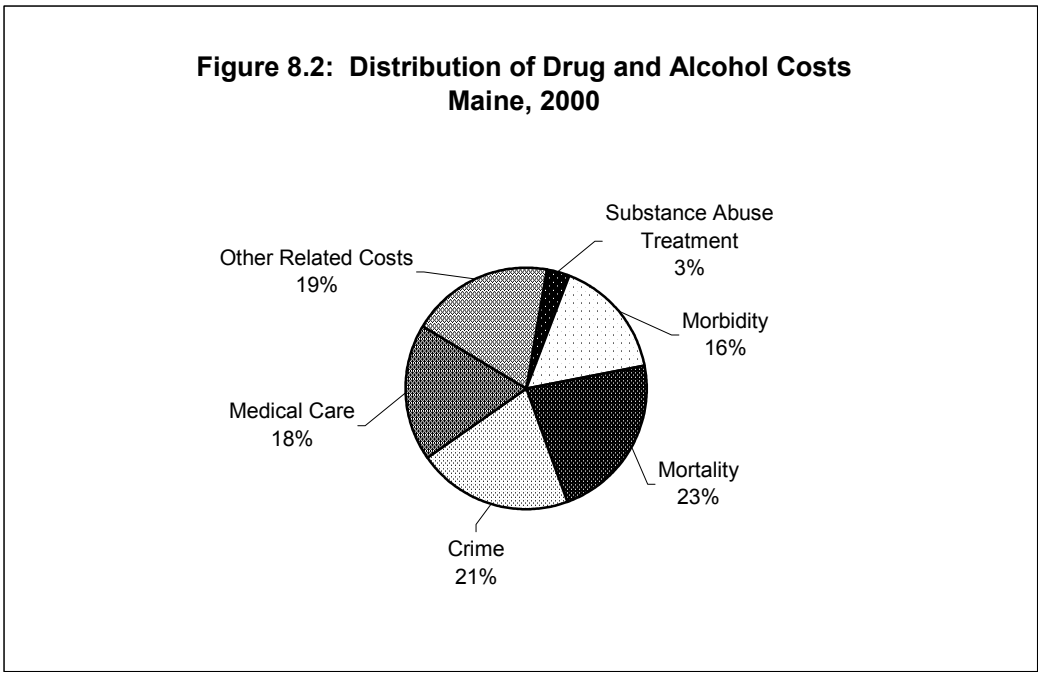
The total economic cost of drug and alcohol abuse in Maine in 2000 was estimated at $618.0 million (see Appendix E for a detailed breakdown by category). Figure 8.1 shows these costs for the six areas analyzed in the previous chapters. As shown, the largest single cost category was mortality, which accounted for an estimated $140.3 million, followed by crime with estimated costs totaling $128.4 million. There were also significant costs due to medical care ($113.0 million), morbidity ($97.4 million), and other related costs ($119.6 million), which includes $67.7 million in child welfare expenses. The $618.0 million translates to a per capita cost of $485 for every Maine resident.

Figure 8.1: Estimated Economic Costs of Drug and Alcohol Abuse in Maine, 2000

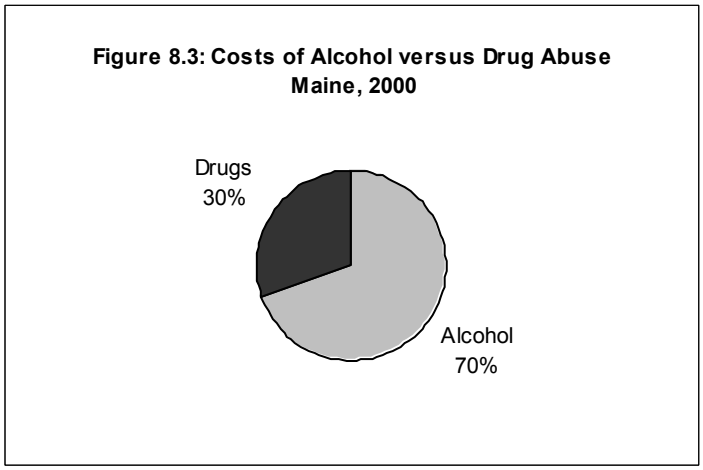


* includes $68 million in child welfare costs

Shown as percentages of the total cost (Figure 8.2), mortality accounted for 23%, followed by crime (21%) and other related costs (19%).

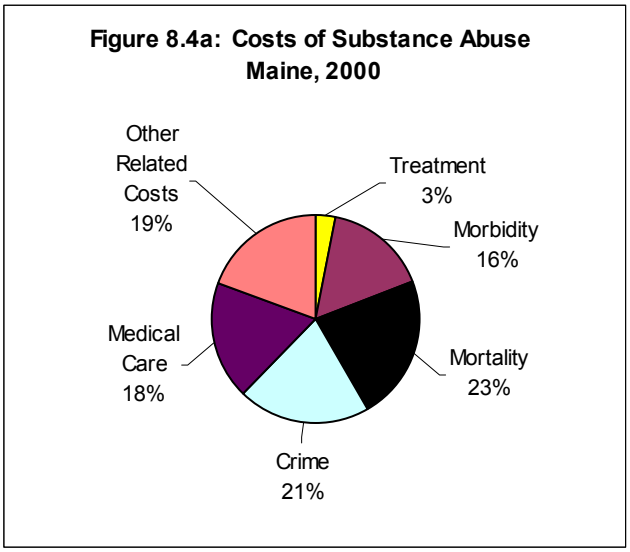


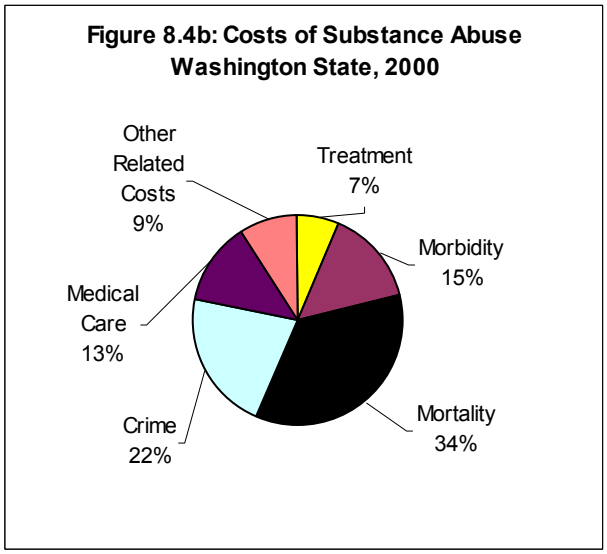
In Figure 8.3, costs are broken down by substance. In 2000, alcohol abuse accounted for an estimated 70% of total costs, and drug abuse accounted for the remaining 30%. (Crime was the only category in which drug-related costs exceeded the costs related to alcohol abuse).



Maine versus Washington State

One way to assess the costs of substance abuse in Maine is to compare the results of this report with the 1996 Washington State report by Wickizer (1999), whose methodology we used extensively. Figure 8.4a shows the total cost broken down by categories for Maine, and Figure 8.4b shows Wickizer's corresponding estimates for Washington, extrapolated to 2000 values using Harwood's inflation and growth estimates.





The proportion of cost due to morbidity and crime were similar in both states. However, the proportion comprising substance abuse treatment costs in Maine was less than half that for Washington (3% versus 7%, respectively). In addition, mortality was 11 percentage points lower in Maine, and medical care was 5 percentage points higher. Other related costs made up a higher proportion of total costs because of the inclusion of child welfare expenses in Maine's analysis.

Comparing treatment costs reveals interesting differences. Although the treatment rate was higher in Maine, 911/100,000 residents versus 648/100,000 in Washington, Maine had a much lower proportion of outpatients (67% versus 92% in Washington), and a much lower cost per client even without adjusting for inflation, $1,662 versus $4,505 in Washington.

There were several factors that contributed to a lower proportion of mortality costs in Maine. First, Maine's overall death rate due to substance abuse was 18% lower than that for Washington (42.4/100,000 vs. 51.5/100,000, respectively). This was in part due to a much lower death rate from

drug-related causes (5.3/100,000 in Maine versus 9.2/100,000 in Washington). Second, those persons in Maine who did die of substance–related conditions tended to be older, resulting in fewer years of potential life lost (YPLL), and, therefore, less loss of potential earnings; 74% of persons in Maine who died of drug- or alcohol-related conditions were over the age of 44 versus 64% in Washington. Third, Maine's median wage was 20% lower than that of Washington in 2000. Therefore, a lower death rate, fewer YPLL per death and lower cost per YPLL contributed to Maine's overall lower proportion of substance abuse costs due to mortality.

The differences in medical care costs are more difficult to explain. As shown in Table 8.1, the per capita estimated cost for medical care in Maine was 92% higher than the corresponding cost estimates for 2000 for the State of Washington.

Table 8.1
Comparison of Per Capita Medical Care Cost of Substance Abuse
Maine vs. Washington, 2000

	Maine		**Washington**		
	2000		1996	2000 est.	
	Total Cost	Per Capita Cost [1]	Total Cost	Total Cost [2]	Per Capita Cost [1]
Inpatient	$72,682,598	$57.01	$130,757,757	$165,702,476	$28.11
Outpatient	$20,964,752	$16.44	$38,500,000	$48,789,039	$8.28
Prescription Drugs	$13,709,872	$10.75	$29,800,000	$37,763,984	$6.41
Nursing Home	$3,480,110	$2.73	$11,800,000	$14,953,524	$2.54
Total	**$110,837,332**	**$86.94**	**$210,857,757**	**$267,209,022**	**$45.33**

Notes:
[1] based on the 2000 population: 1,274,923 in Maine and 5,894,121 in Washington
[2] using an inflation rate of 6.1% per year or 26.7% over the 4-year period.

This is not due to overall higher medical costs in Maine; the cost per inpatient discharge was actually somewhat lower than in Washington after adjustments were made for inflation ($7,908 per discharge in Maine and $8,628 per discharge in Washington). Nor were the higher costs due to a higher prevalence of substance abuse in Maine (7.6% of residents 18 or older in Maine versus 8.5% in Washington). The higher medical costs are the result of more discharges than would be expected given Washington State's results. Table 8.2 shows each substance-related condition for which the observed number of discharges

in Maine is at least 50% higher than expected. The conditions with the highest observed-to-expected ratios are directly related to alcohol or drug abuse: alcoholic psychosis (362% for males, 347% for females), alcoholic dependence syndrome (213% for males, 198% for females), drug psychoses (281% for males, 319% for females) and non-dependent abuse of drugs (271% for males, 230% for females).

Table 8.2
Substance-Related Conditions/Injuries with Number of Discharges at Least 50% Higher than Expected
Maine, 2000

ALCOHOL

Condition	Males				Females			
	WA [1]	ME exp [2]	ME obs [3]	**obs/exp [3]/[2]**	WA [1]	ME exp [2]	ME obs [3]	**obs/exp [3]/[2]**
Alcoholic psychoses	950	235	852	**362%**	356	88	306	**347%**
Alcohol Dependence Syndrome	1841	456	972	**213%**	1013	251	496	**198%**
Alcoholic cardiomyopathy	18	4	7	**157%**	4	1	2	**202%**
Cancer of the esophagus	89	22	37	**167%**	(39	10	11	114**%)**
Cancer of the larynx	(36	9	13	148**%)**	7	2	3	**173%**
Essential hypertension	12	3	5	**180%**	19	5	11	**234%**
Injuries	1187	294	525	**177%**	1137	282	699	**246%**
Total alcohol-related conditions/ injuries	7048	1747	3,362	**192%**	5161	1279	2,251	**176%**

DRUGS

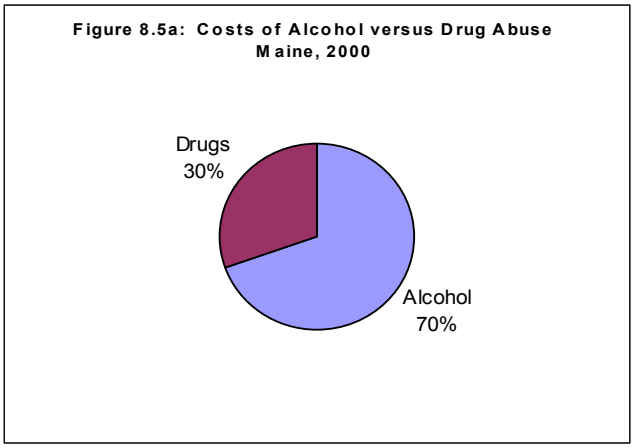
Condition	Males				Females			
	WA [1]	ME exp [2]	ME obs [3]	**obs/exp [3]/[2]**	WA [1]	ME exp [2]	ME obs [3]	**obs/exp [3]/[2]**
Drug psychoses	444	110	309	**281%**	359	89	284	**319%**
Drug dependence	778	193	362	**188%**	577	143	330	**231%**
Nondependent abuse of drugs	70	17	47	**271%**	58	14	33	**230%**
Poisoning by sedatives/hypnotics	39	10	16	**166%**	58	14	38	**264%**
Total drug-related conditions	2,077	515	918	**178%**	1,543	382	1,047	**274%**

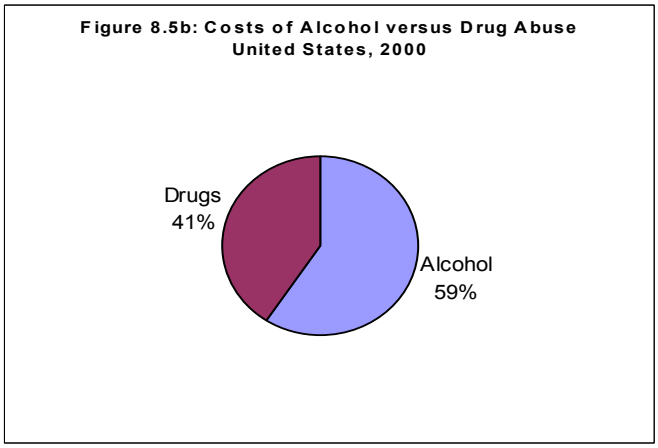
Notes and Sources:
[1] from Wickizer, 1999, Table 6.1
[2] = [1] multiplied by the ratio of Maine's 2000 population to Washington's 1996 population 18 and over (973,685/3,928,258=0.248)
[3] from Table 6.1

Maine versus the United States

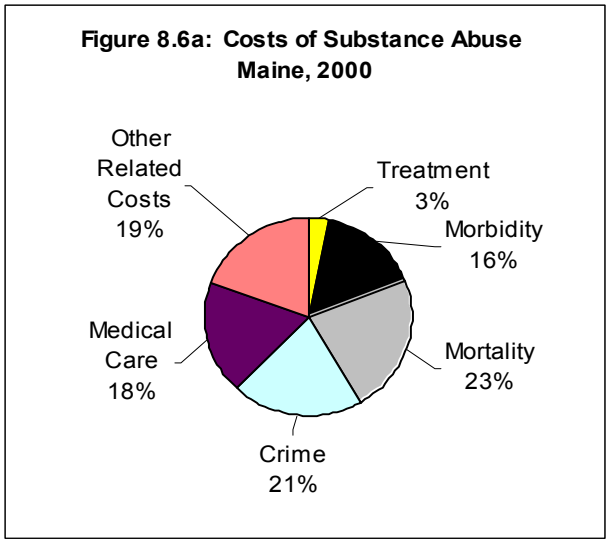
Earlier estimates of the cost of substance abuse in Maine have been based solely on national data, resulting in an estimate roughly twice what we have observed in this report. To determine the reasons for this disparity, we estimated U.S. costs in 2000 by using the NIDA/NIAAA results (1998, Table 7.6) and the annual inflation/growth rates compiled by Harwood (2000) for 1992 through 1998. (See Appendix F for details of this calculation.) The resulting estimate of total substance abuse cost for the U.S. in 2000 was $335.0 billion. In 2000, Maine's population was 0.45% of the U.S. population. If the substance abuse costs were proportional we would expect Maine's total cost to be $1.5 billion or more than twice our estimate of $618 million. These findings are consistent with those of Wickizer whose observed substance abuse costs of $2.5 billion was less than half the $5.3 billion estimate based on NIDA/NIAAA results.

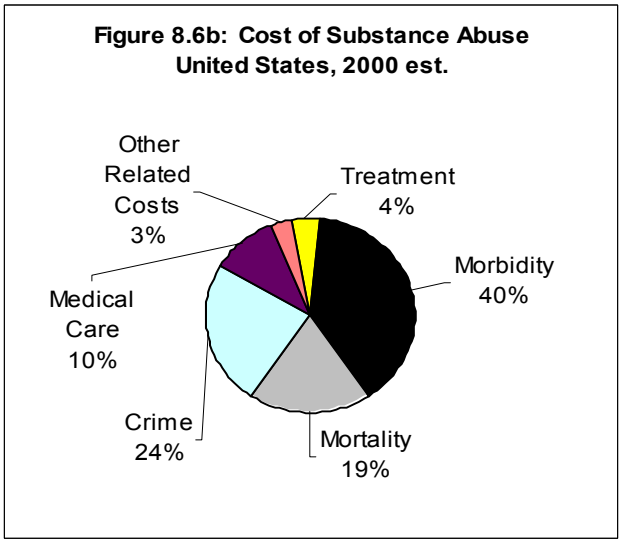
Figures 8.5a and b show the relative proportion of alcohol versus drug abuse costs for Maine (a) and the U.S. (b); in Maine, drug abuse made up 30% of total substance abuse costs versus 41% in the U.S.





Figures 8.6a and 8.6b compare the total substance abuse cost in Maine and the U.S. broken down by cost categories. The category that shows the greatest difference is morbidity, which is 24 percentage points higher in the U.S. estimates. This difference is in large part due to methodology. While both studies rely on household surveys to determine the prevalence of substance use disorders, Maine's estimate is based on the prevalence of substance dependency or abuse, as defined in DSM-III, during the 12 months prior to the survey, and NIDA/NIAAA based their analysis on dependency only (as defined in DSM-IV) occurring any time during the individual's lifetime. This resulted in higher estimated prevalence rates for the U.S.; for example, the 12-month prevalence of an alcohol disorder among males 18-64 in Maine was 9.8% while the lifetime prevalence of alcohol dependency among males in this age group in the U.S. was 21.3%.





To compare the substance abuse cost differences between Maine and the U.S. in more detail we calculated the per capita costs for each cost subcategory (see Table 8.3). Overall, the estimated per capita cost of substance abuse in Maine was $485 compared to $1,190 in the U.S. as a whole. Twenty-one percent (21%) of the difference was due to cost categories not included in the Maine analysis (shaded area in table). For instance, in the NIDA/NIAAA report, treatment costs included professional training, research and development, and the administration of insurance benefits; the costs of crime included lost productivity of career criminals, and medical care costs included the treatment of tuberculosis, HIV, Hepatitis B and C, and the hospitalization of drug-exposed infants.

In addition to these methodological differences, a lower per capita drug abuse cost in several categories also contributed to the lower per capita substance abuse costs in Maine. The per capita cost of drug-related crime in Maine was 21% that of the U.S., due in part to less productivity loss due to incarceration. The per capita cost of drug treatment in Maine was also a fraction of the national cost ($3 versus $17).

Three sub-categories in which Maine's per capita cost estimates exceeded those of the U.S. were hospital care, prescription drugs and child welfare. Although the higher per capita hospital costs due to alcohol-related conditions were similar enough to be explained by a low estimate of U.S. costs in 2000 (an annual inflation rate of 6.1% was used), the drug-related medical costs in Maine were 3 to 4 times higher, and the per capita cost of prescription drugs was 3 times higher. The child welfare cost related to substance abuse in Maine was estimated to be 55% of total child welfare costs, while NIDA/NIAAA only took 3.3% of administrative costs for their estimate.

Table 8.3
Estimated Per Capita Substance Abuse Costs
Maine vs. United States, 2000

Cost Category	Alcohol			Drug			Total		
	Maine	U.S.	ME/US	Maine	U.S.	ME/US	Maine	U.S.	ME/US
TREATMENT	**$11.81**	**$23.88**	**49%**	**$3.33**	**$19.48**	**17%**	**$15.14**	**$43.36**	**35%**
Treatment	$11.81	$21.73	**54%**	$3.33	$16.81	**20%**	$15.14	$38.54	**39%**
Support for Specialty Services	-	$2.15	-	-	$2.67	-	-	$4.82	-
MORBIDITY	**$54.77**	**$336.57**	**16%**	**$21.65**	**$76.26**	**30%**	**$77.83**	**$412.83**	**19%**
In Labor Force/Housekeeping	$54.77	$324.39	**17%**	$23.06	$69.08	**33%**	$77.83	$393.47	**20%**
Institutionalized	-	$4.92	-	-	$5.94	-	-	$10.86	-
Hospitalized	-	$2.44	-	-	$1.24	-	-	$3.68	-
FAS (Lost Earnings)	-	$4.81	-	-	$0.00	-	-	$4.81	-
MORTALITY	**$81.71**	**$136.69**	**60%**	**$28.37**	**$63.60**	**45%**	**$110.08**	**$200.28**	**55%**
CRIME	**$38.54**	**$68.71**	**56%**	**$62.20**	**$291.81**	**21%**	**$100.74**	**$360.53**	**28%**
Law Enforcement	$9.85	$11.13	**88%**	$25.92	$33.23	**78%**	$35.76	$44.36	**81%**
Police Protection	$7.48	$5.50	**136%**	$21.73	$16.50	**132%**	$29.21	$22.00	**133%**
Drug Control	$2.37	$5.63	**42%**	$4.19	$16.73	**25%**	$6.56	$22.36	**29%**
Prevention	$2.37	$5.41	**44%**	$2.37	$3.61	**66%**	$4.73	$9.03	**52%**
Supply Reduction	-	$0.22	-	$1.82	$13.12	**14%**	$1.82	$13.34	**14%**
Judicial	$3.29	$1.74	**188%**	$8.99	$4.30	**209%**	$12.27	$6.04	**203%**
Corrections	$15.68	$14.63	**107%**	$15.86	$28.01	**57%**	$31.55	$42.64	**74%**
State	$9.68	$6.36	**152%**	$12.81	$23.78	**54%**	$22.50	$30.14	**75%**
County	$6.00	$8.27	**73%**	$3.05	$4.23	**72%**	$9.05	$12.50	**72%**
Other	$9.72	$41.21	**24%**	$11.44	$226.27	**5%**	$21.16	$267.48	**8%**
Productivity Loss - Incarc.	$9.27	$38.30	**24%**	$9.05	$125.86	**7%**	$18.31	$164.16	**11%**
Property Destruction	$0.27	$0.08	**352%**	$1.35	$0.53	**253%**	$1.62	$0.61	**266%**
Productivity Loss for Victims	$0.18	$2.59	**7%**	$1.04	$5.28	**20%**	$1.22	$7.87	**16%**
Private Legal Defense	-	$0.24	-	-	$1.24	-	-	$1.48	-
Career Criminals	-	$0.00	-	-	$93.36	-	-	$93.36	-
MEDICAL CARE	**$76.30**	**$75.59**	**101%**	**$12.30**	**$31.56**	**39%**	**$88.60**	**$107.16**	**83%**
Hospital Care	$61.15	$42.96	**142%**	$12.30	$3.21	**384%**	$73.45	$46.17	**159%**
Inpatient	$46.68	$32.98	**142%**	$10.33	$3.21	**322%**	$57.01	$36.18	**158%**
Outpatient	$14.47	$9.98	**145%**	$1.97	$0.00	-	$16.44	$9.98	**165%**
Fetal Alcohol Syndrome	$1.66	$11.09	**15%**	$0.00	$0.00	-	$1.66	$11.09	**15%**
Other Costs	$13.48	$17.91	**75%**	$0.00	$0.00	-	$13.48	$17.91	**75%**
Prescription Drugs	$10.75	$3.56	**302%**	$0.00	$0.00	-	$10.75	$3.56	**302%**
Nursing Home	$2.73	$9.02	**30%**	$0.00	$0.00	-	$2.73	$9.02	**30%**
Other Health Professionals	-	$5.34	-	-	$0.00	-	-	$5.34	-
Other Special Disease Groups	-	$0.00	-	-	$26.84	-	-	$26.84	-
Health Insurance Admin.	-	$3.63	-	-	$1.51	-	-	$5.14	-
OTHER	**$75.65**	**$65.36**	**116%**	**$18.13**	**$0.72**	**2518%**	**$93.78**	**$66.08**	**142%**
Social Welfare	$36.28	$1.47	**2468%**	$18.13	$0.72	**2518%**	$54.41	$2.20	**2473%**
Child Welfare	$35.37	$0.42	**8445%**	$17.69	$0.21	**8573%**	$53.06	$0.63	**8487%**
Other Welfare (Admin.Only)	$0.90	$1.05	**86%**	$0.45	$0.52	**87%**	$1.35	$1.57	**86%**
Fire Protection/Destruc. from Fire	$6.65	$5.38	**124%**	$0.00	$0.00	**-**	$6.65	$5.38	**124%**
Motor Vehicle Crashes	$32.72	$58.50	**56%**	$0.00	$0.00	**-**	$32.72	$58.50	**56%**
TOTAL	**$338.78**	**$706.81**	**48%**	**$145.99**	**$483.44**	**30%**	**$484.77**	**$1,190.24**	**41%**

Shaded area shows categories not included in Maine's analysis.

Conclusions

The total estimated cost of substance abuse in Maine in 2000 was $618 million. The category comprising the smallest proportion of the total cost (3%) was substance abuse treatment at $19 million. At $140 million, the category showing the highest estimated cost was mortality, or loss of productivity due to premature death from drug- or alcohol-related causes (23% of total).

The results of this study can be placed in context by considering the amount of revenue collected by the state through specially designated alcohol revenues in relation to the total economic costs of alcohol abuse. In fiscal year 2000, approximately $37.4 million was transferred to the state's General Fund from the sales of alcohol and related operations (Maine Bureau of Alcoholic Beverages and Lottery Operations, 2001; Maine Department of Public Safety, 2001). In the same year, alcohol abuse cost an estimated $431.9 million; for every $1 the state collected in revenue from alcohol sales in 2000, society paid $11.55 in alcohol-related costs.

Although the goal of this report was to document the economic costs associated with drug and alcohol abuse, readers should keep in mind that substance abuse also has serious consequences that affect individuals and their families in ways that cannot be quantified through economic analysis. In 2000, it was estimated that 541 persons in Maine died of causes related to drug or alcohol abuse, resulting in a potential loss of 11,738 years of life, and thousands more suffered from substance-related illnesses, injuries, and domestic violence.

Clearly, the consumption of alcohol and other drugs creates costs that are not adequately born by the producer or the consumer of the products, but rather by society as a whole, including other businesses as lost productivity. While public policy addresses the costs of illegal drugs through regulation with high penalties for both possession and sale of these drugs, the cost of the misuse of legal drugs and alcohol continue to exceed the price paid by the industry or the consumer of the products. Nearly 50% of the adult population bears a cost for recreational use of alcohol and drugs in which they do not participate. It may be time to reconsider public policies that create an unfair burden on half the population of Maine.

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APPENDIX A.1

Calculation of the Labor Force Participation Rate

Employment Status of the Civilian Non-Institutionalized Population

	Age	Civilian Non-Institutionalized Population	Civilian Labor Force Partici-pation Rate	Civilian Labor Force
Total				
	16+	998,000	69.0%	689,000
	16-19	66,000	56.5%	37,000
	20+	932,000	70.0%	652,000
	20-24	73,000	81.7%	59,000
	25-34	159,000	86.7%	137,000
	35-44	210,000	86.5%	182,000
	45-54	203,000	85.5%	173,000
	55-64	125,000	61.6%	77,000
	65+	163,000	13.9%	23,000
Male				
	18	8,916		4,600
	19	8,487		4,379
	20-24	35,000		30,000
	18-24	**52,403**	**74.4%**	**38,979**
	25-34	76,000		72,000
	35-44	103,000		95,000
	25-44	**179,000**	**93.3%**	**167,000**
	45-54	105,000		92,000
	55-64	62,000		40,000
	45-64	**167,000**	**79.0%**	**132,000**
	65-69	24,153		6,939
	70+	52,014		6,281
	65+	**76,167**	**17.4%**	**13,220**
Female				
	18	8,681		4,713
	19	8,163		4,432
	20-24	38,000		27,000
	18-24	**54,844**	**65.9%**	**36,145**
	25-34	82,000	76.8%	63,000
	35-44	107,000	78.5%	84,000
	25-44	**189,000**	**77.8%**	**147,000**
	45-54	98,000	81.6%	80,000
	55-64	63,000	58.7%	37,000
	45-64	**161,000**	**72.7%**	**117,000**
	65-69	26,339	21.0%	5,530
	70+	81,136	6.1%	4,928
	65+	**107,475**	**9.7%**	**10,458**

Source: calculated using unpublished data from the U.S. Bureau of Labor Statistics, 2002

APPENDIX A.2

Calculation of Morbidity Costs

ALCOHOL

	A # Employed Persons with Alcohol Use Disorder [1]	B Employed Average Earnings [2]	C Employed House-Keeping [2]	D Impairment Rate (%) [3]	E # Unemployed Persons w/ Alcohol Use Disorder [1]	F Housekeeping Not in Labor Force [2]	**G Total Alcohol Morbidity Costs [4]**
Male							
18-24	8,450	$10,953	$3,004	1.40	2,907	$6,224	**$1,904,452**
25-44	18,611	$31,838	$3,778	4.25	1,337	$7,056	**$28,571,819**
45-64	5,301	$37,318	$4,091	7.40	1,409	$7,378	**$17,012,789**
65+	79	$19,923	$3,052	9.30	377	$5,800	**$371,988**
Subtotal	32,441	$100,032	$13,925		6,030	$26,459	**$47,861,047**
Female							
18-24	3,704	$9,772	$9,500	0.80	1,917	$15,728	**$812,232**
25-44	5,006	$15,655	$11,260	7.35	1,429	$17,452	**$11,735,521**
45-64	1,742	$19,338	$9,939	15.30	654	$16,203	**$9,424,672**
65+	0	$8,842	$4,718	18.70	0	$7,734	**$0**
Subtotal	10,452	$53,606	$35,417		3,999	$57,116	**$21,972,425**

DRUGS

	A # Employed Persons with Drug Use Disorder [1]	B Employed Average Earnings [2]	C Employed House-Keeping [2]	D Impairment Rate (%) [3]	E # Unemployed Persons w/ Drug Use Disorder [1]	F Housekeeping Not in Labor Force [2]	**G Total Drug Morbidity Costs [4]**
Male							
18-24	1908	$10,611	$3,004	1.10	657	$6,224	**$330,711**
25-44	7444	$30,843	$3,778	5.45	535	$7,056	**$14,251,219**
45-64	2835	$36,151	$4,091	7.80	754	$7,378	**$9,332,402**
65+	132	$19,301	$3,052	7.30	628	$5,800	**$481,214**
Subtotal	12319	$96,906	$13,925		2573	$26,459	**$24,395,546**
Female							
18-24	1019	$9,467	$9,500	0.20	528	$15,728	**$55,266**
25-44	2062	$15,165	$11,260	1.45	588	$17,452	**$938,842**
45-64	1277	$18,734	$9,939	4.55	480	$16,203	**$2,020,081**
65+	31	$8,566	$4,718	7.30	291	$7,734	**$194,449**
Subtotal	4390	$51,932	$35,417		1886	$57,116	**$3,208,638**

Notes and Sources:

[1] from Table 3.2

[2] from Table 3.3

[3] from Rice et al., 1990

[4] (Ax(B+C) + (ExF))xD/100

APPENDIX B.1

Formula for Calculating the Current Value of Lifetime Earnings

$$V = \sum_{n=a}^{85+} (X_n W_n P_a^n + H_n K_n P_a^n) / (1+i)^{n-a}$$

Where:

a	is the midyear age for the given cohort of persons
X_n	is the annual mean earnings for all persons with earnings in an age group where the midpoint is age n
i	is the discount rate
H_n	is the annual mean imputed value of housekeeping services for all persons in an age group where the midpoint is age n
K_n	is the average housekeeping participation rate in the age group with the midpoint age n
$W_n P_a^n$	is defined as the number of labor force years per person in an age group as determined as follows:

$$W_n P_a^n = \sum_{j=t}^{t+r-1} L_j W_j / L_a$$

Where:

j	is the specific single year of age under consideration
t	is the beginning year of the age group
r	is the number of years in this age group; in any age group j can go from t to t+r-1
L_j	is the number of individuals surviving to j out of a cohort of 100,000 live births
W_j	is the single year labor force participation rate
L_a	is the number of persons living out of a cohort of 100,000 live births
P_a^n	is the appropriate probability that an individual age a survives to age n
W_n	is the average labor force participation rate in the age group with the midyear n, resulting from the single year labor force participation rate W

APPENDIX B.2
Calculation of Mortality Costs Due to Substance Use Disorders

Years of Potential Life Lost for Alcohol- and Drug-Related Deaths
Maine Resident Data, 2000

MALES				
Age Group	Age Midpoint	Life Expectancy [1]	Alcohol Related Deaths [2]	YPLL [3]
1 - 18	9.5	66.1	9	595
19 - 24	21.5	54.5	11	600
25 - 34	29.5	47.0	15	705
35 - 44	39.5	37.6	38	1,429
45 - 54	49.5	28.5	50	1,425
55 - 64	59.5	20.0	45	900
65-100	82.5	5.9	153	903
Total			320	6,556

MALES				
Age Group	Age Midpoint	Life Expectancy [1]	Alcohol Related Deaths [2]	YPLL [3]
1 - 18	9.5	66.1	2	132
19 - 24	21.5	54.5	8	436
25 - 34	29.5	47.0	12	564
35 - 44	39.5	37.6	12	451
45 - 54	49.5	28.5	8	228
55 - 64	59.5	20.0	3	60
65-100	82.5	5.9	2	12
Total			47	1,883

FEMALES				
Age Group	Age Midpoint	Life Expectancy [1]	Alcohol Related Deaths [2]	YPLL [3]
1 - 18	9.5	70.9	4	284
19 - 24	21.5	59.1	2	118
25 - 34	29.5	51.3	5	257
35 - 44	39.5	41.6	9	374
45 - 54	49.5	32.2	11	354
55 - 64	59.5	23.3	12	280
65-100	82.5	7.3	111	810
Total			153	2,477

FEMALES				
Age Group	Age Midpoint	Life Expectancy [1]	Alcohol Related Deaths [2]	YPLL [3]
1 - 18	9.5	70.9	0	0
19 - 24	21.5	59.1	0	0
25 - 34	29.5	51.3	3	154
35 - 44	39.5	41.6	13	541
45 - 54	49.5	32.2	3	97
55 - 64	59.5	23.3	1	23
65-100	82.5	7.3	1	7
Total			21	822

Notes and Sources:
[1] from Life Expectancy Tables for Maine (ODRVS, 2003b)
[2] from Table 4.1
[3] = [1] x [2]
Components may not sum to totals due to rounding.

(continued on next page)

APPENDIX B.2 (cont.)

Calculation of Mortality Costs Due to Substance Use Disorders

Years of Potential Life Lost (YPLL) and Mortality Costs

Age	Alcohol Use						Drug Use					
	A	B	C	D	E	F	G	H	I	J	K	L
	Washington State [1]			Maine			Washington State [1]			Maine		
	Costs	YPLL	Cost/ YPLL (A/B)	YPLL	Cost (CxD)	Adj. Cost [2]	Costs	YPLL	Cost/ YPLL (G/H)	YPLL	Cost (IxJ)	Adj. Cost [2]
Male												
1-18	$34,906,569	3,511	$9,942	595	$5,914,531	$5,325,485	$3,638,768	366	$9,942	132	$1,314,331	$1,183,433
19-24	$74,180,500	4,799	$15,457	600	$9,266,766	$8,343,861	$20,635,997	1,322	$15,610	436	$6,805,820	$6,128,009
25-34	$117,064,011	6,330	$18,494	705	$13,037,935	$11,739,448	$68,530,400	3,625	$18,905	564	$10,662,385	$9,600,487
35-44	$138,352,542	7,019	$19,711	1,429	$28,163,287	$25,358,422	$113,737,542	5,886	$19,323	451	$8,718,719	$7,850,396
45-54	$102,233,719	6,152	$16,618	1,425	$23,680,600	$21,322,179	$28,874,787	1,779	$16,231	228	$3,700,647	$3,332,089
55-64	$39,463,881	3,947	$9,998	900	$8,998,605	$8,102,407	$1,806,813	196	$9,218	60	$553,106	$498,021
65+	$24,733,625	4,075	$6,070	903	$5,479,029	$4,933,356	$1,114,756	184	$6,058	12	$71,490	$64,370
Total	$530,934,847	35,833	$14,817	**6,556**	$97,138,274	**$87,463,986**	$238,339,063	13,358	$17,842	**1,883**	$33,600,848	**$30,254,440**
Female											$0	
1-18	$10,589,242	2,085	$5,079	284	$1,440,340	$1,296,892	$560,188	103	$5,439	0	$0	$0
19-24	$8,080,496	1,105	$7,313	118	$864,357	$778,273	$2,389,764	319	$7,491	0	$0	$0
25-34	$18,252,984	2,181	$8,369	257	$2,146,671	$1,932,878	$7,855,451	947	$8,295	154	$1,276,614	$1,149,473
35-44	$29,073,458	3,303	$8,802	374	$3,295,520	$2,967,309	$20,709,613	2,379	$8,705	541	$4,707,759	$4,238,899
45-54	$23,263,601	2,861	$8,131	354	$2,880,100	$2,593,263	$6,495,319	832	$7,807	97	$754,144	$679,037
55-64	$11,311,195	1,838	$6,154	280	$1,720,680	$1,549,313	$794,895	149	$5,335	23	$124,302	$111,923
65+	$19,384,774	2,640	$7,343	810	$5,949,804	$5,357,245	$846,841	231	$3,666	7	$26,762	$24,096
Total	$119,955,750	16,013	$7,491	**2,477**	$18,554,075	**$16,706,220**	$39,652,071	4,960	$7,994	**822**	$6,570,572	**$5,916,189**
Total												
1-18				879		$6,622,378				132		$1,183,433
19-24				718		$9,122,135				436		$6,128,009
25-34				962		$13,672,327				718		$10,749,959
35-44				1,803		$28,325,732				992		$12,089,295
45-54				1,779		$23,915,442				325		$4,011,125
55-64				1,180		$9,651,720				83		$609,943
65+				1,713		$10,290,602				19		$88,466
Total				**9,033**		**$104,170,206**				**2705**		**$36,170,629**

Notes and Sources:

[1] Wickizer, 1999

[2] Adjusted for inflation assuming 3% increase per year since 1996 (Harwood, 2000) and for Maine-Washington wage difference (80% lower in Maine)

Components may not sum to totals because of rounding.

APPENDIX C.1

Total Hospital Inpatient Charges
For Specific Diagnosis or Condition*
Maine, 2000

Diagnosis or Condition	Hospital Discharges		Hospital Inpatient Charges		
	Males	Females	Males	Females	Total
Alcoholic psychoses	852	306	$5,135,779	$1,738,499	$6,874,278
Alcohol dependence syndrome	972	496	$3,916,319	$1,928,848	$5,845,167
Non-dependent abuse of alcohol	86	51	$425,324	$204,356	$629,680
Alcoholic polyneuropathy	2	0	$66,642	$0	$66,642
Alcoholic cardiomyopathy	7	2	$62,716	$11,144	$73,860
Alcoholic gastritis	23	4	$240,150	$34,796	$274,946
Alcoholic fatty liver	0	0	$0	$0	$0
Acute alcoholic hepatitis	34	12	$413,814	$108,536	$522,350
Alcoholic cirrhosis of the liver	121	29	$1,416,840	$358,033	$1,774,873
Alcoholic liver damage, unspecified	6	3	$57,812	$33,189	$91,001
Cancer of the lip, tongue oral cavity, pharynx	51	20	$650,199	$187,193	$837,392
Cancer of the esophagus	49	15	$2,186,381	$183,189	$2,369,570
Cancer of the stomach	80	40	$2,233,847	$756,225	$2,990,072
Cancer of the liver and intrahepatic bile ducts	29	13	$426,346	$126,548	$552,894
Cancer of the larynx	27	7	$527,202	$119,402	$646,604
Essential hypertension	66	141	$298,708	$738,683	$1,037,391
Cerebrovascular disease	1,972	2,037	$25,065,652	$26,456,362	$51,522,014
Respiratory tuberculosis	6	1	$59,411	$9,642	$69,053
Diabetes mellitus	750	687	$10,364,598	$7,647,724	$18,012,322
Pneumonia and influenza	2,294	2,458	$24,521,108	$26,475,828	$50,996,936
Diseases of the esophagus, stomach, duodenum	1,075	1,119	$925,263	$11,009,468	$11,934,731
Chronic hepatitis	0	2	$0	$8,309	$8,309
Cirrhosis without mention of alcohol	44	38	$575,552	$417,409	$992,961
Other chronic nonalcoholic liver damage & disease	4	2	$33,921	$15,008	$48,929
Portal hypertension	24	7	$403,861	$76,783	$480,644
Acute pancreatitis	398	342	$4,848,437	$4,464,076	$9,312,513
Chronic pancreatitis	51	39	$446,171	$418,775	$864,946
Injuries and poisonings	3,890	4,939	$60,891,848	$62,769,810	$123,661,658
Subtotal	**12,913**	**12,810**	**$146,193,901**	**$146,297,835**	**$292,491,736**

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APPENDIX C.1 (continued)

Diagnosis or Condition	Hospital Discharges		Hospital Inpatient Charges		
	Males	Females	Males	Females	Total
Drug psychoses	309	284	$2,017,429	$1,959,240	$3,976,669
Drug dependence	362	330	$1,253,300	$1,408,122	$2,661,422
Non-dependent abuse of drugs	47	33	$355,222	$270,310	$625,532
Polyneuropathy due to drugs	0	2	$0	$25,011	$25,011
Drug dependence complicating pregnancy, childbirth, or puerperium	0	11		$35,786	$35,786
Suspected damage to fetus from drugs	0	1	$0	$3,241	$3,241
Drug withdrawal syndrome in newborn	0	0	$0	$0	$0
Poisoning by opiates and related narcotics	42	34	$255,781	$255,775	$511,556
Poisoning by sedatives and hypnotics	16	38	$88,116	$157,308	$245,424
Poisoning by central nervous system muscle tone depressants	0	8	$0	$27,094	$27,094
Poisoning by psychotropic agents	142	304	$747,737	$1,988,815	$2,736,552
Poisoning by central nervous system stimulants	0	2		$8,628	$8,628
Subtotal	**918**	**1,047**	**$4,717,585**	**$6,139,330**	**$10,856,915**
Total	**13,831**	**13,857**	**$150,911,486**	**$152,437,165**	**$303,348,651**

* Values represent the total number of hospital discharges and associated charges before the alcohol- or drug-related fraction was applied (Maine Health Data Organization, 2003).

APPENDIX C.2

ICD-9 Codes and Alcohol Attributable Fractions for Alcohol-Related Injuries and Associated Hospital Inpatient Charges, Maine, 2000

		Total Discharges [1]		Total Charges [1]		AFF	Alcohol-Related Discharges		Alcohol-Related Charges		
		Males	Females	Males	Females	[2]	Males	Females	Males	Females	Total
800-968	Injuries/poisonings	3184	3948	$52,535,595	$52,887,059	0.10	318	395	$5,253,560	$5,288,706	$10,542,266
980-995	Injuries/poisonings	85	90	$536,838	$434,464	0.10	9	9	$53,684	$43,446	$97,130
E810-E825	Motor vehicle traffic/nontraffic accidents [3]	52	43	$1,145,073	$377,186	0.22	11	9	$251,916	$82,981	$334,897
E826-E829	Pedal cycle/other road vehicle accidents	2	0	$14,589	$0	0.20	0	0	$0	$0	$0
E830-E838	Water transport accidents	0	0	$0	$0	0.20	0	0	$0	$0	$0
E840-E945	Air/space transport accidents	0	0	$0	$0	0.16	0	0	$0	$0	$0
E880-E888	Accidental falls	391	628	$4,823,720	$6,684,744	0.35	137	220	$1,688,302	$2,339,660	$4,027,962
E890-E899	Accidents caused by fire/flames	2	5	$14,937	$38,022	0.45	1	2	$6,722	$17,110	$23,832
E910	Accidental drowning/submersions	0	0	$0	$0	0.38	0	0	$0	$0	$0
E950-E959	Suicide/self inflicted injury	91	160	$867,164	$1,450,157	0.28	25	45	$242,806	$406,044	$648,850
E960-E969	Homicide	9	14	$121,066	$131,893	0.46	4	6	$55,690	$60,671	$116,361
E901,E911 E917,E918 E919,E920 E922,E980	Other injuries/adverse effects	74	51	$832,866	$766,285	0.25	19	13	$208,217	$191,571	$399,788
Total		**3,890**	**4,939**	**$60,891,848**	**$62,769,810**		**525**	**699**	**$7,760,897**	**$8,430,189**	**$16,191,086**

Notes and Source:

[1] Maine Health Data Organization

[2] NIDA/NIAAA, 1998

[3] AFF is the proportion of fatal crashes in Maine involving a driver with a BAC $\geq$0.10 g/dl (U.S. Department of Transportation, 2000).

APPENDIX C.3

Total Hospital Outpatient Charges
For Specific Diagnosis or Condition*
Maine, 2000

Diagnosis or Condition	Hospital Discharges		Hospital Outpatient Charges		
	Females	Males	Females	Males	Total
Alcoholic psychoses	71	282	$27,480	$115,420	$142,899
Alcohol dependence syndrome	1,993	4,628	$1,065,626	$2,269,850	$3,335,476
Non-dependent abuse of alcohol	1,135	2,579	$565,097	$1,014,936	$1,580,033
Alcoholic polyneuropathy	3	11	$1,588	$1,165	$2,753
Alcoholic cardiomyopathy	0	1	$0	$2,988	$2,988
Alcoholic gastritis	27	49	$16,517	$31,956	$48,473
Alcoholic fatty liver	1	1	$23	$262	$285
Acute Alcoholic hepatitis	17	44	$2,426	$11,014	$13,440
Alcoholic cirrhosis of the liver	36	115	$20,028	$63,266	$83,294
Alcoholic liver damage, unspecified	7	15	$1,387	$5,725	$7,112
Excessive blood levels of alcohol	1	2	$140	$710	$850
Cancer of the lip, tongue, oral cavity or pharynx	384	858	$445,685	$1,202,800	$1,648,485
Cancer of the esophagus	198	818	$303,564	$910,977	$1,214,541
Cancer of the stomach	227	487	$200,208	$464,650	$664,858
Cancer of the liver and Intrahepatic bile ducts	158	172	$235,633	$205,541	$441,174
Cancer of the larynx	21	99	$27,867	$169,633	$197,500
Essential hypertension	27,989	19,087	$4,267,191	$3,081,676	$7,348,867
Cerebrovascular disease	7,393	7,515	$3,505,490	$3,610,372	$7,115,862
Respiratory tuberculosis	41	33	$8,097	$7,200	$15,297
Diabetes mellitus	39,975	35,845	$5,699,813	$5,499,225	$11,199,038
Pneumonia and influenza	4,485	3,990	$1,346,924	$1,299,730	$2,646,654
Diseases of the esophagus, stomach, duodenum	9,280	7,485	$6,169,806	$5,456,313	$11,626,119
Chronic hepatitis	116	58	$36,510	$40,053	$76,563
Cirrhosis without mention of alcohol	377	570	$117,818	$174,807	$292,625
Other chronic non-alcoholic liver damage & disease	136	120	$84,511	$79,386	$163,897
Portal hypertension	19	33	$19,543	$28,826	$48,369
Acute pancreatitis	375	352	$192,871	$199,276	$392,147
Chronic pancreatitis	160	142	$126,342	$89,852	$216,194
Injuries and poisonings	89,549	101,054	$32,777,404	$40,965,706	$73,743,110
Subtotal	**184,174**	**186,445**	**$57,265,589**	**$67,003,315**	**$124,268,905**

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APPENDIX C.3 (continued)

Diagnosis or Condition	Hospital Discharges		Hospital Inpatient Charges		
	Females	Males	Females	Males	Total
Drug psychoses	277	328	140,092	141,192	281,283
Drug dependence	931	1,336	433,683	675,462	1,109,145
Nondependent abuse of drugs	610	1,197	275,338	422,234	697,571
Polyneuropathy due to drugs	1	0	150		150
Drug dependence complicating pregnancy, childbirth, or puerperium	0	0	0	0	0
Narcotics affecting fetus or newborn via placenta or breast	0	0	0	0	0
Drug withdrawal syndrome in newborn	0	0	0	0	0
Poisoning by opiates and related narcotics	30	33	18,881	29,545	48,426
Poisoning by sedatives and hypnotics	4	1	2,028	1,286	3,314
Poisoning by central nervous system muscle tone depressants	10	7	7,331	8,591	15,923
Poisoning by psychotropic agents	245	145	221,401	134,540	355,940
Poisoning by central nervous system stimulants	1	0	85		85
Subtotal	**2,109**	**3,047**	**$1,098,988**	**$1,412,850**	**$2,511,838**
Total	**186,283**	**189,492**	**$58,364,577**	**$68,416,166**	**$126,780,742**

* Values represent the total number of outpatient cases and associated charges before the alcohol- or drug-related fraction was applied (Maine Health Data Organization, 2003).

APPENDIX C.4

ICD-9 Codes and Alcohol Attributable Fractions for Alcohol-Related Injuries And Associated Hospital Outpatient Charges, Maine, 2000

		Total Outpatient Visits [1]		Total Charges [1]		AFF	Alcohol-Related Visits		Alcohol-Related Charges		
		Males	Females	Males	Females	[2]	Males	Females	Males	Females	Total
800-968	Injuries/poisonings	96,904	84,204	$39,486,947	$31,120,526	0.1	9,690	8,420	$3,948,695	$3,112,053	$7,060,747
980-9905	Injuries/poisonings	2,445	3,021	$689,765	$669,084	0.1	245	302	$68,977	$66,908	$135,885
E810-E825	Motor vehicle traffic/nontraffic accidents [3]	596	813	$257,982	$346,154	0.22	131	179	$56,756	$76,154	$132,910
E826-E829	Pedal cycle/other road vehicle accidents	27	10	$7,948	$7,247	0.2	5	2	$1,590	$1,449	$3,039
E830-E838	Water transport accidents	11	4	$17,449	$675	0.2	2	1	$3,490	$135	$3,625
E840-E845	Air/space transport accidents	3	2	$1,030	$879	0.16	0	0	$165		$165
E880-E888	Accidental falls	903	1,339	$430,818	$535,545	0.35	316	469	$150,786	$187,441	$338,227
E890-E899	Accidents caused by fire/flames	19	6	$4,687	$2,219	0.45	9	3	$2,109	$999	$3,108
E910	Accidental drowning/submersions	-	-	$0	$0	0.38	0	0	$0	$0	$0
E950-E959	Suicide/self inflicted injury	32	68	$23,905	$54,926	0.28	9	19	$6,693		$6,693
E960-E969	Homicide	72	65	$29,120	$33,695	0.46	33	30	$13,395	$15,500	$28,895
E901,E911 E917,E918 E919,E920 E922,E980	Other injuries/adverse effects	42	17	$16,055	$6,454	0.25	11	4	$4,014	$1,614	$5,627
Total		**101,054**	**89,549**	**$40,965,706**	**$32,777,404**		**10,451**	**9,429**	**$4,256,669**	**$3,462,252**	**$7,718,921**

Source:

[1] Maine Health Data Organization

[2] NIDA/NIAAA, 1998

[3] AFF is the proportion of fatal crashes in Maine involving a driver with a BAC $\geq$0.10 g/dl (U.S. Department of Transportation, 2000).

APPENDIX D

Calculation of Estimated Non-Medical Costs of Alcohol-Related Motor Vehicle Crashes, Maine, 2000

Type of Costs	Type/Severity of Crash								
	Fatal			Severe/Critical Injury			Minimum/Moderate Injury		
	U.S. 1992 (mill.) [1]	U.S. 2000 Est. [2]	Maine [4]	U.S. 1992 (mill.) [1]	U.S. 2000 Est. [2]	Maine [4]	U.S. 1992 (mill.) [1]	U.S. 2000 Est. [2]	Maine [4]
Legal/Court Costs	$3,390	$4,160,784,034	**$18,849,561**	$3,354	$4,116,598,717	**$18,649,388**	$2,768	$3,397,359,943	**$15,391,028**
per capita cost [3]		*$14.78*			*$14.63*			*$12.07*	
Insurance Admin.	$2,310	$2,835,224,519	**$12,844,391**	$3,795	$4,657,868,852	**$21,101,499**	$3,132	$3,844,122,594	**$17,414,992**
per capita cost [3]		*$10.07*			*$16.55*			*$13.66*	
Vehicle/Roadway Dam.	$385	$472,537,420	**$2,140,732**	$1,243	$1,525,620,813	**$6,911,506**	$16,062	$19,714,015,681	**$89,310,219**
per capita cost [3]		*$1.68*			*$5.42*			*$70.05*	
Total			**$33,834,683**			**$46,662,393**			**$122,116,239**

Type of Costs	Property Damage Only		
	U.S. 1992 (mill.) [1]	U.S. 2000 Est. [2]	Maine [4]
Insurance Admin.	$3,403	$4,176,739,843	**$18,921,845**
per capita cost [3]		*$14.84*	
Vehicle/Roadway Dam.	$31,342	$38,468,228,083	**$174,272,250**
per capita cost [3]		*$136.69*	
Total			**$193,194,095**

Proportion of Costs due to Alcohol:				
	Fatalities	Severe/Critical Injury	Min/Mod Injury	Property Damage
U.S. 1992 [1]	39.7%	31.5%	17.0%	13.9%
Maine, 2000 [5]	**22%**	**17.3%**	**9.4%**	**7.6%**
	actual	est.	est.	est.

Notes and Sources:

[1] NIDA/NIAAA (1998), Table 6.17 (p.6-28)

[2] 1992 U.S. data adjusted for inflation using the Consumer Price Index rate of 22.7% over the 8-year period

[3] 2000 U.S. estimate divided by the 2000 U.S. population: 281,421,906

[4] 2000 U.S. per capita cost multiplied by the 2000 Maine population: 1,274,923

[5] The proportion of fatalities due to alcohol is the percent of fatal crashes in Maine involving a driver with a BAC $\geq$ 0.10 g/dl (U.S. DOT, 2000); the proportion of less serious crashes due to alcohol is estimatred using the same Maine to US proportion as for fatalities, 55% .

APPENDIX E

Summary: Estimated Cost of Alcohol and Drug Abuse by Category
Maine, 2000

	ALCOHOL	DRUGS	TOTAL
TREATMENT	**$15,059,926**	**$4,247,672**	**$19,307,598**
MORBIDITY	**$69,833,473**	**$27,604,183**	**$97,437,656**
MORTALITY	**$104,170,206**	**$36,170,629**	**$140,340,836** *
CRIME	**$49,131,854**	**$79,305,035**	**$128,436,889**
Law Enforcement	$12,554,058	$33,040,616	$45,594,673
Police Protection	$9,535,877	$27,700,062	$37,235,939
Drug Control	$3,018,181	$5,340,554	$8,358,734
Prevention	$3,018,181	$3,018,181	$6,036,361 *
Supply Reduction	$0	$2,322,373	$2,322,373
Judicial	$4,188,425	$11,455,612	$15,644,037
Corrections	$19,993,818	$20,226,175	$40,219,993
State	$12,347,413	$16,332,034	$28,679,447
County	$7,646,405	$3,894,141	$11,540,546
Other	$12,395,553	$14,582,632	$26,978,186
Productivity Loss Due to Incarceration	$11,813,175	$11,536,470	$23,349,645
Property Destruction Due to Crime	$347,336	$1,722,345	$2,069,681
Productivity Loss for Victims	$235,042	$1,323,817	$1,558,860 *
MEDICAL CARE	**$97,276,525**	**$15,681,276**	**$112,957,801**
Hospital Care	$77,966,074	$15,681,276	$93,647,350
Inpatient	$59,513,160	$13,169,438	$72,682,598
Outpatient	$18,452,914	$2,511,838	$20,964,752
Fetal Alcohol Syndrome	$2,120,469	$0	$2,120,469
Other Costs	$17,189,982	$0	$17,189,982
Prescription Drugs	$13,709,872	$0	$13,709,872
Nursing Home	$3,480,110	$0	$3,480,110
OTHER	**$96,448,041**	**$23,117,805**	**$119,565,846**
Social Welfare	$46,252,817	$23,117,805	$69,370,622
Child Welfare	$45,100,000	$22,550,000	$67,650,000
Other Welfare (Administration Only)	$1,152,817	$567,805	$1,720,622
Fire Protection and Destruction Due to Fire	$8,479,777	$0	$8,479,777
Motor Vehicle Crashes (Non-Medical Costs)	$41,715,447	$0	$41,715,447
TOTAL	**$431,920,025**	**$186,126,600**	**$618,046,626**

* Apparent errors in totals are due to rounding.

APPENDIX F
Estimated Total and Per Capita Costs of Substance Abuse
United States, 2000

Cost Category	Ave Chng Per Year (1992-98) [1]	Alcohol			Drugs			Total		
		1992 Total (millions) [2]	2000 Est. Total [3]	2000 Per Capita [4]	1992 Total (millions) [2]	2000 Est. Total [3]	2000 Per Capita [4]	1992 Total (millions) [2]	2000 Est. Total [3]	2000 Per Capita [4]
TREATMENT	**105.2%**	**$4,485.0**	**$6,721,232,940**	**$23.88**	**$3,674.0**	**$5,481,447,807**	**$19.48**	**$8,159.0**	**$12,202,680,748**	**$43.36**
Treatment	105.3%	$4,046.0	$6,115,793,991	$21.73	$3,130.0	$4,731,199,998	$16.81	$7,176.0	$10,846,993,990	$38.54
Support for Specialty Serv.	104.1%	$439.0	$605,438,949	$2.15	$544.0	$750,247,809	$2.67	$983.0	$1,355,686,758	$4.82
MORBIDITY	**104.0%**	**$69,209.0**	**$94,717,295,409**	**$336.57**	**$15,682.0**	**$21,461,899,848**	**$76.26**	**$84,891.0**	**$116,179,195,258**	**$412.83**
In Labor Force/Housek'ping)	104.0%	$66,706.0	$91,291,767,076	$324.39	$14,205.0	$19,440,523,361	$69.08	$80,911.0	$110,732,290,437	$393.47
Institutionalized	104.0%	$1,011.0	$1,383,623,310	$4.92	$1,222.0	$1,672,391,380	$5.94	$2,233.0	$3,056,014,690	$10.86
Hospitalized	104.0%	$502.0	$687,021,663	$2.44	$255.0	$348,985,108	$1.24	$757.0	$1,036,006,771	$3.68
FAS (Lost Earnings)	104.0%	$990.0	$1,354,883,360	$4.81	$0.0	$0	$0.00	$990.0	$1,354,883,360	$4.81
MORTALITY	**102.6%**	**$31,326.6**	**$38,467,339,280**	**$136.69**	**$14,574.9**	**$17,897,174,391**	**$63.60**	**$45,901.5**	**$56,364,513,672**	**$200.28**
CRIME	**104.4%**	**$13,861.0**	**$19,337,565,761**	**$68.71**	**$57,860.0**	**$82,122,672,969**	**$291.81**	**$71,721.0**	**$101,460,238,730**	**$360.53**
Law Enforcement	100.8%	$2,697.0	$3,132,713,666	$11.13	$9,061.0	$9,351,742,759	$33.23	$11,758.0	$12,484,456,425	$44.36
Police Protection	100.0%	$1,547.0	$1,547,000,000	$5.50	$4,644.0	$4,644,000,000	$16.50	$6,191.0	$6,191,000,000	$22.00
Drug Control	101.5%	$1,150.0	$1,585,713,666	$5.63	$4,417.0	$4,707,742,759	$16.73	$5,567.0	$6,293,456,425	$22.36
Prevention	104.3%	$1,088.0	$1,523,713,666	$5.41	$726.0	$1,016,742,759	$3.61	$1,814.0	$2,540,456,425	$9.03
Supply Reduction	100.0%	$62.0	$62,000,000	$0.22	$3,691.0	$3,691,000,000	$13.12	$3,753.0	$3,753,000,000	$13.34
Judicial	100.0%	$491.0	$491,000,000	$1.74	$1,210.0	$1,210,000,000	$4.30	$1,701.0	$1,701,000,000	$6.04
Corrections	100.0%	$4,116.0	$4,116,000,000	$14.63	$7,884.0	$7,884,000,000	$28.01	$12,000.0	$12,000,000,000	$42.64
State	100.0%	$1,790.0	$1,790,000,000	$6.36	$6,693.0	$6,693,000,000	$23.78	$8,483.0	$8,483,000,000	$30.14
County	100.0%	$2,326.0	$2,326,000,000	$8.27	$1,191.0	$1,191,000,000	$4.23	$3,517.0	$3,517,000,000	$12.50
Other	106.3%	$6,557.0	$11,597,852,094	$41.21	$39,705.0	$63,676,930,210	$226.27	$46,262.0	$75,274,782,305	$267.48
Product. Loss - Incarc.	108.9%	$5,449.0	$10,778,041,363	$38.30	$17,907.0	$35,419,781,003	$125.86	$23,356.0	$46,197,822,365	$164.16
Property Destruction	96.9%	$28.0	$21,764,478	$0.08	$193.0	$150,019,435	$0.53	$221.0	$171,783,913	$0.61
Product. Loss - Victims	96.0%	$1,012.0	$730,046,254	$2.59	$2,059.0	$1,485,341,143	$5.28	$3,071.0	$2,215,387,397	$7.87
Private Legal Defense	100.0%	$68.0	$68,000,000	$0.24	$348.0	$348,000,000	$1.24	$416.0	$416,000,000	$1.48
Career Criminals	104.0%	$0.0	$0	$0.00	$19,198.0	$26,273,788,630	$93.36	$19,198.0	$26,273,788,630	$93.36

(continued on next page)

APPENDIX F (continued)

Cost Category	Ave Chng Per Year (1992-98) [1]	Alcohol			Drugs			Total		
		1992 Total (millions) [2]	2000 Est. Total [3]	2000 Per Capita [4]	1992 Total (millions) [2]	2000 Est. Total [3]	2000 Per Capita [4]	1992 Total (millions) [2]	2000 Est. Total [3]	2000 Per Capita [4]
MEDICAL CARE	**106.1%**	**$13,247.0**	**$21,273,581,309**	**$75.59**	**$5,531.0**	**$8,882,326,430**	**$31.56**	**$18,778.0**	**$30,155,907,739**	**$107.16**
Hospital Care	106.1%	$7,528.0	$12,089,342,500	$42.96	$562.0	$902,525,304	$3.21	$8,090.0	$12,991,867,803	$46.17
Inpatient	106.1%	$5,779.0	$9,280,593,824	$32.98	$562.0	$902,525,304	$3.21	$6,341.0	$10,183,119,127	$36.18
Outpatient	106.1%	$1,749.0	$2,808,748,676	$9.98	$0.0	$0	$0.00	$1,749.0	$2,808,748,676	$9.98
Fetal Alcohol Syndrome	106.1%	$1,944.0	$3,121,902,473	$11.09	$0.0	$0	$0.00	$1,944.0	$3,121,902,473	$11.09
Other Health Providers	106.1%	$3,139.0	$5,040,973,181	$17.91	$0.0	$0	$0.00	$3,139.0	$5,040,973,181	$17.91
Nursing Home	106.1%	$623.0	$1,000,486,235	$3.56	$0.0	$0	$0.00	$623.0	$1,000,486,235	$3.56
Prescription Drugs	106.1%	$1,581.0	$2,538,954,635	$9.02	$0.0	$0	$0.00	$1,581.0	$2,538,954,635	$9.02
Other Health Prof.	106.1%	$935.0	$1,501,532,311	$5.34	$0.0	$0	$0.00	$935.0	$1,501,532,311	$5.34
Other Disease Groups	106.1%	$0.0	$0	$0.00	$4,704.0	$7,554,233,145	$26.84	$4,704.0	$7,554,233,145	$26.84
Health Insurance Admin.	106.1%	$636.0	$1,021,363,155	$3.63	$265.0	$425,567,981	$1.51	$901.0	$1,446,931,136	$5.14
OTHER	**101.7%**	**$15,892.5**	**$18,393,543,795**	**$65.36**	**$336.6**	**$203,870,762**	**$0.72**	**$16,229.1**	**$18,597,414,557**	**$66.08**
Social Welfare	93.9%	$683.5	$413,919,426	$1.47	$336.6	$203,870,762	$0.72	$1,020.1	$617,790,189	$2.20
Child Welfare	94.4%	$186.9	$117,884,026	$0.42	$92.1	$58,062,282	$0.21	$279.0	$175,946,308	$0.63
Other Welfare (Admin.)	93.7%	$496.6	$296,035,400	$1.05	$244.6	$145,808,481	$0.52	$741.1	$441,843,881	$1.57
OASDI	96.5%	$9.4	$7,053,771	$0.03	$4.6	$3,474,245	$0.01	$14.0	$10,528,016	$0.04
SSI	0.0%	$31.0	$0	$0.00	$15.2	$0	$0.00	$46.2	$0	$0.00
TANF	94.4%	$79.7	$50,238,031	$0.18	$39.2	$24,744,105	$0.09	$118.9	$74,982,136	$0.27
Food Stamp Program	94.4%	$33.4	$21,083,917	$0.07	$16.5	$10,384,616	$0.04	$49.9	$31,468,533	$0.11
Veterans' Comp/Pens.	96.5%	$10.5	$7,859,916	$0.03	$5.1	$3,871,302	$0.01	$15.6	$11,731,218	$0.04
Other	94.4%	$332.7	$209,799,765	$0.75	$163.9	$103,334,213	$0.37	$496.5	$313,133,977	$1.11
Fire Protect./Fire Destruct.	99.4%	$1,590.0	$1,515,263,631	$5.38	$0.0	$0	$0.00	$1,590.0	$1,515,263,631	$5.38
Motor Veh. Crashes	102.4%	$13,619.0	$16,464,360,737	$58.50	$0.0	$0	$0.00	$13,619.0	$16,464,360,737	$58.50
TOTAL		**$148,021.1**	**$198,910,558,494**	**$706.81**	**$97,658.5**	**$136,049,392,209**	**$483.44**	**$245,679.6**	**$334,959,950,703**	**$1,190.24**

Notes and Sources:

[1] Harwood (2000), Table 3

[2] NIDA/NIAAA (1998): Treatment (Table 4.1), Morbidity (Tables 5.1, 5.12, Sect. 5.4), Mortality (Tables 5.5, 5.6), Crime (Table 6.2), Medical Care (Table 4.1), Other (Tables D.3, 6.17, Sect. 6.5)

[3] = [2] x [1] [8]

[4] = [3]/281,421,906 (population of the U.S. in 2000)

Shaded areas indicate categories not included in Maine's analysis.