

ALASKA LEGISLATURE SPECIAL COMMITTEE / SUBJECT FILE 8672
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TABLE III-10

PERSON-YEARS LOST DUE TO EXCESS DEATHS--FEMALES

Age Group at Death	20-24	25-34	35-44	45-54	55-64
20-24	8.98	35.67	35.10	33.95	31.84
25-34		22.93	45.26	44.16	40.85
35-44			85.31	166.50	154.11
45-54				67.90	128.06
55-64					38.88

TABLE III-11

UNDISCOUNTED COST OF LOST PRODUCTION DUE TO EXCESS MORTALITY
ATTRIBUTABLE TO ALCOHOL ABUSE AND ALCOHOLISM--
FEMALES (dollars)

Age at Death	20-24	25-34	35-44	45-54	55-64
20-24	\$67,332	\$267,561	\$263,237	\$ 254,588	\$ 248,377
25-34		171,975	339,450	331,200	306,375
35-44			639,825	1,248,750	1,155,825
45-54				509,250	960,450
55-64					291,600

TABLE III-12

THE PRESENT VALUE OF COSTS OF LOST PRODUCTION DUE TO EXCESS MORTALITY
DUE TO ALCOHOLISM AND ALCOHOL ABUSE--FEMALES,
(millions of dollars)

Age at Death	20-24	25-34	35-44	45-54	55-64	Total
20-24	\$58,781	\$166,691	\$ 83,340	\$ 40,989	\$ 19,870	\$ 369,670
25-34		126,918	127,294	63,259	29,718	347,189
35-44			472,191	468,281	220,760	1,161,234
45-54				375,827	360,169	735,996
55-64					215,201	215,201
Total Present Day Value						\$2,829,290

RESULTS

A brief summary of the estimated costs of lost production attributed to alcoholism and alcohol abuse is presented in Table III-13, below.

TABLE III-13

SUMMARY
ESTIMATED COSTS OF LOST PRODUCTION ATTRIBUTABLE TO ALCOHOLISM
AND ALCOHOL ABUSE--MALES AND FEMALES--1974
(millions of dollars)

Category	Amount
Diminished Productivity	\$ 57.48
Occupational Injuries	4.30
Excess Mortality	24.59
TOTAL	\$ 86.37

The total costs estimated for males and females for production lost due to alcoholism and alcohol abuse amounts to about \$86.4 million. It should be noted that insurance payments for alcohol-related highway fatalities and for occupational deaths, a sum of more than \$16.3 million, were not included in these figures. This would be double counting since such payments intend to compensate for lost earning capacity. The total estimated cost presented here represents the aggregate social cost--the costs to society in terms of services lost. It does not refer to human cost or the aggregate economic consequence for alcoholics and/or related families.

PART IV. ECONOMIC COSTS OF ALCOHOL-RELATED MOTOR VEHICLE
ACCIDENTS

STATEMENT OF PROBLEM

Alcohol abuse is often associated with motor vehicle accidents. However, traffic accidents would still occur even without alcohol abuse. In addition, alcoholics and alcohol abusers, as drivers, would still be involved in some accidents in the absence of the effects of alcohol. If alcohol abusers as a group had no higher accident rate than non-abusers, then there would be no excess social costs of alcohol-related motor vehicle accidents.

The major economic costs involve the value of lost production of persons killed or disabled and the value of the foregone output of resources utilized because of the accident. The objective of this section is to estimate the dollar value of excess motor vehicle accidents associated with alcohol abuse.

METHODOLOGY

In somewhat oversimplified terms, the number of accidents, by type, that would have occurred in a population with no alcoholics or alcohol abusers needs to be determined. The difference between the actual number of accidents and this hypothetical number would then be the number of excess accidents attributable to alcoholism and alcohol abuse. In order to approximate this information, it is necessary to consider at least three types of accidents, since different costs are associated with different types--fatal, injury, and property damage accidents. In addition, it is necessary to determine the differential accident rate for alcohol abusers and non-abusers.

ESTIMATION PROCEDURE*

To compute the excess proportion of accidents by type, due to alcohol abuse (EAA), the following formula was used:

$$EAA = P_1 - P_3 (P_2 / P_4)$$

In other words,

$$\text{Excess proportion of accidents due to alcohol abuse} = \left(\text{Proportion of accidents with alcohol abuse} \right) - \left(\text{Proportion of alcohol abusers on the road} \right) \times \left(\text{Accident rate of non-abusers} \right)$$

Four proportions are needed for each accident type to make this comparison:

P_1 = proportion of accidents with alcohol abuse

P_2 = proportion of accidents without alcohol abuse

P_3 = proportion of drivers who are alcohol abusers

P_4 = proportion of drivers who are not alcohol abusers,

By definition, $P_1 + P_2 = 1$ and, $P_3 + P_4 = 1$. The ratio of P_2/P_4 adjusts for the effects of the excess number of alcohol-related accidents on the total accident rate.

The excess proportion of each type of accident due to alcohol abuse can then be used to calculate the dollar value cost of all traffic accidents.

In order to calculate EAA for each type of accident, of course, only P_1 and P_3 need be known. For each accident type, P_1 was obtained from the accident files of the Alaska Department of Public Safety. The values of P_3 , for each accident type, were estimated on the basis research information reviewed in a National study.**

The results of the calculations for the excess proportion of accidents by type due to alcohol abuse (EAA), and values for component elements, are

*Economic Cost, p. 64.

**Economic Cost, pp. 66-72.

presented in Table IV-1. The obtained values for EAA were then used to calculate the percentage of total costs for each type of motor vehicle accident that could be attributed to alcohol abuse.

RESULTS

The total cost of excess motor vehicle accidents attributable to alcoholism and alcohol was estimated to be over \$19.7 million. The required information and the procedure used to derive this figure is shown in Table IV-2.

When motor vehicle accidents are treated as a separate category for cost analysis, the \$19.7 million figure represents the total estimated cost. However, this figure includes costs associated with loss of future earnings for persons killed in motor vehicle accidents. Thus, for the purposes of this study, costs associated with loss of future earnings for fatalities need to be withdrawn from the total figure in order to avoid double counting, since similar costs have already been estimated as lost production costs due to excess mortality attributable to alcohol abuse.

On the basis of a recent insurance study*, 96 percent of the costs associated with motor vehicle fatality accidents account for loss of future earnings. Therefore, given the information presented in Table IV-2 for fatality accidents, approximately \$10.7 million of the excess cost for fatality accidents has already been considered. Thus, excluding this amount already considered as lost production due to excess mortality, the estimated cost for excess motor vehicle accidents due to alcoholism becomes approximately \$9 million rather than \$19.7 million.

*Compensation For Motor Vehicle Accident Losses in the Metropolitan Area of Washington, D.C., Department of Transportation, 1970.

TABLE IV-1
PROPORTION OF EXCESS ACCIDENTS ATTRIBUTABLE TO ALCOHOL ABUSE
Alaska, 1975

Accident Type	P_1	P_2 ($1-P_1$)	P_3	P_4 ($1-P_3$)	EAA [$P_1-P_3(P_2/P_4)$]
Fatality	.45	.55	.14	.86	36
Injury	.18*	.82	.032	.968	15
Property Damage	.08*	.92	.032	.968	5

*Estimate based on 1974 statistics.

TABLE IV-2

ECONOMIC COSTS OF EXCESS MOTOR VEHICLE ACCIDENTS
 ATTRIBUTABLE TO ALCOHOLISM AND ALCOHOL ABUSE
 Alaska, 1975

Accident Type	1 Number	2 Unit Cost (dollars)	3 Total Cost (dollars)	4 EAA	5 Excess Cost (dollars)
Fatalities	119	\$260,000	\$30,940,000	36%	\$11,138,400
Injuries	5,579	9,500	53,000,500	15%	7,950,075
Property Damage	17,303	(Actual Reported Damages)	12,356,565	5%	617,828
Total Excess Cost Attributable to Alcohol Abuse					19,706,303

Sources:

- Column 1. Provided by Alaska Department of Public Safety and the Department of Highways.
 Column 2. Unit Costs for Alaska provided by Mr. William Swanson, Alaska Department of Highways.
 Column 3. Product of Columns 1 and 2. Total Cost for Property damage accidents provided by actual reported damages.
 Column 4. Excess proportion due to alcohol abuse, See Table IV-1.
 Column 5. Product of Columns 3 and 4.

PART V. ECONOMIC COSTS OF ALCOHOLISM AND ALCOHOL ABUSE TO
THE CRIMINAL JUSTICE SYSTEM

STATEMENT OF PROBLEM

The objective of this section is to estimate the cost of alcohol abuse and alcoholism to the criminal justice system--police, courts and corrections. This cost estimate reflects costs to the system rather than costs of criminal acts to victims. In this economic sense, the resources used for alcohol-related crimes could have been utilized in alternate ways had these acts not taken place.

The role that alcohol plays in the commission of a criminal act is as yet mainly undefined. But several researchers have noted the consumption of alcohol immediately before or at the time of the commission of a variety of offenses. Available research has shown a significant relationship between consumption of alcohol and the commission of violent crimes--criminal homicide, assaults, forcible rape, and other sex offenses. The relationship between alcohol and violent crime does not indicate a causal relationship, however. Similarly, certain types of crimes have come to be generally referred to as "100% alcohol-related offenses," given the high degree of association between offenders and alcohol use. The crimes in this category include driving while intoxicated, vagrancy, disorderly conduct, etc. But again, the association of alcohol and these criminal acts is also not considered causal. While it is understood that the consumption of alcohol does not in itself lead to violence, increasing circumstantial evidence links alcohol to crime. Thus, the demonstrated relationship between alcohol and specific crimes will be the basis for the estimation of the corresponding proportion of the criminal justice costs which might be attributed to alcohol abuse and alcoholism.

(See Volume IV for review of research and actual available data.)

METHODOLOGY

The estimation procedure for the determination of costs to the criminal justice system attributable to alcohol-related crime utilized four basic divisions, based on the nature of the criminal activity and the available literature and actual data. The four divisions are (A) Violent Crimes, (B) Property Crimes, (C) Part II Crimes and, (D) Other Costs--all other budgeted activities not covered in the direct analysis above.

Violent crimes and property crimes are typically classified as Part I Crimes. Part II Crimes are more often misdemeanors and include offenses generally considered to be 100% alcohol-related by definition.

In all cases, for all elements of the criminal justice systems, unit costs for activities are not available. All costs were estimated from total expenditures, using slightly different procedures in each division of cost determinations.

A. VIOLENT CRIMES

Crimes against persons generally involve more intensive activity and effort from the criminal justice system in terms of investigation, apprehension and prosecution efforts. It is likely that police and court costs would be significantly greater for crimes of violence than for Part II offenses. It was necessary to use national research information for the estimation of the cost of alcohol-related violent crime. This was necessary since no unit costs for different classifications of offenses were available for arrest, court and correction efforts. Arrests for violent crimes in Alaska only accounted for four percent of the total arrests in 1975 (See Table V-1). Given the presumed greater expense of violent crimes to the system compared to lesser offenses, and the small percentage of such arrests in Alaska, estimation of costs according to a proportion of actual total expen-

TABLE V-1
TOTAL NUMBER OF ARRESTS
IN ALASKA--1975

Type of Offense	Number	Arrests* Percent	Percent Alcohol Involvement**
Part I Total	4,717	23%	
Violent Crime Subtotal	766	(4%)	
Homicide	44		64%
Rape	67		34%
Aggravated Assault	504		41%
Property Crime Subtotal	3,951	(19%)	14%
Part II Total	16,008	77%	
Other Assaults	1,384	(7%)	41%
Sex Offenses	137	(.7%)	29%
Liquor Laws	1,746	(8%)	100%
Drunkenness	278	(1%)	100%
Disorderly Conduct	1,467	(7%)	100%
Vagrancy	40	(.2%)	100%
DWI	<u>3,157</u>	<u>(15%)</u>	100%
TOTAL--All Arrests	20,725	100%	

*All FBI Uniform Crime Report classifications of offenses are not included. Part I and Part II Totals equal Total for all arrest. Number of arrests compiled from records of Alaska Department of Public Safety and fifteen municipal police departments.

**Percentage of alcohol involvement based on research results--cited in Economic Cost, pp. 120-5: Homicide--Wolfgang; Rape--D.C. Crime Commission Study; Assaults--M. Amir; Sex Offenses--P. Gebhard; Property Crime--Division of Corrections, Department of Health and Social Services, Alaska. See also Volume IV of present report for a more complete review of available literature.

ditures would most likely produce misleading underestimates.

Results from the 1967 Task Force Report, Challenge of Crime to a Free Society*, produced estimates of the proportion of cost of each violent crime to all components of the criminal justice system--police, courts, corrections. According to this report, criminal homicide constitutes two percent of the total criminal justice system costs; aggravated assault accounts for nine percent; and, one percent of the cost is for forcible rape. The total expenditure for all components of the criminal justice system in Alaska was about \$45.4 million in 1975. The expenditures of the criminal justice system are presented in Table V-2. The estimated proportion of costs for violent crime is presented in Table V-3.

Given this information, and the extent to which these offenses are considered alcohol-related, corresponding costs can be determined for the criminal justice system as a whole. The necessary information regarding the extent to which each category of offense is alcohol-related is presented in Table V-1. The computations of alcohol-related costs, in Table V-4, shows that more than \$2.4 million of the total criminal justice system expenditures for criminal homicide, aggravated assault, and forcible rape can be attributed to alcohol abuse. This cost estimate excludes violent crimes other than those indicated because generally accepted information regarding extent of alcohol involvement is not available.

B. PROPERTY CRIMES

Arrests. The actual number of arrests for the collapsed category of property crime offenses totalled 3,951 in 1975; and, 14% of arrests in this category are generally considered to be alcohol-related. This information is shown in Table V-1. Thus, 553 arrests or approximately 3% of the total

*Economic Cost, p. 127.

TABLE V-2
EXPENDITURES OF THE CRIMINAL
JUSTICE SYSTEM BY COMPONENT
ALASKA, 1975

Component	Amount
Enforcement	
State Troopers	\$ 12,556,100
Municipal Police	4,948,219
Prosecution	1,969,800
Judicial	12,690,400
Corrections	13,273,400
Other*	5,113,000
TOTAL	\$ 50,550,919

*See Table V-7. This amount is excluded in calculations in Sections A, B, and C.

Source: Budget expenditures obtained from Division of Budget and Management reports. Municipal expenditures obtained from Department of Community and Regional Affairs.

TABLE V-3
ESTIMATED COSTS OF SELECTED VIOLENT
CRIMES FOR ENTIRE CRIMINAL
JUSTICE SYSTEM, ALASKA, 1975

Offense	Percentage of Cost	Estimated Cost
Criminal Homicide	2%	\$ 908,758
Aggravated Assault	9%	\$ 4,089,413
Forcible Rape	1%	\$ 454,379

TABLE V-4

ESTIMATED COST OF VIOLENT CRIME ARRESTS TO CRIMINAL
JUSTICE SYSTEM ATTRIBUTABLE TO ALCOHOL
ALASKA--1975

Offense	Percentage Cost to CJS	Cost to Alaska CJS (dollars)*	Percent Alcohol- Related**	Alcohol- Related Cost--Alaska (dollars)
Criminal Homicide	2%	\$ 908,758	64%	\$ 581,605
Aggravated Assault	9%	4,089,413	41%	1,676,659
Forcible Rape	1%	454,579	34%	<u>154,489</u>
TOTAL Alcohol-Related Cost				\$2,412,753

*From Table V-3.

**From Table V-1.

enforcement effort was expended for arrests for property crimes due to alcoholism and alcohol abuse. In terms of dollar expenditures, this amounts to about \$.467 million for alcohol-related property crimes.

Court Costs. Estimates from the Alaska Court System indicated that the average court costs for non-violent crime cases amounted to \$245. Thus, 553 alcohol-related property crime cases at \$245/case amounts to \$.135 million.

Corrections.* The estimates of costs for corrections and rehabilitation are based on a series of calculations, listed in series below; the estimated amounts are computed, carried and totalled.

Booking Costs:

553 cases x \$22 = \$.012 million

Pre-court Incarceration Costs:

Thirty-three percent of persons arrested serve an average of fourteen days prior to court at an average institutional cost of \$41/day. Thus,
 $553 \times 33\% \times 14 \times \$41 = \$.105$ million.

Post-court Incarceration Costs:

Twenty-six percent of property crime arrests serve an average sentence of eight days at an institution cost of \$41/day. Thus,
 $553 \times 26\% \times 8 \times \$41 = \$.047$ million.

Probation Costs:

Six percent of persons arrested for non-violent crimes are placed on probation for an average of one year at an estimated cost of \$2.81 per day. Thus,
 $553 \times 6\% \times 365 \times \$2.81 = \$.034$ million.

Corrections Sub-total = \$.198 million

Property Crimes Total. The total cost estimated for the criminal justice system for alcohol-related property crimes amounts to approximately \$800,000.

*The Alaskan Division of Corrections provided statistical information and unit cost estimates regarding booking, pre-, and post-court incarcerations, and probation activities in relation to various categories of offenses.

C. PART II CRIMES

Arrests. As can be seen from Table V-1, arrests for Part II criminal offenses represent the greatest number of arrests, over 77% of the total. The necessary information to compute the cost of arrest activities that could be attributed to arrests for Part II offenses is presented in Table V-5.

As shown in Tables V-4 and V-5 (columns 1, 2, and 3), research information regarding alcohol involvement for the categories of arrest in Part II crimes only covers about 51% of all Part II arrests. This amounts to 37% of the total number of arrests, which proportionately corresponds to a cost estimate of \$6.477 million for alcohol-related Part II offenses.

Court Costs. Given the average unit cost for court cases, and the information that 96% of those arrested go to court (Alaska Court System Report, 1975), 7,295 cases x 96% x \$245 becomes \$1.716 million for alcohol-related court costs for misdemeanors.

Corrections. The series of necessary calculations is listed below:

Booking Costs:

7,295 cases x \$22 = \$.160 million

Pre-court Incarceration:

7,295 cases x 33% x 14 days x \$41 = \$1.382 million

Post-court Incarceration:

Assaults and Sex Offenses:

607 cases x 45% x 8 days x \$41 = \$.090 million

100% Alcohol-Related Cases:

6,688 x 10% x 8 days x \$41 = \$.219 million

Probation Costs:

7,295 cases x 6% x 365 x \$2.81 = \$.449 million

Corrections Sub-total = \$2.3 million

Part II Crimes Total. The total cost estimated for the criminal justice system for alcohol-related Part II crimes amounted to \$10.493 million dollars. Again, this estimate covers only those Part II-type arrests that

TABLE V-5

CHARACTERISTICS OF PART II ARRESTS ATTRIBUTABLE TO ALCOHOLISM AND
ALCOHOL ABUSE, ALASKA, 1975

Offense	1 Number of Arrests	2 Percent Alcohol- Related	3 Number Alcohol- Related Arrests	4 Percent of Arrests Sentenced	5 Number Incarcerated
Assaults	1,384	41%	567	19%	108
Sex Offenses	137	39%	40	45%	18
100% Arrests	<u>6,688</u>	100%	<u>6,688</u>	10%	<u>669</u>
TOTAL	8,209		7,295		795
Percent of Part II Arrests	51%		46%		
Percent of Total Arrests	40%		37%		

Columns 1 and 2. See Table V-4.

Column 3. Column 1 multiplied by column 2.

Columns 4 and 5. Percentage figures provided by Division of Corrections, Department of Health and Social Services.

have known alcohol involvement; about 50% in this category.

D. OTHER COSTS

A survey of all other components of the criminal justice system identified a number of agencies that have budgeted costs that included activities that were alcohol-related but not included in one of the preceding calculations. A listing of these agencies or budget areas is provided below, along with associated annual expenditures, percent of alcohol-related activity, and corresponding alcohol-related expenditures (Table V-6).

TABLE V-6

ESTIMATION OF ADDITIONAL CRIMINAL JUSTICE SYSTEM COSTS
ATTRIBUTABLE TO ALCOHOLISM AND ALCOHOL ABUSE--1975

Category	Annual Expenditure* (\$ millions)	Percent Alcohol- Involved**	Alcohol-Related Expenditures (\$ millions)
Public Defender	1.195	60%	.717
Criminal Justice Planning	3.089	2.5%	.077
Violent Crime Compensation Board	.108	37%	.040
Child Court Filings	.599	50%	.030
Pipeline Impact	.122	2.5%	.003
Prosecution	<u>1.970</u>	35%	<u>.690</u>
Total	\$ 7.083		\$ 1.557

*Budget Expenditures, Division of Budget and Management.

**Estimates derived from survey of agency.

RESULTS

A brief summary of the estimated costs of alcohol-related crime according to various components of the criminal justice system is provided

in Table V-7 below.

TABLE V-7
SUMMARY
ESTIMATED EXPENDITURES BY THE CRIMINAL JUSTICE SYSTEM ATTRIBUTABLE
TO ALCOHOLISM AND ALCOHOL ABUSE, ALASKA, 1975

System Component		Amount (millions)	Percent of Total Alcohol- Related Costs
Enforcement		\$ 7.951	52.1 %
Violent Crime*	1.007		
Property Crime	.467		
Part II Crime	6.477		
Court Costs		1.972	12.9 %
Violent Crime	.121		
Property Crime	.135		
Part II Crime	1.716		
Corrections		3.783	24.8 %
Violent Crime	1.285		
Property Crime	.198		
Part II Crime	2.300		
Other Costs (includes Prosecution)		<u>1.557</u>	<u>10.2 %</u>
Total Costs Attributable to Alcoholism and Alcohol Abuse		\$ 15.263	100.0 %

*Estimated violent crime costs disaggregated for each system component according to breakdown provided by 1967 President's Task Force Report, see Economic Cost, p. 127.

As indicated in Table V-7, the estimation of expenditures by all components of the criminal justice system that can be attributed to alcohol-related criminal acts totals over \$15 million in 1975. More than half of these costs are accounted for by enforcement activities, 52.1%; about one-quarter of the costs are for corrections, 24.8%; and, court

costs and other costs (which include state prosecution) account for 12.9% and 10.2% of the total alcohol-related costs.

In aggregate, the total amount of \$15 million represents about 30% of the total criminal justice system expenditures for 1975. Table V-8 provides a breakdown of total costs as a percentage of each and all component expenditures. Enforcement activities account for 15.7% of total costs, corrections--7.5%, courts--3.9%, and other (including prosecution)--3.1%.

The estimated alcohol-related expenditures should be considered as conservative. Not all categories of offenses were included due to lack of any information regarding their association with alcohol consumption as a basis for estimations. Also, these expenditures are estimated expenditures by the criminal justice system, not as the total cost for crime and anti-social cost to society. Theoretically, the costs estimated here are considered resources that could have been used in alternative ways.

TABLE V-8

ESTIMATED EXPENDITURES OF CRIMINAL JUSTICE SYSTEM ATTRIBUTABLE TO ALCOHOLISM AND ALCOHOL ABUSE
AS A PROPORTION OF EACH AND ALL SYSTEM COMPONENTS

Component	Total Component Expenditure	Alcohol- Related Expenditures	Percent of Expenditure for each Component	Percent of Total Expenditures
Enforcement	\$ 17.504	\$ 7.951	45.4 %	15.7 %
Courts	12.690	1.972	15.5 %	3.9 %
Corrections	13.273	3.783	28.5 %	7.5 %
Other	<u>7.083</u>	<u>1.557</u>	<u>21.9 %</u>	<u>3.1 %</u>
Total	\$ 50.550	\$ 15.263	-----	30.2 %

PART VI. ECONOMIC COST OF ALCOHOLISM AND ALCOHOL ABUSE TO
THE HEALTH CARE SYSTEMS *

STATEMENT OF THE PROBLEM

The purpose of this section is to estimate the impact of alcoholism and alcohol abuse on the health and medical care system. The primary interest is the economic cost of providing health and medical care services to alcoholics or alcohol abusers. Thus, the methods and findings presented in this section refer to excess economic costs due to alcohol abuse and alcoholism. The estimated costs refer to economic costs of providing the services rather than cost to individuals.

METHODOLOGY

A. SERVICE DELIVERY MODEL

In estimating the excess costs of health and medical care services due to alcoholism and alcohol abuse, the conception of the entire range of such services and cost measures was based on a model established by Cooper and Rice (1976). This model provides for consideration of indirect and direct costs, and was originally developed for a more general application for overall health and medical care costs. It has been adapted for the purpose of this specific investigation. This model considers two categories of costs.

1. INDIRECT COSTS

Indirect costs refer to the dollar value of foregone output, or lost production, due to disability or illness (morbidity) and/or

*The outline, methodology and basic data included in this section are based on an unpublished report prepared by Brian Saylor, M.P.H., Legislative Affairs Agency, State of Alaska. Special thanks are extended to Mr. Saylor and to Mr. Gregg Erickson, Director of Research Services, for the interest and allocation of resources for this project.

premature death (mortality).

2. DIRECT COSTS

Direct costs refer to the dollar value of services provided for direct health care and supporting services. These can be categorized as institutional and non-institutional costs.

Institutional costs cover direct services provided and refer to various measures of utilization of facilities, which differ according to type of facility or service. The institutional facilities and services investigated were: hospitals (general and psychiatric), physicians services, dental services, other professional services, drugs and nursing care.

Non-institutional costs estimate the dollar value of administration of health insurance policies, research and training.

B. ESTIMATION PROCEDURES

1. INDIRECT COSTS

Estimation of the costs of lost production due to illness, disability and premature death attributable to alcoholism and alcohol abuse is presented in the section of Lost Production.

2. DIRECT SERVICES

In order to estimate the cost of excess health and medical care services provided to alcoholics and alcohol abusers, it is necessary to determine the nature and extent of all services provided to all patients and then to estimate the extent of services that would have been provided to a hypothetical population where alcoholics and alcohol abusers did not exist. The difference between the two represents the impact of alcoholism and alcohol abuse.

In order to determine the nature and extent of all institutional health and medical care services within the state, a conventional categorization of services was employed to bring together federal, state, regional, and local service delivery systems, agencies and geographic planning and service areas. All services were divided by three major, conventional target populations. Thus, estimation of costs for institutional services provided was divided according to services provided to patient populations designated as: non-Native--general population, including both public and private institutions and practitioners; military--restricted population of military personnel, dependents and others employed by the U.S. Department of Defense; Native--the Alaska Native population, primary provider of services being Public Health Services, DHEW.

C. COMMENTS--LIMITATIONS

The nature of the available data necessitated extensive use of "opinions" within calculations of services utilization for alcoholics, and therefore within estimates of excess cost. In most cases, a low and high estimate was made in an attempt to at least define a range within which an acceptable estimate should exist.

RESULTS

The estimated excess costs due to alcoholism for institutional and non-institutional services are presented by type of facility and/or service. For each type of facility or service, the estimation procedure will be briefly outlined and the preliminary findings stated. The aggregated excess costs will then be summarized in the CONCLUSION section.

A. INSTITUTIONAL SERVICES--COSTS

Cost estimates are provided for the following facilities and services:

hospitals, physicians, dentists, nursing homes, pharmacies, foster homes, and other professional services.

1. HOSPITALS

No direct recorded information exists that describes the extent of excess inpatient hospital utilization related to alcoholism in Alaska. Thus hospital costs were estimated separately for non-Native, military and native hospitals.

Non-Native Hospitals. In the absence of recorded information regarding alcohol-related acute care admissions, relevant literature was reviewed to obtain an estimate of the proportion of acute care, alcohol-related admissions. A review of this summary is presented in Table VI-1. Review of this summary indicated that 15 to 25 percent of all acute care admissions were alcohol-related.

Two excess cost estimates were calculated--a low estimate based on the 15% alcohol-related admission rate, and a high estimate based on the 25% admission rate. A list of all non-Native hospital utilization characteristics is presented in Table VI-2. Total figures for admissions and average length of stay for non-Native patients, along with the percentage of all hospital admissions which were alcohol-related, and the fractional increased length of hospital stay required by an alcoholic as compared to a non-alcoholic, were used to calculate excess use of inpatient hospital days attributable to alcoholism.

Estimation of excess institutional services was accomplished by application of the procedures and formulae presented below.

The average use of services for all patients is a function of the extended average use of services by alcoholic patients plus the reduced average use of services by non-alcoholic patients. This can be represented by the formula:

$$L = (f \times ba) + (1 - f)bn$$

Thus the average use of service (e.g., average length of stay in

TABLE VI-I

SOME EVIDENCE FROM RELEVANT LITERATURE CONCERNING THE PROPORTION OF ALCOHOLICS IN GENERAL HOSPITALS

Author 1/	Sample Size	Alcohol Abusers as a Proportion of All Admissions or All Patients			Author's Criteria for Defining Alcohol Abuse	Sample Composition or Study Interest
		Male	Female	Total		
Pearson	100	29% (plus 9% possible)	--	29% (plus 9% possible)	By interview, 4 or more of the following criteria: 1. Alcoholic Blackouts 2. Sneaking Drinks 3. Loss of Control 4. Murring "Eye-Openers" 5. Loss of Friends, Family, Job Due to Drinking 6. Hospitalized Due to Drinking	1962 white male adults North Carolina medical and surgical patients Prevalence
Nolan	826	15%	10%	14%	Questionnaire on functional interference of alcohol with health, job, family	Adults, Connecticut 1955 Admissions
Kearney, et al.	416	--	--	8.7% (plus 17% possible)	Known to MD's as alcoholic or history of treatment for alcoholism, or treated for a diagnosed complication of alcoholism such as DT's, cirrhosis, etc. Information basically obtained from chart	Inpatients aged 14-75, upper middle class excluding obstetric patients, Connecticut, 1967 and hospitalized under the diagnosis of alcoholism or with a disease in which alcoholism can be a factor (i.e., GI or respiratory problems), Admissions
Kearney	235	--	--	13.4% (plus 27%)	Same criteria	Lower-class outpatients, otherwise same criteria, Admissions
Moore	200	18%	5.5%	10% (plus 3.5% possible)	Michigan alcoholism screening test	21 years or older, California, 1971, no OB patients, 65% female, 1971, Prevalence
Barccha et al.	392	28% (plus 7% possible)	6% (plus 2% possible)	16% (plus 2% possible)	Drinking history interview	General medical, over 20 years old, 1968, Admissions
Ewing and Rouse	130	40% 8 14	9% 0 9	28% 5 12	Barccha criteria Pearson criteria Hospital record	North Carolina, 1969, medical and surgical adult patients, data evaluated by 3 sets of criteria, Prevalence
Neustadt	67	59	18	39	Physician rating on basis of drinking enough to be a problem	Baltimore City Hospital medical wards, 1960, Prevalence
Neustadt	65	72	36	60	"	BCH, 1954, Prevalence
Neustadt	109	44	10	34	"	Johns Hopkins Hospital medical wards, 1964, Prevalence
Gaird	167			17	Questionnaire in primary or secondary diagnosis of alcoholic, directly administered	South London, 1971
West				1.09 30	Admitting diagnosis	Average daily census Total admissions, 1971
Bresand				50	Physician evaluation	France, 1974

1/ Pearson, William S., "The 'Hidden' Alcoholic in the General Hospital," North Carolina Medical Journal, 23:6-10, 1962.Nolan, J. P., "Alcohol as a Factor in the Illness of University Service Patients," American Journal of Medical Science, 249:135-42, 1965.Kearney, T. R., Bonime, H., and Cassimatis, G., "The Impact of Alcoholism on a Community General Hospital," Community Mental Health Journal, 3:373-6, 1967.Moore, Robert A., "The Prevalence of Alcoholism in a Community General Hospital," American Journal of Psychiatry, 128:638-9, 1971.Barccha, R., Steward, M. A., Guze, S. P., "The Prevalence of Alcoholism Among General Hospital Ward Patients," American Journal of Psychiatry, 125:681-4, 1968.

Ewing, John A. and Rouse, Beatrice A., "Identifying the 'Hidden Alcoholic,'" 29th International Congress on Alcohol and Drug Dependence, Sydney, N.S.W., Australia, February 3, 1970.

Neustadt, J., "The Vice of Alcohol," Maryland State Medical Journal, May 1956, pp. 29-30.Gaird, R., Personal communication cited in Drugs, Alcohol and Tobacco in Great Britain, Eds. Lacune, J. G. and Hensman, C., London, 1971.West, J. W., "Alcoholism--A General Hospital Meets the Challenge," Illinois Medical Journal, 142:2, pp. 96-97, 1974.Bresand, M., "Alcoolisme et Conscience Collective," Review of Alcoholism, 15:81-96, 1969, cited in deLint, J., "The Prevention of Alcoholism," Preventive Medicine, 3:24-35, 1974.Source: Economic Cost, pp. 83-84.

TABLE VI-2

CHARACTERISTICS OF UTILIZATION OF NON-NATIVE ACUTE CARE HOSPITALS, 1974

	Beds ¹	Avail. Patient Days	INPATIENT DAYS			ADMISSIONS			AVERAGE LENGTH OF STAY		
			Total	Non-Native	Native ¹	Total	Non-Native	Native	Total	Non-Native	Native
Anchorage Community ²	85	31,025	20,818	20,737	81	4766	4757	9	4.37	4.36	9.10
Providence (Anchorage) ²	150	54,750	47,797	47,605	192	10067	10046	21	4.75	4.74	9.10
Cordova Community ³	14	5,110	895	532	363	257	217	40	3.48	4.12	9.10
Fairbanks Memorial ²	116	43,340	27,013	24,616	2,397	5707	5444	263	4.73	4.52	9.10
Faith Hospital (Glenallen) ³	5	1,825	940	655	285	291	260	31	3.23	2.52	9.10
Homer ²	10	3,650	1,460	1,047	413	454	409	45	3.21	2.56	9.10
Bartlett Memorial (Juneau) ²	67	24,455	12,765	11,778	987	2435	2327	108	5.24	5.06	9.10
Ketchikan General ³	55	20,075	7,197	5,831	1,366	1827	1677	150	3.94	3.48	9.10
Kodiak Island ²	25	9,125	4,745	3,738	1,007	1157	1047	110	4.10	3.57	9.10
Maynard McDougall Mem. ³ (Nome)	18	6,570	2,964	859	2,105	803	398	405	3.69	2.16	5.2*
Valley General (Palmer) ²	25	9,125	2,555	2,555	-0-	647	647	-0-	3.94	3.94	-0-
Petersburg General ³	13	4,745	1,748	1,245	503	465	410	55	3.76	3.04	9.10
Seward General ²	33	12,045	2,192	1,929	263	536	507	29	4.09	3.80	9.10
Sitka General ²	24	8,760	5,107	5,107	-0-	956	956	-0-	5.34	5.34	-0-
Central Peninsula ² (Soldotna)	30	10,950	2,924	2,820	104	873	862	11	3.35	3.27	9.10
Wrangell General ³	11	4,015	1,072	770	302	306	273	33	3.50	2.82	9.10
TOTALS	676	246,740	142,192	131,824	10,368	31,256*	30,237	1,310	4.52	4.36	7.91

*Arithmetic Rounding

**The average length of stay is calculated from AANHS contract data because of the large percentage of Native admissions.

Sources:

1. Alaska Area Native Health Service Utilization of Contract Health Services, FY 1975. AANHS Contract Health Care Program.
2. Guide to the Health Care Field, American Hospital Association, 1975 edition, pp. 28-29.
3. Alaska State Plan for the Construction of Hospitals and Other Medical Facilities, Health Facilities Development, Office of Planning and Research, Department of Health and Social Services, April 1, 1976.

a hospital) for all patients (L) equals the product of the proportion of alcoholic patients (f) and their average use of services (ba), plus the product of the proportion of non-alcoholic patients (1 - f), and their average use of services (bn).

The fractional increase in average use of service (g) for an alcoholic compared to a non-alcoholic patient is the ratio of average use of service by a alcoholic patient (ba) to the average use of service by a non-alcoholic patient (bn); g is a constant adjusted for each type of health care service.

$$g = \frac{ba}{bn}$$

Therefore, the average use of service by a non-alcoholic patient (bn) would be represented as

$$bn = \frac{ba}{1 + g}$$

By substituting this representation of average use of service in the original equation and solving for the average use of service by an alcoholic patient (ba),

$$ba = \frac{L}{f + \frac{(1 - f)}{(1 + g)}}$$

Thus, with the numerical value of the average use of service by an alcoholic patient (ba), the value of the average use of service by a non-alcoholic patient (bn) may then be calculated.*

With this information, the hypothetical utilization of service by a non-alcoholic patient population can be calculated. The difference between the hypothetical and actual utilization represents excess use of service attributable to alcoholism.

The results of the computation of excess acute care hospital days attributable to alcoholism in non-Native hospitals are shown in Tables VI-3A and VI-3B. The low estimate, accepting a fifteen percent alcohol admission rate, is 8,456 excess inpatient hospital days. This compares to 13,304 excess inpatient hospital days, accepting the high estimate of

*The formulae and procedure for the estimation of excess utilization of services developed and derived by Brian Saylor, M.P.H. and Alan Latham, Ph.D. Legislative Affairs Agency, State of Alaska.

TABLE VI-3A and VI-3B
EXCESS ACUTE CARE HOSPITAL DAYS IN NON-NATIVE HOSPITALS
ATTRIBUTABLE TO ALCOHOLISM IN 1974

	All Patients	Alcohol- Related Patients	Non Alcohol- Related Patients	Constant Patient Load No Alcoholics	Excess Use
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TABLE VI-3A ASSUMING A FIFTEEN PERCENT ALCOHOL-RELATED ADMISSION RATE

Admissions	30,237	4,536	25,701	30,237	4,536
Average Length of Stay*	4.36	5.92	4.08	4.08	1.84
Inpatient Hospital Days	131,833	26,853	104,860	123,367	8,466

TABLE VI-3B ASSUMING A TWENTY-FIVE PERCENT ALCOHOL-RELATED ADMISSION RATE

Admissions	30,237	7,559	22,678	30,237	7,559
Average Length of Stay*	4.36	5.68	3.92	3.92	1.76
Inpatient Hospital Days	131,833	42,935	88,898	118,529	13,304

*The average length of stay for an alcoholic patient was found to be about 45% longer than for a non-alcoholic patient. See Economic Cost, pp. 85-91.

25 percent alcohol-related admissions.

The daily cost for inpatient care in a non-Native hospital is about \$190.* This figure reflects only the cost of providing room and board to the patient and does not include drugs, physician services, or other ancillary service. Thus the low estimate for total cost of 8,456 excess days of inpatient care would be \$1,608,540; the high estimate for 13,304 excess days would be \$2,527,760.

Public Health Service Hospitals. The same procedure for the determination of excess inpatient days due to alcoholism for non-Native hospitals was used for Public Health Service (PHS) hospitals. Characteristics of utilization are presented in Table VI-4. Additional information from Table VI-2, regarding admissions and average length of stay for Alaska Natives, was combined with PHS data to calculate excess inpatient days, shown in Table VI-5A and VI-5B.

Assuming a 15 percent rate of alcohol-related admissions, 6,811 excess days of inpatient care would be attributable to alcoholism. Given the 25% alcohol-related rate, 10,953 excess days were calculated.

The daily cost for inpatient care amounts to about \$141**; therefore, the low estimate for cost of excess inpatient care in PHS Hospitals for 6,811 days amounts to about \$960,351; the high estimate for 10,953 excess days would be \$1,544,373.

Military Hospitals. Characteristics of utilization of military hospitals are presented in Table VI-6. The information regarding the calculation of excess utilization is presented in Tables VI-7A and VI-7B. Assuming that 15 percent of all admissions are alcohol-related, 3,678 of 57,816 inpatient days in military hospitals would be considered excess days due to alcoholism; given the 25 percent estimate, the figure would

Sources:

*Selected Community Hospitals and Demographic Statistics, American Hospital Association, 1974.

**Financial Management Office, Alaska Area Native Health Service, Anchorage, Alaska

25 percent alcohol-related admissions.

The daily cost for inpatient care in a non-Native hospital is about \$190.* This figure reflects only the cost of providing room and board to the patient and does not include drugs, physician services, or other ancillary service. Thus the low estimate for total cost of 8,456 excess days of inpatient care would be \$1,608,540; the high estimate for 13,304 excess days would be \$2,527,760.

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Sources:

*Selected Community Hospitals and Demographic Statistics, American Hospital Association, 1974.

**Financial Management Office, Alaska Area Native Health Service, Anchorage, Alaska

TABLE VI-4

CHARACTERISTICS OF UTILIZATION OF PUBLIC HEALTH SERVICE ACUTE CARE HOSPITALS, 1974

Hospital ¹	Beds ²	Available Patient Days	Admissions ¹	Used Patient Days ¹	Average Length of Stay	Percent Occupancy
Anchorage	183	66,795	5,276	56,742	10.7	84.94
Barrow	14	5,110	349	1,299	3.7	24.05
Bethel	42	15,330	1,590	9,941	6.2	64.84
Kanakanak	29	10,585	757	4,053	5.3	38.29
Kotzebue	40	14,600	765	3,442	4.5	23.57
Mt. Edgecumbe	82	29,930	1,288	18,311	14.2	61.17
St. Paul*	10	3,650	73	97	1.3	2.65
Tanana	26	9,490	426	4,567	10.7	48.12
TOTALS	426	155,490	10,524	98,452	9.35	63.31

*Includes St. George (St. George not reported for August 1974 thru June 1975)

¹ HSM-202-1--Monthly Report of Inpatient Services-PHS Indian and Alaska Native Hospitals

² Alaska State Plan for the Construction of Hospitals and Other Medical Facilities, Health Facilities Development, Office of Planning and Research, Department of Health and Social Services, April, 1976.

TABLES VI-5A & VI-5B
EXCESS ACUTE CARE HOSPITAL DAYS IN PUBLIC HEALTH SERVICE HOSPITALS
ATTRIBUTABLE TO ALCOHOLISM IN 1974

	All Patients*	Alcohol- Related Patients	Non Alcohol- Related Patients	Constant Patient Load No Alcoholics	Excess Use
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TABLE VI-5A ASSUMING A FIFTEEN PERCENT ALCOHOL-RELATED ADMISSION RATE

Admissions	11,834	1,775	10,059	11,834	1,775
Average Length of Stay	9.20	12.50	8.62	8.62	3.88
Inpatient Hospital Days	108,820	22,188	86,709	102,009	6,811

TABLE VI-5B ASSUMING A TWENTY-FIVE PERCENT ALCOHOL-RELATED ADMISSION RATE

Admissions	11,834	2,959	8,875	11,834	2,959
Average Length of Stay	9.20	11.99	8.27	8.27	3.72
Inpatient Hospital Days	108,820	30,682	73,396	96,867	10,953

*Information for all patients includes inpatient admissions to PHS hospitals and Alaska Native admissions to non-PHS hospitals. Sources: Total Inpatient Workload Statistics: FY 1974, Office of Systems Development, Alaska Area Native Health Services.

TABLE VI-6
CHARACTERISTICS OF UTILIZATION OF MILITARY ACUTE CARE HOSPITALS, 1974

HOSPITAL	BEDS	AVAILABLE PATIENT DAYS	ADMISSIONS (DISCHARGES)	USED PATIENT DAYS	AVERAGE LENGTH OF STAY	PERCENT OCCUPANCY
Elmendorf Air Force Base Hospital (Anchorage)	170	62,050	6,328	41,387	6.54	66.7
Bassett Army Hospital (Fairbanks)	70	25,550	2,848	16,429	5.77	64.3
TOTALS	240	87,600	9,176	57,816	6.30	66.0

Source: Guide to the Health Care Field, 1975 Edition. American Hospital Association, pp. 28-29.

TABLES VI-7A & VI-7B
EXCESS ACUTE CARE HOSPITAL DAYS IN MILITARY HOSPITALS
ATTRIBUTABLE TO ALCOHOLISM IN 1974

	All Patients*	Alcohol- Related Patients	Non Alcohol- Related Patients	Constant Patient Load No Alcoholics	Excess Use
--	------------------	---------------------------------	--	--	---------------

TABLE VI-7A ASSUMING A FIFTEEN PERCENT ALCOHOL-RELATED ADMISSION RATE

Admissions	9,176	1,376	7,800	9,176	1,376
Average Length of Stay	6.30	8.56	5.90	5.90	2.66
Inpatient Hospital Days	57,816	11,779	46,020	54,138	3,678

TABLE VI-7B ASSUMING A TWENTY-FIVE PERCENT ALCOHOL-RELATED ADMISSION RATE

Admissions	9,176	2,294	6,882	9,176	2,294
Average Length of Stay	6.30	8.21	5.66	5.66	2.55
Inpatient Hospital Days	57,816	18,834	38,952	51,936	5,880

*Source: See Table VI-6.

be 5,880 excess days.

Total cost for excess inpatient hospital days, at \$81 per day*, would be \$297,918 for the lower estimate, and \$476,280 for the higher estimate.

Alaska Psychiatric Institute.

Alaska Psychiatric Institute (API), the only state-operated and primary psychiatric inpatient facility in the state, was able to provide actual information regarding alcohol-related admissions and discharges. The nature of the facility allows accurate alcohol-associated diagnoses, due to the provision of direct alcohol treatment services. Thus, the figures to be presented represent direct, rather than estimated alcohol-related costs.

Actual data for FY 1976 provided by API show that 24.8% of all discharges (749) involved a primary or secondary alcohol-related diagnosis. The actual number of discharges with alcohol-related diagnosis totaled 186 for FY 1976, with an average length of stay of 26.9 days. The cost of API inpatient services is \$120.00 per day.** Based on these actual data findings, costs for alcohol-related patients at the Alaska Psychiatric Institute were \$600,408 for FY 1976. (See Table VI-8.)

This cost figure, then, is direct and actual as opposed to estimated. It is in this case equivalent in category to excess costs estimated thus far for other medical hospital services since these patients would not have been admitted but for the evidence of an alcohol problem.

*Hospital Administrator, Elmendorf Air Force Base Hospital, Anchorage, Alaska.

**Cost per day figure from Linda Smith, Research Analyst, Division of Mental Health, Alaska Psychiatric Institute, Anchorage, Alaska.

TABLE VI-8

ALASKA PSYCHIATRIC INSTITUTE
ALCOHOL-RELATED DISCHARGES--FY 1976*

	# of Discharges with Primary or Secondary Alcohol-Related Dx	Total # of API Discharges	% of A/R Discharges
Discharges TOTAL	186	749	24.8%
Average Length of Stay (# of days)	26.9		
Cost per day	\$120.00		
Direct alcohol- related costs (FY 1976)	\$600,408.00		

Source of data: Linda Smith, Research Analyst, Division of Mental
Health, Alaska Psychiatric Institute, Anchorage, Alaska.

SUMMARY--HOSPITALS

The following table summarizes the costs of excess use of hospital services attributable to alcoholism or alcohol abuse, using the low and high estimates of alcohol-related admissions to Alaskan acute care institutions.

TABLE VI-9

HOSPITALS AGGREGATED EXCESS COSTS SUMMARIZED

Hospitals Acute Care	Low-Cost Estimate	High-Cost Estimate	Average Cost Estimate
Non-Native	\$1,608,540	\$2,527,760	\$ 2,068,150
Public Health Service	960,351	1,544,373	1,252,362
Military	297,918	476,280	387,099
API*	600,408	600,408	600,408
Total	\$3,467,217	\$5,148,821	\$ 4,308,019

*Alaska Psychiatric Institute was able to provide actual admission date; this cost figure is direct and actual as opposed to estimated.

2. PHYSICIANS' SERVICES

In evaluating the impact of alcoholism and alcohol abuse on the health care delivery system, it is essential to examine the physicians' services attributed to alcoholism or alcohol-related problems. To estimate excess use of physicians' services attributable to alcoholism and alcohol abuse, it is necessary to estimate the amount of services that would have been provided to a hypothetical population where alcoholics and alcohol abusers did

not exist.

Non-Native and Military Physician Services. The absence of actual statistics concerning the number or rate of alcohol or alcohol-related visits to non-Native/private general practice physicians, necessitated the use of estimates of excess use of physicians' services due to alcoholism or alcohol abuse in Alaska.

First, the estimated patient load of Alaskan physicians was developed using data from a 1975 physician relicensure survey. (See reference-- Table VI-10.) The survey response rate was over 60% for private practice physicians and 24% for military physicians. The survey results indicated that the average reported patient load for private practice physicians was 3,881 patient visits per year; for military physicians, patient visits averaged 3,444 per year. Projection of these sample results to the total number of private practice and military physicians in the state yielded an estimated total of more than 1,520,000 physician visits per year for all Alaskans.

Excess cost estimates were calculated using the projections of total physician use, the previously used formula (see pages 66 and 69), and estimates of the proportion of alcohol-related physician visits. The low estimate of the percentage of all visits which are alcohol-related was derived from figures presented in the National Disease and Therapeutic Index. NDTI estimated that 6.6% of all physicians' visits were alcohol-related. The high estimate that was used was generated in a special survey cited in The Economic Costs of Alcohol Abuse and Alcoholism (1974), which found 17% of all physician visits to be alcohol-related. If this figure is adjusted for Alaskan alcohol consumption figures, an estimated 24.3% of all physician visits are alcohol-related (see Table VI-11).

Excess usage by Alaskans of non-Native and military physicians' services, attributable to alcoholism is presented in Table VI-12. The low estimate of

TABLE VI-10
ESTIMATED PATIENT LOAD OF NON-NATIVE AND
MILITARY PHYSICIANS, 1974

	Total Physicians*	Number of Survey Responses	Percentage of Response	Reported Total Visits Per Year**	Total Visits Physician/ Year (Sample)	Projected Total Visits Per Year All Physicians
Private Physicians	320	195	60.9	755,780	3,881	1,241,920
Military	81	20	24.1	61,998	3,444	278,964
Total	401	215	53.6	817,778	7,325	1,520,884

Sources:

*Annual Health Director, Alaska State Medical Association, 1975.

**Barber, S.S.; Crouse, K.; Alaska Physician Manpower Characteristics and Trends, Alaska Medicine, 17:5 p. 80-81, 1975, and unpublished data, Office of Planning and Research, Alaska Department of Health and Social Services.

TABLE VI-11

SOME EVIDENCE FROM RELEVANT LITERATURE CONCERNING THE PROPORTION OF
ALCOHOLICS SEEN IN PRIVATE GENERAL PRACTICE

Source	Physician Visits by Alcoholic Patients as a Percentage of Total Visits
National Disease Therapeutic Index*	6.6%
Special Survey: The Economic Costs of Alcohol Abuse and Alcoholism (1974)**	17%
Adjusted for Alaska***	24.3%
Grant and Boyd (1961) Northern Ireland****	19.1%
Wilkins (1974) Great Britain*****	13.5%

*"Alcoholism," National Disease and Therapeutic Index, 4:7-8, 1973.

**The Economic Costs of Alcohol Abuse and Alcoholism, Final Report, Policy Analysis, Inc., Boston, MA, HSM, 42-73-114 (NIA) March 31, 1974. Table 4, page 89.

***Each Alaskan of drinking age consumed 4.03 gallons of absolute alcohol in 1972. This figure is 56% higher than the national average of 2.63 gallons, and assumes a linear correlation between an individual's consumption and his health status.

****Grant, A.P., Boyd, M.W.J. Ulster Medicine, 30:114, 1961.

*****Wilkins, R.H., "A Survey of General Practice Prevalence Studies in Great Britain;" paper presented at the 20th International Institute on the Prevention and Treatment of Alcoholism, Manchester, England, June, 1974.

TABLE VI-12

EXCESS USE OF NON-NATIVE AND MILITARY SERVICES ATTRIBUTABLE TO
ALCOHOLISM OR ALCOHOL-RELATED PROBLEMS, 1974

Assumptions:	6.6% of All Physician Visits are Alcohol-Related*		24.3% of All Physician Visits are Alcohol-Related*	
	Visits	Visits/Person/Year	Visits	Visits/Person/Year
Total Civilian and Military**	1,520,884	5.55***	1,520,884	5.55
Non-Alcohol-Related	1,420,506	5.17	1,151,309	4.47
Alcohol-Related****	100,378	10.21	369,575	8.83
Constant Patient Load, No Alcoholics	1,415,629	5.17	1,223,957	4.47
Excess	105,225	5.04	296,927	4.36

*See Table VI-11.

**Military and non-Native physician visits were aggregated because of incomplete information on the extent of military personnel use of private physicians.

***The estimated total number of non-Native and military physician visits is shown in Table IV-10. That number divided by the combined non-Native and military population results in the average physician visits per person, per year.

****A special survey cited in The Economic Costs of Alcohol Abuse and Alcoholism (1974) showed that physicians visits for alcohol abusers (8.5 visits per year) are 97.6% higher than for non-alcohol users (4.3 visits per year).

excess physician visits, presented in Table VI-12, shows approximately 105,000 total excess visits for all non-Native and military physicians; the high estimate shows almost 300,000 total excess visits.

The estimated costs for these excess visits to physicians, based on a per visit cost of about \$34.50,* ranges from \$3.7 million for the low estimate to \$10.5 million for the high estimate.

Alaska Native Physicians' Services. Actual data on the number of ambulatory patient care visits involving a clinical impression of alcoholism or drug abuse (provided by the Office of Systems Development, AANHS)** reveals that 1.2% of all Alaska Native physicians' visits were alcohol-related. Given its availability, this figure was used to calculate the low estimate of excess visits. It is generally accepted however that all alcohol-related visits are not recorded as such. Thus, the value derived from the literature, 24.5%, was used to calculate the high estimate (Table VI-11). Given these low and high estimates, Table VI-13 illustrates the wide range of estimated excess physician visits related to alcohol to be between 3300 and 24,000.

The estimated costs for these excess visits to Alaskan Native Health Service physicians, based on a per visit cost of about \$24.00***, ranges from over \$79,000 for the low estimate to \$582,360 for the high estimate.

SUMMARY--PHYSICIANS

A brief summary of the estimation of the results of the calculation of the excess utilization of physicians' services that is attributable to

*Average cost of a physician office visit paid by the Alaska Medicaid program, from Medicaid Annual Studies Report, Division of Medical Assistance, Department of Health and Social Services, 1975.

**Alaska Area Native Health Service

***Financial Management Office, AANHS, Anchorage, Alaska.

TABLE VI-13

EXCESS USE OF ALASKA AREA NATIVE HEALTH
SERVICE PHYSICIAN SERVICES ATTRIBUTABLE TO
ALCOHOLISM OR ALCOHOL-RELATED PROBLEMS, 1974

Assumptions:	6.6% of All Physician Visits are Alcohol-Related*		24.3% of All Physician Visits are Alcohol-Related**	
	Visits	Visits/Person/Year	Visits	Visits/Person/Year
Total Alaskan Native***	248,896	4.36	246,896	4.36
Non-Alcohol-Related	243,894	4.30	186,900	3.93
Alcohol-Related****	3,002	6.23	59,996	5.70
Constant Patient Load, No Alcoholics	243,591	4.30	222,631	3.93
Excess Use of Phy- sicians' Services	3,305	1.94	24,265	1.77

*Actual data on the number of ambulatory patient care visits involving a clinical impression of alcoholism or drug abuse, Office of Systems Development AANHS, May 12, 1976; Statistical Summary; Indian Health Service; Alaska Area Native Health Service, Office of Systems Development, June 1975, Table 5.

**See Table IV-11.

***The estimated number of physician visits by Alaskan Natives is obtained by dividing all recorded visits by the Native population. Total visits were presented in Statistical Summary, IHS, Office of Systems Development, AANHS, June 1975, Table 5.

****A special survey cited in The Economic Costs of Alcohol Abuse and Alcoholism showed that physician visits for alcohol abusers (8.5 visits per year) are 97.6% higher than for non-alcohol abusers (4.3 visits per year).

alcohol abuse or alcoholism is presented in Table VI-14.

TABLE VI-14

EXCESS COSTS OF PHYSICIANS VISITS ATTRIBUTABLE TO ALCOHOL ABUSE AND ALCOHOLISM, ALASKA, 1974

Category	Low Estimate	High Estimate	Average
Non-Native and Military	\$3,633,419	\$10,500,000	\$7,066,710
Native	79,320	582,360	330,840
Total	\$3,712,739	\$11,082,360	\$7,397,550

The table illustrates that excess visits to physicians attributable to alcohol abuse and alcoholism have an economic value that ranges from a low estimate of about \$3.7 million, to over \$11 million. The average of the two estimates shows an excess cost of over \$7 million.

3. DENTAL SERVICES

Existing literature on the dental needs of an alcoholic population tends to be inconclusive. One study, for example, suggests that dental needs of alcoholics are generally higher than those of the rest of the population. Dunkley and Carson found that permanent tooth loss among alcohol abusers is three times higher than the national average for corresponding ages. Additionally, the cost of a dental rehabilitation program was found to be significantly higher for the alcoholic group, primarily because of a greater need for dental laboratory services.* These findings were substantiated by a study of alcoholic and psychiatric patients at a Veterans' Administration hospital.**

*Dunkley, R., and Carson, R., "Dental Requirements of the Hospitalized Alcoholic Patient," Journal of the American Dental Association, 76: 800-803, 1973.

**King, W., and Tudor, K., "Dental Problems of Alcoholic and Non-Alcoholic Psychiatric Patients." Quarterly Journal of Studies in Alcoholism, 34: 1208-1211.

However, it is not at all clear that the poorer dental health of an alcoholic is transmitted into greater usage of dental services. A special survey undertaken to assist a federal team in ascertaining the extent to which alcoholics used health services found that non-alcoholics had over twice as many dental visits per year as alcoholics.* For these reasons, no estimate of excess dental services attributable to alcoholism is offered. While there is evidence to suggest that alcoholics have poorer dental health than the average adult, there is little evidence to suggest that they use more dental care. In fact, just the opposite may be true; the lower amount of dental services may be a contributing factor to the poorer dental health of alcoholics.

The fact that no estimate for dental service costs is offered should not be interpreted as implying that alcoholism has no effect on the total dollar or human service impact of dental services. Rather, it implies that there is little basis for estimating such an impact. Therefore, while the total health care costs of alcohol abuse and alcoholism may be somewhat understated with the omission of this component, the omission is not likely to introduce a serious bias into the overall estimate of the impact of alcohol abuse and alcoholism on health and social services delivery.

4. OTHER PROFESSIONAL SERVICES

Services for the treatment and rehabilitation of alcoholics include privately practicing psychologists and social workers, trained alcoholism counselors, the clergy, and other professional counselling and rehabilitative services provided by trained health professionals. No data has been located upon which to base an estimate of the total cost of services provided by professionals to alcoholics. As in dental services, the omission of this estimate is not intended to imply that there is no cost involved. It merely

*The Economic Cost of Alcohol Abuse and Alcoholism, *op cit*, Table 4, p. 80.

means that currently there is insufficient information upon which to base an estimate. The omission of this estimate also tends to underestimate the total cost of alcoholism to the community and should be considered when evaluating the final total cost figures. Cost estimates for state-funded alcoholism counselors and social workers are considered, however, in separate chapters regarding social services and public assistance (Part VII), and direct alcohol program services (Part VIII).

5. DRUG AND DRUG SUNDRIES

Given the increased morbidity among alcoholics or alcohol abusers, it was of interest to estimate excess drug expenditures related to alcohol. Information regarding national per capita expenditures for drugs is presented in Table VI-15. Because of the decline in health conditions, the alcoholic or alcohol abuser expends about 56% more for drugs*. The average adult Alaskan spends almost \$50 per year for drugs. The national figure is slightly lower, reflecting a higher cost for drugs in Alaska, estimated to be about ten percent (see footnote Table VI-15). The same formula that was used for hospital and physician visits was used to calculate excess expenditures for drugs. The national per capita expenditure provided the basic figure for the low estimate of the calculation of excess drug expenditures attributable to alcoholism. The high estimate was the Alaska adult per capita estimate (Table VI-15). Table VI-16 shows, through estimates, that the alcohol-related excess use of drugs ranges from \$372,000 to \$418,000, with an average of \$395,00, in 1973.

6. NURSING HOME SERVICES

Nursing home services can be classified into two types of care, according to the intensity of services delivered. The more intensive of the two is termed a skilled nursing facility; the other is called an intermediate care facility. Patients often use skilled nursing facilities to convalesce following

*Economic Cost

TABLE VI-15
ESTIMATES OF PER CAPITA DRUG AND
DRUG SUNDRY EXPENDITURES

Private Consumer*	\$ 40.03
National*	43.47
Adult Expenditure**	45.00
Alaska Average Estimate***	44.03
Alaska Adult Estimate****	49.50

*U.S. Social Security Administration, Research and Statistics Note, (Note No. 1, 1975).

**Cooper, B.S. and Worthington. N.L., "Medical Care Spending for Three Age Groups; Social Security Bulletin, May 1972, pp. 3-16.

***The private consumer estimate adjusted for the increased cost of drugs and drug sundries in Alaska; 10% estimated by Stan Thompson, R.Ph., President, Alaska Pharmaceutical Association and Joy Donelson, R.Ph., Medical Arts Pharmacy, Anchorage, Alaska.

****The adult expenditure estimate adjusted for the higher costs of drugs and drug sundries in Alaska.

TABLE VI-16
EXCESS DRUG AND DRUG SUNDRY
EXPENDITURES ATTRIBUTABLE TO ALCOHOLISM
OR ALCOHOL ABUSE, 1973

	Low Estimate*	High Estimate**
Total Expenditure	\$15,461,530	\$17,382,370
Non-Alcoholic Per Capita Expenditure***	42.97	48.31
Non-Alcoholic Expenditure	14,408,474	16,210,372
Alcoholic Per Capita Expenditure	67.03	75.36
Constant Expenditure, No Alcoholics	15,089,302	16,964,491
Excess Drug Expendi- ture Attributable to Alcoholism	372,228	417,879
Average Excess Drug Expenditure		\$395,053

*Per capita estimate multiplied by total population.

**Adult per capita expenditure multiplied by total population.

***The drug expenditure for an alcoholic was found to be about 56% higher than for a non-alcoholic; The Economic Costs of Alcohol Abuse and Alcoholism, March 1974, Table 4, p. 89. Calculations assume 15,610 alcoholics in Alaska in 1973.

intensive services provided in an acute care institution. The skilled nursing facility provides services designed to help a patient receive physical or social rehabilitation services necessary to regain and maintain his former health status. Intermediate care facilities provide services to people who do not need the level of intensity of skilled services yet who require, by virtue of their physical or mental disability, a structured living situation with minimal care. Skilled and intermediate services have been combined for the purposes of estimating the use of nursing services attributable to alcohol-related medical problems.

The total number of nursing home days in 1974, shown in Table VI-17, was approximately 150,000 days. In Table VI-18, national surveys estimating the percent of alcohol-related nursing home patients are contrasted with Alaskan estimates. A weighted average reflects that approximately 30 percent of nursing home days are attributable to alcoholism or alcohol-related problems in Alaska.

Due to a lack of data, it was not possible to calculate the excess cost of alcohol-related nursing home care;* however, the calculations show that over 45,000 nursing home days are attributable to alcohol-related problems. At a cost of almost \$27** a day, the total cost of alcohol-related nursing home days is over \$1.2 million, as shown in Table VI-19.

*The use of the concept of excess care is somewhat dubious for long range nursing home care.

**Medicaid Annual Status Report, FY1974, Division of Medical Assistance, Department of Health and Social Services, 1975.

TABLE VI-17
CHARACTERISTICS OF ALASKAN NURSING
FACILITIES (SKILLED AND INTERMEDIATE)

Facility	Beds	Available Patient Days	Admissions or Discharges	Patient Days Used	Average Length of Stay (days)	Percent Occupancy
Glenmore	100*	36,500	246	32,990	135	90.3
Careage	100**	36,500	111	30,669	276	84.2
Careage North	100**	36,500	663	26,357	40	72.2
Ridgeview Memorial	74*	27,010	95	19,153	201	70.9
Cordova Community Hosp.	8*	2,920	4	2,257	564	77.0
Ketchikan General	40*	14,600	37	16,483	445	96.8
Petersburg General	12*	4,360	11	2,072	188	70.9
Maynard McDougal	6*	2,190	5	1,934	386	88.3
Wrangell	COMPLETE DATA NOT AVAILABLE					
Wesleyan Nursing Home	<u>64</u>	<u>23,360</u>	<u>59</u>	<u>18,095</u>	<u>307</u>	<u>77.0</u>
TOTAL	504	277,560	1,136	150,010	132	65.9

*Alaska State Plan for the Construction of Hospitals and Other Medical Facilities, Health Facilities Development, Office of Planning and Research, DHSS, April 1976.

**Personal correspondence with facility administrators.

TABLE VI-18
SOME EVIDENCE ON THE PERCENT
OF ALCOHOL-RELATED NURSING HOME PATIENTS

Source	Percent of Alcoholic Patients in Facility
Greenwald and Linn*	23.0
Special Survey**	8.5
<u>Alaskan Estimates</u>	
Cordova***	40.0
Wesleyan****	6.25
Careage House*****	<u>40.0</u>
Estimate Used (weighted average)	30.0

*Greenwald, S., and Linn, M., "The Younger Nursing Home Patient," Journal of Gerontology, 27, pp. 393-398, 1972.

**A special survey of alcohol-related health service use, The Economic Cost of Alcohol Abuse and Alcoholism, 1971, op. cit., p. 89.

***Correspondence with Emery Thibodeau, Administrator, Cordova Community Hospital, Cordova, Alaska, May 27, 1976.

****Correspondence with Mildred Peich, R.N., Administrator, Wesleyan Nursing Home, Seward, Alaska, May 26, 1976.

*****Correspondence with John Houser, Administrator, Careage House, Anchorage, Alaska, May 26, 1976.

TABLE VI-19
DIRECT USE OF NURSING HOME
ATTRIBUTABLE TO ALCOHOL ABUSE OR ALCOHOLISM, 1974

Total Days*	Percentage of Days Attributable to Alcoholism or Alcohol-Related Problems**	Estimated Days Attributable to Alcoholism and Alcohol-Related Problems	Cost per Day***	Cost of Alcohol- Related Care
150,010	30.0	45,003	\$26.94	1,212,380

*See Table VI-17.

**See Table VI-18.

***"Medicaid Expenditures Type," Medicaid Annual Status Report, FY1974, Division of Medical Assistance, DHSS, January 31, 1975, p. 15.

7. SUMMARY OF INSTITUTIONAL COSTS
OF HEALTH AND MEDICAL CARE
ATTRIBUTABLE TO ALCOHOLISM AND
ALCOHOL ABUSE

Estimation of the excess cost of health and medical care due to alcoholism and alcohol abuse included consideration of hospital services, physician services, drugs and nursing services. The estimate for excess costs of providing these services to alcoholics and alcohol abusers ranged from \$8.8 million to \$17.9 million. An average of the low and high estimate, or \$13.3 million, will be adopted as the working value of excess cost for health and medical care. An itemized summary of low, high, and average estimates for service category considered is summarized in Table VI-20.

B. NON-INSTITUTIONAL SERVICES--COSTS

Non-institutional services are those services which, while necessary to support the delivery of health and social services, are outside health care facilities. Within this section, a discussion of the administration of health insurance policies and research and construction costs will be presented as representative of alcohol-related non-institutional services.

1. HEALTH INSURANCE

An effort was made to obtain some estimate of administrative costs for the disposition and handling of alcohol-related claims. Very little information was released by major health insurance carriers. This lack of data results in a considerable underestimation of total costs of alcoholism and alcohol abuse on the health and social service system.

A 1976 publication from the Division of Insurance, Alaska Department of Commerce and Economic Development, reflects that \$4.6 million represents the approximate insurance administrative costs for Alaska-based insurance companies

TABLE VI-20

SUMMARY

ESTIMATED INSTITUTIONAL EXCESS COSTS OF HEALTH AND MEDICAL CARE
ATTRIBUTABLE TO ALCOHOLISM AND ALCOHOL ABUSE

	Low Estimate	High Estimate	Average (\$ millions)
Hospitals--Acute Care			
Non-Native--Private	1,608,540	2,527,760	2.069
Public Health	960,351	1,544,373	1.252
Military	297,918	476,280	.387
API	<u>600,408</u>	<u>600,408</u>	<u>.600</u>
Sub-total	3,467,217	5,148,821	4.307
Physician's Services			
Non-Native and Military	3,633,419	10,500,000	7.067
Public Health Service	<u>79,320</u>	<u>582,360</u>	<u>.321</u>
Sub-total	3,712,739	11,082,360	7.398
Drug and Drug Sundries	372,000	418,000	.395
Nursing Services	1,212,380	1,212,380	1.212
Institutional Health Care Costs Attributable to Alcoholism and Alco- hol Abuse	\$8,764,336	\$17,861,561	\$13.312

for 1972. The percentage of these administrative costs which are related was unable to be determined. However, some percentage of alcohol-related costs must be considered when estimating overall costs of alcohol. (See Table VI-21.)

The providers of health insurance for which some measure of alcohol-related administrative costs for 1975 were requested are listed below:

Blue Cross

Blue Cross Affiliated Insurance Providers:

--Medicare

--Armed Services Champus

--Federal Employees Program

Teamsters--Alaska

The estimated health care administrative costs of these providers are presented in Table VI-22, below.

The administrative costs were estimated by Accounting Office of Blue Cross and must be assumed to be considerable underestimations.

Workmen's Compensation. It is impossible to determine actual payments made for alcohol-related occupational injuries. In fact, state laws preclude eligibility for payment if the injury was due solely to intoxication. However, based on estimation procedures for determination of lost production due to illness, disability, and premature death attributable to alcoholism and alcohol abuse, an estimated cost determined in Part III (Lost Production) is again presented here.

Most of the labor force, except military personnel, is insured by three main plans: (1) Workmen's Compensation, (2) Federal Employees Compensation, and, (3) Northwest Marine Welfare. Collectively, these plans cover a total of 162,286 workers--over 95% of the Alaskan Labor Force. The three plans accounted for a total of \$37 million in providing disability and death benefits for slightly more than 162,000 workers.

TABLE VI-21

WRITERS OF GROUP ACCIDENT AND HEALTH INSURANCE, 1972

Type of Insurer	No. of Companies	Premium Income					Total Dollars	Benefits Paid	Admin- istrative Costs	Percent of Total
		Less than \$10,000	\$10,000- \$99,000	\$100,000- \$499,999	\$500,000- \$999,999	Over \$1,000,000				
Life Insurers	82	47	18	6	7	4	\$16,154,104	\$12,300,000	\$3,854,104	23.8
Hospital & Medical Service Corporations	2	0	1	0	0	1	\$ 8,454,561	\$ 7,770,000	\$ 684,561	8.1
Property & Casualty	<u>30</u>	<u>23</u>	<u>6</u>	<u>1</u>	<u>0</u>	<u>0</u>	<u>\$ 551,355</u>	<u>\$ 449,000</u>	<u>\$ 102,355</u>	<u>18.6</u>
	114	70	25	7	7	5	\$25,160,020	\$20,519,000	\$4,541,020	18.4

Source: Alaska Department of Commerce and Economic Development, Division of Insurance, May 1976.

TABLE VI-22
HEALTH CARE ADMINISTRATIVE COST
(excluding Dental) ALASKA 1975

Provider	Administrative Costs	Number of Subscribers	Administration
Blue Cross*			
Gross Premium-			
\$18,082,052			
Claims Incurred-			
\$15,638,573	\$2,443,479	28,745 (64,688 covered)	13.5%
Teamsters**	Est. 1,225,000	Est. 14,500 (Est. 31,900 covered)	Est. 13.5%
Medicare***			
(Unit administra-			
tive costs only			
available)			
\$13.94/unit x 6,343			
claims	88,421		
Hospital and			
Nursing--\$2.44/unit			
x 24,000 claims	58,560		
Physician and Drugs			
Armed Services			
Champus*			
Claims incurred--	8,600	25,000	1%
\$858,415		(Est. 55,000 covered)	
Federal Employees			
Program*			
Claims incurred--			
\$2,805,018	28,000	4,716	1%
		Est. 10,300 covered)	
Total	\$ 3,852,065		

*Information on Blue Cross, Champus, and Federal Employees Program came from Blue Cross office, 15700 Dayton Ave. N., Seattle, WN 98111; James F. Harden, Accounting Manager (1% Administration costs very questionable.)

**Very little information was released from the Teamsters (Juneau, AK office, other than size of membership.

***Cost analysis on Medicare came from Medicare Washington Physicians' Service, 220 West Harrison, Seattle, Washington 98119.

Based on estimation procedures outlined in Part III, it was estimated that \$4.3 million was the approximate excess payments due to alcohol abuse; of this amount, approximately \$.13 million would be attributable to alcohol-related administrative costs, based on the given administrative allocations.

2. RESEARCH AND TRAINING

In 1975 there was only one major research project funded within the State of Alaska. That project was organized by the Center for Alcohol and Addiction Studies at the University of Alaska. The funding for the project amounted to \$47,229. In addition, one official training project was funded (\$84,371), and conducted by the same agency (see Part VIII, and Volume III, for more information).

SUMMARY ECONOMIC COSTS OF NON-INSTITUTIONAL SERVICES

The consideration of non-institutional service costs was included for general information. For the most part, the data available are insufficient for meaningful inclusion in the overall economic costs of health care attributable to alcoholism. Economic costs that were able to be determined were included in other parts of this Volume, and thus are part of the total estimated economic cost of alcoholism and alcohol abuse.

PART VII. ECONOMIC COSTS OF SOCIAL SERVICES AND PUBLIC ASSISTANCE
DUE TO ALCOHOLISM AND ALCOHOL ABUSE

STATEMENT OF THE PROBLEM

Individual, family and community social problems can be increased as a result of alcohol abuse and alcoholism. The alcoholic may involve his or her family in a series of adverse situations such as crime, illness, accidents, lowered income, and premature death. Alcohol-related family problems may include interpersonal friction, divorce, child care, and child abuse and neglect. Thus, the extent to which the fiscal and economic costs of social services and assistance payments are occasioned by alcoholism and alcohol abuse needs examination.

METHODOLOGY

In estimating the costs of public assistance and selected social services due to alcoholism and alcohol abuse, attention will be focused on public aid cases and state social worker caseloads. Estimates of the percentage of alcohol involvement, and costs for program service and social services, will be presented for fiscal year ending July, 1976.

RESULTS

The estimated costs due to alcoholism for public assistance and social services will be presented by categories. For each category of service, the estimated costs will be briefly outlined and the preliminary findings stated. The aggregated costs will then be summarized.

A. PUBLIC ASSISTANCE--COSTS

A report prepared by the Division of Public Assistance as a result of a special request for this report, provided conservative indicators of the

percentage of alcohol-related cases passing through that department. Alcoholism is believed to significantly contribute to such eligibility factors as income below a certain level, and families with one parent absent or incapacitated.

Cost estimates are provided for the following categories of service: Aid to Families With Dependent Children, Aid to the Disabled, and Medicaid.

1. AID TO FAMILIES WITH DEPENDENT CHILDREN

Information provided by the Division of Public Assistance revealed that an estimated 15% of AFDC cases were alcohol-related. In these cases, the incapacity or absence of a parent was judged to be primarily attributable to alcoholism/alcohol abuse. AFDC assistance payments are presented in Table VII-1, illustrating an estimated cost of alcohol-related cases in this category to be \$1,805,906.00

TABLE VII-1

AID TO FAMILIES WITH DEPENDENT CHILDREN--ASSISTANCE PAYMENTS 1976

TOTAL Average # of AFDC Cases per Month	Percent Estimated Alcohol- Related	Average # of Alcohol- Related Cases per Month	Average Cost per Case per Month	Cost of all Alcohol-Related Cases	
				Per Month	Per Year
3,682	15%	544	\$276.64	\$150,492	\$1,805,906

Source: Division of Public Assistance, Dept. of Health and Social Services.

2. AID TO THE DISABLED

The estimated cost of assistance payments for alcohol-related disabilities is presented in Table VII-2. The cost is based on an estimate by the Division of Public Assistance, that 20% of the case load was due to

alcoholism and alcohol abuse. As shown in the table, the total estimated cost is \$324,791.

TABLE VII -2
AID TO THE DISABLED-ASSISTANCE
PAYMENTS, 1976

TOTAL Average # of AD Cases Per Month	Percent Estimated Alcohol- Related	Average # of Alcohol- Related Cases Per Month	Average Cost Per Case Per Month	Cost of All Alcohol-Related Cases	
				Per Month	Per Year
1,407	20%	281	\$96.32	\$27,066	\$324,791

Source: Division of Public Assistance, Dept of Health and Social Services.

3. MEDICAID

Health care services for individuals who receive public assistance are paid for by the Medicaid Program. Twenty percent of Medicaid expenditures were considered to be alcohol-related, since eligibility for Medicaid is based upon eligibility for cash assistance programs. A summation of these costs is shown in Table VII -3.

TABLE VII -3
MEDICAID PAYMENTS RELATED
TO ALCOHOL, 1976

Medicaid Cost for AD's Per Year	Estimated Percent Alcohol- Related AD Cases	Medicaid Alcohol- Related Costs for AD's Per Year	Medicaid Cost for AFDC Per Year	Estimated Percent Alcohol- Related AFDC Cases	Medicaid Alcohol- Related Costs for AFDC Cases Per Year	TOTAL
						Medicaid Costs for Alcohol- Related AFDC Cases Per Year
\$3,099,383	20%	\$619,877	\$2,249,379	15%	\$337,407	\$957,284

Source: Division of Public Assistance, Dept. of Health and Social Services.

SUMMARY

PUBLIC ASSISTANCE COSTS

The following Table summarizes estimated costs due to alcoholism for the major Alaskan public assistance categories.

TABLE VII-4

PUBLIC ASSISTANCE AGGREGATED DIRECT COSTS ATTRIBUTABLE
TO ALCOHOLISM AND ALCOHOL ABUSE, 1976

Category	Cost of All Alcohol-Related Cases per Year
AFDC	\$ 1,805,906
AD	324,791
Medicaid	<u>957,284</u>
Total Alcohol- Related Costs	\$ 3,087,981

These types of expenditures or transfer payments are often counted as economic costs. Although they do represent a fiscal expenditure they do not technically constitute an economic cost due to alcoholism and alcohol abuse. In a social and political sense, they represent a re-distribution of part of the burden of reduced income due to alcoholism (the proper economic measure of economic cost here) from the alcoholic and family to the taxpayer.

B. SOCIAL SERVICES

Unlike transfer payments, which are a redistribution of purchasing power, expenditures for social services attributable to alcoholism and alcohol abuse are indeed economic costs. Social services for alcoholism

and alcohol abuse require economic resources for their production. These resources could have produced other output which must be foregone because of alcoholism and alcohol abuse.

There is limited information available for estimating alcohol-related costs of Alaska's program services and social services. As was true for public assistance, the information used for the cost estimates was provided as a special request for this project. Such information is not routinely maintained. The major categorical program services for which some estimation of alcohol-related costs can be determined are as follows: foster care, institutional care for children, day care, protective services, homemakers and social work. The costs estimated in this section pertain to actual expenditures by the State of Alaska. Information regarding the provision of social services attributable to alcoholism, by other non-state agencies, was simply not available.

In combination, expenditures for the above categories of social services in FY 1976 ranged from 10 to 50 percent of the total budgeted amounts. The percentage of expenditures attributable to alcohol-related problems was derived from the analysis of actual cases studied and appraised (see footnote, Table VII-5). The total alcohol-related expenditures amounted to just under \$3.5 million for these services, as presented in Table VII-5, by source of funds.

SUMMARY

The total estimated economic cost for various forms of social services attributable to alcoholism and alcohol abuse amounted to about \$3.45 million for fiscal year 1976. In addition, \$3.1 million was expended in the form of assistance payments due to alcoholism and alcohol abuse. This information is summarized below in Table VII -6.

TABLE VII-5

PROGRAM SERVICES AND SOCIAL SERVICES COSTS FOR ALCOHOL-RELATED CASES,^a FY76
(thousands of dollars)

Source of Funds	44% ^b Foster Care	44% Institutional Care for Children	44% Day Care	44% Protective Services	10% Homemakers	50% Social Work	Total
GF ^c	263.0	612.0	40.2	9.5			924.7
GFM ^d	143.7	141.7	64.9	83.6	10.0	317.0	760.9
Fed.	193.3	183.7	130.4	3.3	17.8	1021.5	1550.0
Other	<u>60.0</u>	<u> </u>	<u>64.3</u>	<u> </u>	<u>12.3</u>	<u>77.5</u>	<u>214.0</u>
Total	660.0	937.4	299.8	96.4	40.1	1416.0	3449.6

^aPercentages are from the analysis of actual case load study as appraised by Connie Hansen, Social Services.

^bThe percent attributable to alcohol-related problems is based upon a weighted average, determined by a survey of actual cases reported by social workers which showed child neglect to be 47% alcohol-related and child abuse to be 32% alcohol-related. This resultant is 44%.

^cState General Fund

^dState General Fund Match

TABLE VII-6

SUMMARY
ECONOMIC COST OF SOCIAL SERVICES AND TRANSFER PAYMENTS
ATTRIBUTABLE TO ALCOHOLISM AND ALCOHOL ABUSE
ALASKA, 1976

Category	Amount (\$-millions)
Social Services	3.450
Transfer Payments Public Assistance (AFDC, AD, Medicaid)	3.088

PART VIII. ECONOMIC COSTS OF DIRECT ALCOHOLISM AND ALCOHOL ABUSE
PROGRAMS

STATEMENT OF THE PROBLEM

There are a number of organizations in Alaska whose influence on alcoholism programming and alcohol-related activities in the state is considerable. Some are devoted entirely to alcohol-related matters (e.g., the State Office of Alcoholism), others to drug as well as alcohol concerns (e.g., the Alaska Native Commission on Alcoholism and Drug Abuse), and yet others to issues and concerns which, on the surface, appear to have little or nothing to do with alcoholism or the problems it generates (e.g., the Veterans Administration). Due to the breadth and compass of their concerns, however, each of these organizations comes in one way or another face to face with the problems of alcoholism and alcohol abuse, and is compelled to formally address them.

BACKGROUND

Eleven such organizations are of particular importance to any assessment of Alaska's alcoholism programs. Through their funding activities, through their formal and informal relations with communities and regional health corporations, and through their broad attempts to mobilize human and financial resources towards the amelioration of a wide range of social problems, these organizations bear a good deal of the burden of providing direct services for alcoholism and alcohol abuse--planning, prevention, training, treatment, rehabilitation, etc. As such, any attempt to determine or estimate the direct financial costs of alcoholism and alcohol abuse to the state must necessarily include the costs of their activities.

As mentioned, eleven such organizations have been identified as particularly important to any assessment of statewide direct alcoholism services costs. Though involved in a spectrum of organizational activities, these organizations all share two common attributes which render them particularly important for such a cost assessment:

- 1) each contains an alcoholism component as part of its overall organizational purpose; and
- 2) each exerts an influence throughout Alaska by virtue of that purpose.

The eleven organizations identified as falling within this category (and hereafter referred to as "statewide organizations") are as follows:

Alaska Area Native Health Service (AANHS)
Alaska Federation of Natives (AFN)
Alaska Labor & Management Employees Association, Inc. (ALMEA)
Alaska Native Commission on Alcoholism and Drug Abuse (ANCADA)
Bureau of Indian Affairs (BIA)
Center For Alcoholism and Addiction Studies, University of Alaska (CAAS)
National Council on Alcoholism, Alaska Region (NCA-AR)
Office of Vocational Rehabilitation (OVR)
Rural Alaska Community Action Program (RurALCAP)
State Office of Alcoholism (SOA)
Veterans Administration (VA).

In the discussion following, each of these statewide organizations will be referred to by the abbreviations, above, in parentheses.

METHODOLOGY

Financial information regarding the funding sources and amounts, and expenditures, of the identified statewide organizations was obtained via per-

sonal interviews and completion of a multipurpose survey instrument. Additionally, subsequent contact was maintained with all of the organizations through telephone and letters, to validate and corroborate the survey responses submitted. Copies of the survey itself, as well as a total examination of the alcoholism services delivery system in the state, may be found in Volume III.

Due to great turnover in many of the organizations' staff, however, and to the fact that financial information for the period under review was often sketchy and irretrievable, much of the data assembled is partial or of an estimate nature.

In sum, the raw financial data which has been grouped and clustered in the following pages can only be taken as a good indication of the alcohol-related costs incurred during FY75 by these eleven organizations. The costs specified are based on expenditures solely for alcohol-related activities. While the difficulties in collecting the data preclude any specification of "administrative costs" or "costs of salaries", the figures provided can be taken as fairly reliable estimates of the cost-items they represent.

RESULTS

A. TOTAL DIRECT COSTS FOR STATEWIDE ORGANIZATIONS

Direct expenditures for alcoholism services by the eleven organizations during FY75 totalled approximately \$3,693,665. This total for the organizations does not include cost expenditures for anything else except alcoholism, nor does it include costs which may be described as "alcohol-related" (e.g., staff time and/or medical costs from other, non-alcohol-related branches of

an organization, etc.). The total also does not include any cost expenditures from two of the organizations--the Alaska Area Native Health Service and the Alaska Bureau of Indian Affairs--as such information was not obtainable at the time.

Actual reported expenditures for each of the selected statewide organizations are presented in Table VIII-1, below:

TABLE VIII-1

DIRECT COSTS FOR STATEWIDE ALCOHOLISM AND ALCOHOL ABUSE SERVICES
BY STATEWIDE ORGANIZATION (1975)

Organization	Expenditure (FY75)	Percent of State Program Total
SOA	\$ 2,107,688	53.9 %
ANCADA	740,500	19.0 %
NCA-AR	458,408	11.7 %
CAAS	188,067	4.8 %
RurALCAP	130,659	3.3 %
OVR	123,070	3.1 %
AFN	87,217	2.2 %
ALMEA	55,276	1.4 %
VA	16,500	0.4 %
Total:	\$ 3,907,385	99.8 %

The above total of \$3,907,385 includes, however, funding from SOA to ANCADA, CAAS, and NCA-AR in the amount of \$213,720. If this amount is subtracted, a non-redundant total estimated direct expenditure of \$3,693,665 is arrived at for the nine reporting organizations, during Fiscal Year 1975.

B. TOTAL DIRECT COSTS BY PROGRAM COMPONENTS

Another way of breaking down the overall alcoholism service expenditures of the eleven identified statewide organizations is in terms of the various kinds of overall program components. Again working from an approximate total cost expenditure of \$3,693,665, it has been found that eight alcoholism and alcohol-abuse components accounted for the costs shown in Table VIII-2, below:

TABLE VIII-2
TOTAL DIRECT ALCOHOLISM AND ALCOHOL ABUSE SERVICE
COST BY COMPONENT, STATEWIDE, 1975

Component	Amount (% of total dollars)
PREVENTION:	\$ 1,203,337 (32%)
Education & Information	\$ 770,851 (20%)
Alternatives To Drinking	441,667 (11%)
Driver Safety	20,819 (1%)
TREATMENT/REHABILITATION:	2,132,057 (55%)
Rehabilitation Counseling	139,570 (4%)
Outreach Counseling	130,659 (3%)
Local Programs	1,861,828 (48%)
TRAINING:	230,821 (6%)
RESEARCH:	47,229 (1%)
ADMINISTRATION:	286,039 (7%)
Technical Assistance and Coordination	40,179 (1%)
Statewide Program Funding (including administrative costs)	245,860 (6%)
	\$ 3,899,483* (101%)

*Missing from this figure are two cost expenditure items totalling \$7,902. If these are added into the total shown above, and the SOA costs for ANCADA, CAAS, and NCA-AR subtracted (total of \$213,720), the overall cost expenditure total of \$3,693,665 is reached. It bears repeating, again, that cost expenditure information for AANHA and BIA are not included in the above table.

C. TOTAL DIRECT COSTS BY FUNDING SOURCE

Yet one more way of looking at direct alcoholism and alcohol abuse costs for the selected eleven statewide organizations is to break down the total cost by the funding sources for the monies expended (i.e., in terms of the original granting agency). Since information for this portion of the cost analysis was derived from--and based on--actual amounts budgeted, a somewhat different total cost figure was used--\$3,672,247, as opposed to the earlier cost total shown of \$3,693,665. The difference, however, is not large enough for concern, as in all instances (of cost assessment) the expenditure figures are estimates.

Itemized by funding source, direct costs for the nine reporting* organizations are presented in Table VIII-3.

SUMMARY

The total estimated direct cost of alcoholism and alcohol abuse services provided by the principal statewide organizations during FY 1975 was approximately \$3.7 million, with the most reliable figure for that cost being approximately \$3,693,665. Since two of the eleven identified statewide organizations--the Alaska Area Native Health Service and the Alaska Bureau of Indian Affairs--were not able to supply financial information for direct services, the actual total was somewhat higher. This estimate, nevertheless, is based on information supplied by the organizations themselves, and therefore stands as probably the most accurate assessment possible of their direct alcohol services costs for FY 1975.

Two factors are important in interpreting this estimate (\$3.7 million) however. First, it should be emphasized that costs only for direct alcohol services have been tabulated and reported; if indirect alcohol-related costs

*Figures shown are only for nine of the eleven statewide organizations, as information for AANHS and for BIA was unobtainable.

TABLE VIII-3

TOTAL DIRECT COST FOR ALCOHOLISM AND ALCOHOL ABUSE SERVICES
BY FUNDING SOURCE, STATEWIDE, 1975

Category	Funding Source	Amount	Percentage of Total
FEDERAL:		\$3,015,646	82.1 %
	NIAAA (\$1,749,285:47.6%)		
	other federal (\$1,245,345:33.9%)		
	VA (\$21,016:0.6%)		
STATE:		439,008	11.9 %
	State General Funds (\$380,621:10.3%)		
	other state monies (\$58,387:0.6%)		
LOCAL:		18,200	0.5 %
PRIVATE:		9,710	0.3 %
OTHER:		189,683	5.2 %
	FY74 grants (\$66,613:1.8%)		
	vocational rehabilitation monies (mixed, federal and state: \$123,070:3.4%)		
Total Costs:		\$3,672,247	100.0 %

such as shared staff or administrative expenses were to be included, the total estimated cost to the organizations would be much greater. Second, it should also be stressed that a considerable amount of growth and expansion of services has occurred among the identified statewide organizations since FY 1975. Representative of this growth are the State Office of Alcoholism, which increased its expenditures from \$2,107,688 in FY75 to \$3,020,128 in FY76 (+43%), ALMEA, which has increased its direct alcoholism expenditures from \$55,276 in FY75 to \$200,000 in FY76 (+262%), and the Alaska Veterans Administration, which in the form of third-party payments has increased its alcoholism expenditures from \$16,500 in FY75 to an estimated \$1,334,700 during FY76 (+12,000%). Financial information for FY77, while still incomplete, indicates that the trend is steadily upward.

PART IX. IMPACT OF SALE AND CONSUMPTION OF BEVERAGE ALCOHOL, AND
ALCOHOLISM AND ALCOHOL ABUSE, ON STATE GOVERNMENT REVENUES
AND EXPENDITURES

STATEMENT OF PROBLEM

This part will examine revenues and expenditures of state government which are attributable to the sale and consumption of beverage alcohol. This examination represents a much more limited perspective of the economic impact of beverage alcohol sale and consumption than the overall economic analysis of social costs and benefits presented in Parts II through VIII. Each of the revenue and expenditure items to be discussed in this part have already been included as an economic cost or benefit in one of the previous Parts. More specifically, and for example, state government revenue from the excise tax on beverage alcohol will be presented in this Part. However, the dollar value of this revenue for the state government has already been considered as part of the economic benefit in the calculation of the value added to state production for the beverage alcohol industry (Part II). Similarly, the economic cost of state government funded services required due to alcoholism and alcohol abuse has, in total, already been accounted for in many of the previous Parts (e.g., criminal justice system, social services, direct alcohol services).

Neither the redistribution of resources from the private to the public sector (in the form of taxes), nor the redistribution from the public to the private sector (in the form of transfer payments), represents additional economic costs or benefits. In other words, no dollar amount of revenues or expenditures are to be added or subtracted, to or

from, the economic costs and benefits previously presented. It is important that state government revenues and expenditures attributable to the sale and consumption of beverage alcohol be distinguished from the economic analysis of social costs and benefits. The impact of beverage alcohol sale and consumption on the state treasury may be useful information for state officials and others, but it must not be confused with the overall economic impact presented as economic costs and benefits.

METHODOLOGY

Information regarding expenditures by nature of activity and source of funds was obtained by a variety of methods: (1) responses to a survey instrument distributed to all state government agencies; (2) interviews with budget officers and program managers of selected state agencies; (3) review of official budget documents for all state agencies; and, (4) estimation of expenditures based on data obtained for other parts of the study.

The information obtained will be presented in tabular form, delineating total expenditures and revenues by source of funds, which are attributable to the sale and consumption of beverage alcohol, and alcoholism and alcohol abuse.

RESULTS

DIRECT STATE GOVERNMENT REVENUE

The state regulation of sale and consumption of beverage alcohol involves licensing and taxation, which generate revenue for the state (See Volume II), in addition to associated corporation and personal income taxes.

The gross and net revenues from the sale of beverage alcohol, as able to be determined by the Department of Revenue, are provided below in