

CHAPTER 4

CATEGORICAL HEALTH STATUS ASSESSMENT

INTRODUCTION

As presented in the discussion of Health Problem Analysis in Chapter 3, this chapter examines individually each of the prevailing health status problems in the state of Alaska in order to 1) establish a context for an assessment of the relative significance of the problem and 2) to identify those risk factors whose presence increases the likelihood of the disease. Health system responses are listed for each problem including responses that suggested a change in lifestyle or environment as well as services for treating problems after they occur. Likewise, an attempt has been made to enumerate those health services relating to those problems that are currently in place. Taken together with the investigation undertaken in Chapter 3, it will then be possible to meaningfully prioritize these problems.

ACCIDENTS

Mortality: Accidental injury continues to be a major health status problem in the state. Accidents were the leading cause of statewide mortality in 1980; the leading cause of death for all age groups between 1 and 44; and the leading cause of mortality for males, Native and non-Native populations. The age-adjusted rate in 1980 was 2.2 times the U.S. rate (Figures 3-2, 3-3, 3-4, 3-35). The major cause of accident mortality in 1981 and the leading cause of mortality over the period 1972-1981 has been motor vehicle accidents. The 1981 rate of 22.5 per 100,000 population was 6.6% less than the rate in 1972 and was 11.1% less than the average rate over the ten years of 25.3. However, the ten year average was 7.7% more than the average U.S. rate for the ten years of 23.5. The second major cause of accident mortality in 1981 and the second leading cause over the ten years has been water-related accidents. The 1981 rate of 16.6 was down 28.1% from 1972 and was 22.8% below the ten year average rate of 21.5. The ten year average rate in Alaska was over 6 times the U.S. average rate of 3.4. The mortality rate for all accidents in 1981 of 89.3 was down 15.4% from the 1972 rate of 105.6. Similarly, the 1981 rate was 12.6% less than the ten year average rate (Figure 4-1).

Figure 4-1

ACCIDENTAL DEATH RATES* BY MAJOR CAUSES, ALASKA AND UNITED STATES, 1970-1981

DEATH RATE BY YEAR

CAUSE	1972		1973		1974		1975		1976		1977		1978		1979		1980		1981	
	AK	US	AK	US	AK	US	AK	US	AK	US	AK	US								
Motor Vehicle	24.1	27.0	20.9	26.5	20.9	22.0	31.1	21.5	27.8	21.9	32.2	22.9	30.0	24.0	21.0	23.6	22.1	23.2	22.5	22.2
Aircraft	10.6	0.8	13.3	0.8	14.8	0.8	17.7	0.7	14.6	0.7	10.2	0.8	25.8	0.9	13.0	N/A	11.2	N/A	16.1	N/A
Water Related	23.1	3.8	20.6	4.2	23.0	3.8	23.0	3.8	19.5	3.2	16.5	3.4	24.6	3.4	25.0	3.0	22.9	3.1	16.6	2.6
Fire	10.9	3.2	5.8	3.1	10.8	2.9	5.7	2.8	5.6	3.0	5.3	2.9	6.0	2.8	6.5	2.6	5.7	2.4	4.0	2.1
Falls	5.9	8.0	5.5	7.9	6.4	7.7	3.1	7.0	5.6	6.6	5.8	6.4	4.0	6.3	2.0	5.9	4.7	5.4	3.6	5.1
All Other	30.9	12.6	41.2	12.7	43.0	12.3	28.7	12.6	31.7	11.5	17.7	11.3	23.3	11.0	21.5	11.9	30.1	12.1	26.5	11.2
OVERALL	105.6	55.4	107.3	55.2	118.9	49.5	109.4	48.4	104.7	46.9	87.6	47.7	113.6	48.4	88.9	47.0	96.8	46.2	89.3	43.2

*Rate = Deaths per 100,000 population

Sources: Office of Information Systems, Department of Health and Social Services. Computer printouts for accidental deaths by HSA subareas, 1970-1981, Juneau, 1982.

Bureau of the Census, U.S. Department of Commerce, Statistical Abstract of the United States, U.S. Government Printing Office, Washington, D.C. 1975, 1977, 1978.

Note: U.S. figures for 1979, 1980, and 1981 are National Safety Council estimates and U.S. aircraft accidents are included in the "All Other" category.

Acute Care/Outpatient Utilization: Among AANHSA ambulatory care patients, accidents and injuries were the leading cause of total visits at 27,103 visits in FY 1980, up from 24,384 in FY 1979 and 24,311 in FY 1978. From diagnostic information provided by all reporting facilities in the 1983 Annual Hospital Survey, accidents and injuries were the second leading cause of discharges - 12.0% of total discharges, with a morbidity rate of 179.6 per 100,000 population, as compared to the U.S. rate of 174.8 in 1978. In terms of patient days, accidents and injuries were the leading cause, accounting for 14.9% of all patient days (Figures 3-46, 3-47, 3-48).

Alcohol: The average Alaskan adult spent \$1734 per year on alcohol in 1981. Alcohol use is an apparent major contributing factor to the accident statistics. As indicated in Figure 4-2, over a four year period between 1979 and 1982, there were a total of 262 fatalities that could be directly related to the use of alcoholic beverages. This figure represented 66.7% of the total fatalities, well above the national average of 50%. It was estimated by the State Office of Alcoholism and Drug Abuse that the injury and property damage from traffic accidents with alcohol involvement in 1980 in Alaska amounted to \$22,532,000. Additional high risk insurance paid by DWI offenders in any given recent year amounted to approximately \$15,000,000.¹ This table also shows that young people (age 20 and below) were involved in 24% of the total alcohol related fatalities, while representing only 9.1% of the licensed drivers.

Figure 4-2

Alcohol Involvement in Fatal Accidents in Alaska						
	Total Fatalities	Non-alcohol Fatalities	Alcohol Fatalities	% Alcohol Involvement	Youth Alcohol	% Youth/Alcohol Involvement
1979	91	22	69	75.8%	23	33.3%
1980	95	31	64	67.4	8	12.5
1981	100	24	76	76.0	23	30.3
1982	107	54	53	49.5	9	17.0
Total	393	131	262	66.7	63	24.0

Source: Highway Safety Planning Agency, Department of Public Safety, Highway Safety Plan, 1984, p. 28.

Alcohol involvement represented an average of 29% of all contributing circumstances to motor vehicle fatalities from 1974-1979. In 1979 this index was 28%, not so different from the six year average or the index in 1974 which was 26%. Interestingly, alcohol involvement represented only 15% of all contributing circumstances to injury accidents over the same period. In this instance, the 1979 index of 12% is less than both the six year average and the 1974 index of 17% (Figure 4-3).

Figure 4-3

Alcohol Involvement
As A Contributing Circumstance(1) to
Motor Vehicle Fatalities & Injuries
In Alaska, 1974-1979

		1974	1975	1976	1977	1978	1979
Fatal Accidents	#	37	34	86	104	76	64
	%	26	24	35	36	26	28
Injury Accidents	#	662	489	1396	1445	1337	1311
	%	17	13	15	18	16	12

Note: (1) Of the ten "contributing circumstances" displayed in the original data, up to four "contributing circumstances" could be assigned to any one accident

(2) Percentage figures are based on the total number of contributing circumstances identified for each year.

Source: Highway Safety Planning Agency, Dept. of Public Safety, Highway Safety Plan, 1981

The statewide consumption of alcohol, as expressed in gallons of absolute alcohol for persons 19 years of age and over, has decreased slightly from 4.64 to 4.58 gallons per capita from 1975 to 1982, after dropping to a low of 3.72 gallons in 1979. It is clear that the management of this problem does not yet seem to be within grasp despite efforts to control the sale of alcohol in the rural areas of the state. In 1979, Alaska's sales (or "apparent consumption") was 30.1% greater than the U.S. rate (Figure 3-10).

Occupational Accidents: Occupational related injury is a significant part of the accident picture. The highest incidence of occupational injury and illness was observed in the lumber and wood products industry in 1981 at 26.8 cases per 100 F.T.E., compared to 10.0 for all private sector workers. However, this was down from the 1980 rate for that industry which was 32.5. The mining industry accounted for the greatest total work loss workdays in 1981 at 162.3 per 100 F.T.E. workers. The 1980 rate for the mining industry had been 215.5, so there was a decrease. There was a decrease in total lost workdays for the total private sector as well, going from 88.6 in 1980 to 81.5 in 1981. Given the importance of the seafood industry in the coastal areas of the state, it is of interest to note that the fresh/frozen packaged fish and seafood industry had an accident rate in 1981 (24.6 per 100 F.T.E.) which was only slightly less than lumber and wood products, and oil and gas field services (24.9). An effort was made to identify the incidence rate for the fishing industry; however, it was discovered that due to small numbers of units surveyed and biases that may exist as an artifact of reporting, the rates for the fishing industry were misrepresented (Figures 4-4, 4-5, 4-6).

The occupational injury and illness rate for all industries has shown a decline from 1972 to 1981, 14.4 to 10.0. There was a marginal increase from 1978 to 1981, 10.0 to 10.4, but the rate in 1981 was back down to 10.0. The incidence rate of five of the ten highest incidence industries decreased from 1980 to 1981 (Figures 4-5, 4-6).

Other interesting information obtained from the Department of Labor's Supplementary Data System in 1981 include the following:

back injuries accounted for the largest proportion of injuries for men and women (25.1%);

Sprains and strains accounted for the largest category of nature of injuries for men and women (42.3%);

working surfaces were the direct cause for the largest proportion of all injuries for men and women (20.1%);

overexertion was identified as the reason for the largest proportion of injuries for men and women (25.5%).

(Figures 4-7, 4-8, 4-9, 4-10, 4-11).

Figure 4-4

Incidence Rates of Recordable Occupational Injuries and Illnesses
by Type and Industry, Alaska 1981

Industry	SIC or Series	1981 Annual Average Employment	Incidence Rates						
			Total Cases	Total Lost Workday Cases	Cases Involving Days Away From Work	Days Away From Work	Days of Restricted Work Activity	Total Lost Workdays	Cases Without Lost Workdays
TOTAL PRIVATE AND PUBLIC SECTOR ...		159,982	9.2	4.3	4.2	69.5	4.2	73.7	4.9
TOTAL PRIVATE SECTOR		121,677	10.0	4.8	4.6	76.4	5.1	81.5	5.2
MINING		7,925	15.4	6.4	6.3	161.6	0.7	162.3	9.0
Oil and Gas Extraction.....	13	7,328	15.8	6.3	6.2	160.4	0.5	160.9	9.5
Petroleum & Gas Production.....	131	*	7.3	1.2	1.2	12.6	-	12.6	6.1
Oil & Gas Field Services.....	138	*	24.9	11.7	11.5	317.9	1.0	318.9	13.1
CONSTRUCTION		12,467	17.2	7.8	7.4	126.6	8.1	134.7	9.3
General Building Contractors.....	15	2,733	19.8	10.8	9.8	152.7	28.3	181.0	8.9
Residential Buildings.....	152	1,394	15.6	9.7	9.6	98.6	44.6	143.2	5.8
Nonresidential Buildings.....	154	1,339	23.7	12.2	10.3	212.1	12.0	224.1	11.4
Heavy Construction Contractors.....	16	4,213	15.1	6.6	6.2	123.3	3.4	126.7	8.5
Highway and Street Construction... 161		1,390	17.8	8.4	8.1	198.3	2.1	200.4	9.3
Heavy Construction, Except Hwy.... 162		2,823	14.0	5.7	5.3	90.8	4.0	94.7	8.2
Special Trade Contractors.....	17	5,521	17.8	7.4	7.3	116.4	2.4	118.9	10.3
Plumbing, Heating & Air Condit.... 171		994	18.8	7.4	7.4	71.9	-	71.9	11.3
Electrical Work.....	173	1,435	15.4	6.3	6.1	80.6	1.9	82.4	9.0
Misc. Special Trade Contractors... 179		1,877	21.6	8.6	8.5	215.6	5.5	221.1	12.8
MANUFACTURING		12,810	19.1	9.6	9.0	123.3	9.2	132.4	9.4
Food and Kindred Products.....	20	6,871	22.2	9.0	8.2	88.5	12.3	100.9	13.2
Misc. Food Preps. & Kindred Prod.. 209		6,596	22.5	8.9	8.1	89.6	11.6	101.2	13.6
Canned & Cured Fish & Seafoods.. 2091		3,023	19.9	6.8	6.1	45.8	6.7	52.5	13.0
Fresh/Froz. Pkgd. Fish & Seafds.. 2092		3,573	24.6	10.4	9.6	122.9	15.3	138.3	14.1
Lumber & Wood Prod. except Furniture 24		2,031	26.8	17.6	17.2	242.1	7.5	249.6	8.9
Logging Camps & Contractors..... 241		1,137	27.2	16.9	16.4	229.5	4.5	234.0	10.1
Printing, Publishing & Allied Ind... 27		1,127	3.1	2.0	1.9	19.7	2.6	22.4	1.1
TRANSPORTATION AND PUBLIC UTILITIES ... 17,766			11.6	6.4	6.3	119.8	6.7	126.5	5.1
Local & Interurban Passenger Transit 41		1,124	6.7	1.9	1.9	103.5	-	103.5	4.8
Trucking and Warehousing.....	42	2,039	17.8	10.3	10.2	411.2	21.8	433.0	7.6
Trucking, Local and Long Distance. 421		1,835	18.0	10.5	10.4	423.5	22.6	446.1	7.5
Water Transportation.....	44	1,356	16.6	10.4	10.1	199.0	9.3	208.3	6.0
Transportation by Air.....	45	5,419	13.6	8.0	8.0	90.5	10.4	100.9	5.3
Communication.....	48	4,527	8.4	4.8	4.8	91.9	-	91.9	3.6
Electric, Gas and Sanitary Services. 49		1,367	13.9	4.9	4.5	46.9	6.7	53.6	9.0
WHOLESALE AND RETAIL TRADE		31,140	8.0	3.5	3.3	38.9	3.4	42.3	4.4
WHOLESALE TRADE		5,807	9.8	5.4	4.6	61.8	3.7	65.6	4.8
Durable Goods.....	50	3,603	7.9	3.3	2.7	35.1	5.4	40.5	4.6
Nondurable Goods.....	51	2,204	12.8	7.7	7.7	105.1	1.0	106.1	5.1
RETAIL TRADE		25,333	7.4	3.1	3.0	32.5	3.2	35.8	4.3
Building Materials & Garden Supplies 52		1,051	12.3	8.3	7.9	119.1	16.0	135.1	4.0
General Merchandise Stores.....	53	3,403	7.1	2.8	2.8	37.7	7.8	45.4	4.3
Food Stores.....	54	4,187	8.5	2.8	2.7	22.0	4.0	26.0	5.7
Auto Dealers and Service Stations... 55		2,457	8.9	5.0	4.5	35.5	1.7	37.3	3.9
Apparel and Accessory Stores.....	56	1,243	2.4	0.5	0.5	2.1	-	2.1	1.9
Eating and Drinking Places.....	58	8,517	8.1	2.8	2.8	24.5	1.2	25.6	5.3
Miscellaneous Retail.....	59	3,766	5.1	2.4	2.3	40.6	1.6	42.2	2.7
FINANCE, INSURANCE AND REAL ESTATE 8,115			1.5	0.6	0.6	4.6	0.3	4.9	0.9
Banking.....	60	2,942	2.2	0.9	0.9	3.5	-	3.5	1.3
Real Estate.....	65	1,355	1.9	0.8	0.8	14.2	2.3	16.5	1.0
Holding & Other Investment Offices.. 67		1,175	1.2	0.9	0.9	8.8	-	8.8	0.3
SERVICES		30,806	4.3	2.3	2.2	32.2	5.4	37.6	2.0
Hotels and Other Lodging Places.... 70		3,327	6.8	3.4	3.4	32.1	0.1	32.2	3.4
Personal Services.....	72	1,235	2.8	2.2	2.2	33.5	-	33.5	0.7
Business Services.....	73	5,204	3.7	2.6	2.4	64.0	0.5	64.5	1.1
Health Services.....	80	6,122	5.4	2.5	2.3	43.3	20.5	63.8	2.9
Legal Services.....	81	1,315	-	-	-	-	-	-	-
Social Services.....	83	4,210	3.9	2.0	1.8	8.9	6.6	15.5	2.0
Membership Organizations.....	86	3,788	3.0	1.3	1.3	14.0	-	14.0	1.7
Miscellaneous Services.....	89	2,678	3.0	1.4	1.4	19.3	3.6	23.0	1.6
STATE AND LOCAL GOVERNMENT		38,305	6.5	2.6	2.5	46.0	1.3	47.2	3.9
STATE GOVERNMENT		16,705	4.7	1.5	1.5	36.6	0.3	36.9	3.1
LOCAL GOVERNMENT		21,600	8.1	3.5	3.4	54.2	2.1	56.3	4.5

Source: Alaska Department of Labor, Research and Analysis section,
Occupational Injury and Illness Survey Alaska 1981, p. 17.

Figure 4-5

Incidence Rates of Recordable Occupational Injuries and Illnesses
Industry Data for Ten Years, Alaska 1972 to 1981

Industry	SIC or Series	Incidence Rate for Total Cases									
		1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
TOTAL PRIVATE AND PUBLIC SECTOR ...		-	-	-	10.6	10.0	9.6	9.4	9.2	9.1	9.2
TOTAL PRIVATE SECTOR		14.4	14.7	13.1	11.5	10.7	10.4	10.0	10.1	10.4	10.0
MINING		-	-	14.0	10.4	13.0	13.8	15.2	14.0	12.1	15.4
Oil and Gas Extraction.....	13	15.8	20.8	14.0	10.5	14.9	13.9	15.7	13.7	12.4	15.8
Petroleum & Gas Production.....	131	-	-	-	-	-	-	-	-	2.5	7.3
Oil & Gas Field Services.....	138	-	-	-	-	-	-	22.6	23.0	23.8	24.9
CONSTRUCTION		29.0	25.9	19.0	16.6	14.2	16.5	16.4	16.4	16.5	17.2
General Building Contractors 12/.....	15	27.2	27.3	21.6	17.7	15.4	16.5	17.1	14.3	16.5	19.8
Residential Buildings.....	152	-	-	-	-	8.3	11.8	16.5	11.9	15.1	15.6
Nonresidential Buildings.....	154	-	-	-	-	20.1	20.2	18.0	16.8	18.0	23.7
Heavy Construction Contractors.....	16	32.4	26.2	14.0	16.9	13.7	16.6	14.2	16.6	17.3	15.1
Highway and Street Construction.....	161	-	-	-	15.2	15.3	18.9	9.7	18.8	19.2	17.8
Heavy Construction, Except Hwy.....	162	-	-	-	17.1	13.4	15.9	16.4	15.1	16.4	14.0
Special Trade Contractors.....	17	27.7	24.8	27.3	14.0	16.3	16.2	17.6	17.4	15.9	17.8
Plumbing, Heating & Air Condit.....	171	-	-	-	12.6	20.7	19.3	14.6	14.8	16.7	18.8
Electrical Work.....	173	-	-	-	10.2	8.8	18.8	17.0	10.8	16.5	15.4
Misc. Special Trade Contractors.....	179	-	-	-	21.8	22.5	10.7	-	23.1	16.3	21.6
MANUFACTURING		31.9	36.1	31.2	24.0	23.2	20.7	21.4	24.1	23.3	19.1
Food and Kindred Products.....	20	26.0	35.4	28.3	23.0	22.8	20.7	21.8	25.7	26.7	22.2
Misc. Food Prep. & Kindred Prod 13	209	23.1	37.0	29.6	-	22.4	23.6	22.3	26.0	26.9	22.5
Canned & Cured Fish & Seafoods..	2091	-	36.8	25.1	20.7	20.2	17.6	18.7	23.5	21.4	19.9
Fresh/Froz. Pkgd. Fish & Seafoods..	2092	-	38.3	42.6	31.4	24.6	27.1	27.4	29.2	31.7	24.6
Lumber & Wood Prod. except Furniture	24	58.2	60.5	49.1	38.4	37.8	30.7	31.8	31.0	32.5	26.8
Logging Camps & Contractors.....	241	-	68.6	49.0	41.0	40.7	32.3	38.6	39.1	37.3	27.2
Printing, Publishing & Allied Ind....	27	-	-	-	-	4.7	-	-	-	2.5	3.1
TRANSPORTATION AND PUBLIC UTILITIES ...		14.2	13.2	13.4	13.6	10.4	12.2	11.4	11.4	12.2	11.6
Local & Interurban Passenger Transit	41	-	-	-	-	3.7	-	-	5.1	4.8	6.7
Trucking and Warehousing.....	42	26.0	25.0	16.6	23.4	15.8	17.7	21.4	20.6	21.7	17.8
Trucking, Local and Long Distance..	421	-	-	16.6	28.8	15.8	18.0	21.3	21.0	22.1	18.0
Water Transportation.....	44	-	17.8	23.5	26.5	15.2	15.0	18.6	16.0	16.2	16.6
Transportation by Air.....	45	17.2	17.1	21.5	8.8	11.2	14.0	15.2	12.4	13.2	13.6
Communication.....	48	4.7	4.7	2.9	4.7	2.3	5.5	3.0	6.9	9.1	8.4
Electric, Gas and Sanitary Services..	49	10.6	10.7	15.8	9.7	10.7	12.1	15.5	14.6	14.6	13.9
WHOLESALE AND RETAIL TRADE		9.1	9.9	8.7	7.4	8.2	7.9	8.2	7.9	7.7	8.0
WHOLESALE TRADE 14/		10.3	13.0	9.5	10.0	6.0	9.1	12.2	11.4	10.9	9.8
Durable Goods.....	50	-	-	-	-	6.0	9.1	12.2	11.6	8.5	7.9
Nondurable Goods.....	51	-	-	-	-	6.2	11.6	8.1	11.0	15.4	12.8
RETAIL TRADE 15/		-	-	-	-	8.9	7.2	7.4	6.9	6.8	7.4
Building Materials & Garden Supplies	52	-	-	-	-	10.7	10.5	8.9	6.2	9.4	12.3
General Merchandise Stores.....	53	9.5	8.3	8.7	6.0	7.8	5.0	9.2	8.8	6.0	7.1
Food Stores.....	54	12.4	13.5	10.7	6.2	9.8	9.1	9.5	8.9	10.1	8.5
Auto Dealers and Service Stations... 55	12.7	12.7	12.4	8.1	4.7	7.2	10.2	8.5	9.5	8.9	
Apparel and Accessory Stores.....	56	-	-	-	-	2.3	2.1	3.4	2.7	2.1	2.4
Eating and Drinking Places.....	58	5.1	6.3	5.9	5.8	13.6	9.6	6.6	7.2	6.5	8.1
Miscellaneous Retail.....	59	-	5.0	4.5	5.6	5.0	4.1	4.7	3.9	2.9	5.1
FINANCE, INSURANCE AND REAL ESTATE		2.2	3.5	1.4	1.2	1.6	1.8	0.7	1.4	1.3	1.5
Banking.....	60	2.1	1.9	1.4	1.3	2.3	2.4	1.1	2.1	1.9	2.2
Insurance.....	63	-	-	-	-	-	1.9	0.6	-	-	-
Real Estate.....	65	-	11.0	-	4.1	2.3	2.3	0.8	0.1	2.8	1.9
Holding & Other Investment Offices..	67	-	-	-	-	1.1	0.4	0.3	1.8	0.0	1.2
SERVICES		5.7	5.8	5.2	2.9	4.6	4.3	4.3	4.0	4.3	4.3
Hotels and Other Lodging Places.....	70	8.6	7.9	6.5	7.7	5.8	6.7	5.5	7.9	9.3	6.8
Personal Services.....	72	-	3.9	-	2.1	-	2.8	0.6	1.3	2.5	2.8
Business Services.....	73	5.8	6.1	6.2	2.2	6.6	3.6	7.2	3.8	6.7	3.7
Health Services.....	80	8.2	4.3	3.4	2.3	2.5	4.0	4.0	3.7	3.6	5.4
Legal Services.....	81	-	-	-	-	0.6	0.3	0.5	1.0	0.2	0
Social Services.....	83	-	-	-	-	3.1	3.0	4.3	4.9	3.5	3.9
Membership Organizations.....	86	1.9	6.9	6.0	2.4	4.0	1.8	2.9	2.9	3.1	3.0
Miscellaneous Services.....	89	-	5.1	3.6	4.6	3.7	7.8	2.9	1.8	2.8	3.0
STATE AND LOCAL GOVERNMENT		-	-	-	5.9	6.0	5.6	7.1	6.3	4.9	6.5
STATE GOVERNMENT		-	-	-	4.2	4.2	3.3	6.2	3.8	3.3	4.7
LOCAL GOVERNMENT		-	-	-	7.2	7.6	7.8	8.1	8.7	6.3	8.1

Source: Alaska Department of Labor, Research and Analysis section,
Occupational Injury and Illness Survey, Alaska 1981, p. 19.

Figure 4-6

**Ten Highest Incidence Rate Industries
Alaska 1981**

Industry	SIC	1981		Percent Change	1980 Rank
		Annual Employ.	Incidence Rate		
Lumber & Wood Products	24	2,031	32.5	-17.5	1
Food & Kindred Products	20	6,871	26.7	-16.9	2
Building Construction	15	2,733	16.5	+20.0	5
Trucking and Warehousing	42	2,039	21.7	-18.0	3
Special Trades Contractors	17	3,521	15.9	+12.0	7
Water Transportation	44	1,356	16.2	+2.5	6
Oil and Gas Extraction	13	7,928	12.4	+27.1	-
Heavy Construction Contractors	16	1,213	17.3	-12.7	4
Electric, Gas, & Sanitation	49	1,367	14.6	-1.8	9
Air Transportation	45	5,419	13.2	+3.0	10

Source: Alaska Department of Labor, Research and Analysis section, Occupational Injury and Illness Survey, Alaska, 1981, p. 13.

Figure 4-7

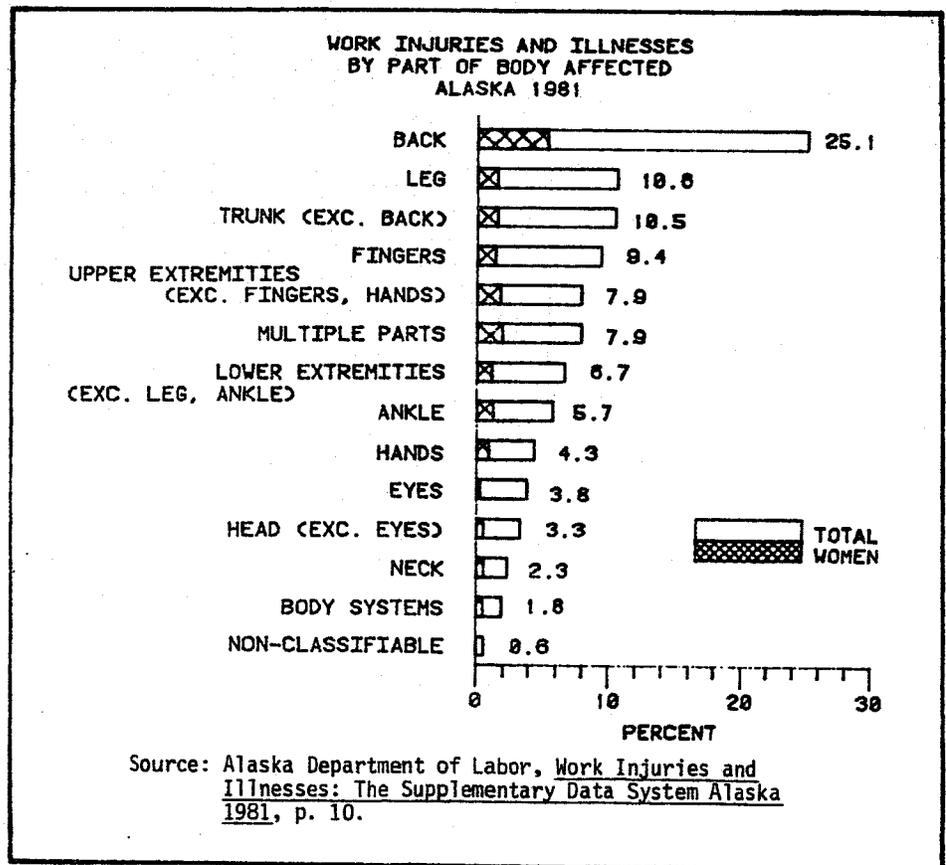
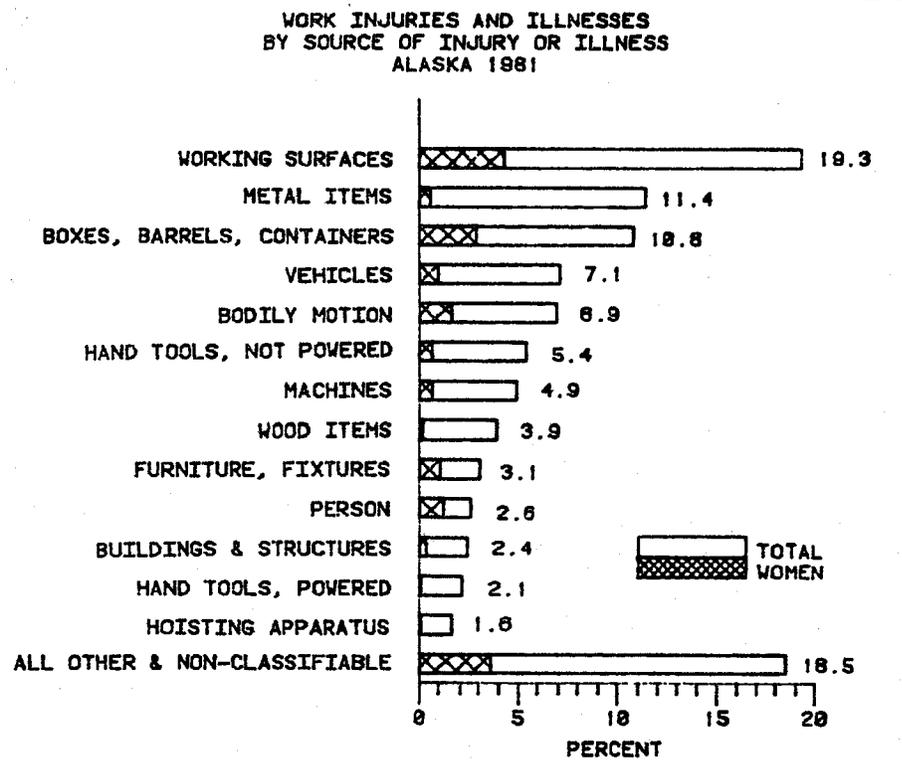
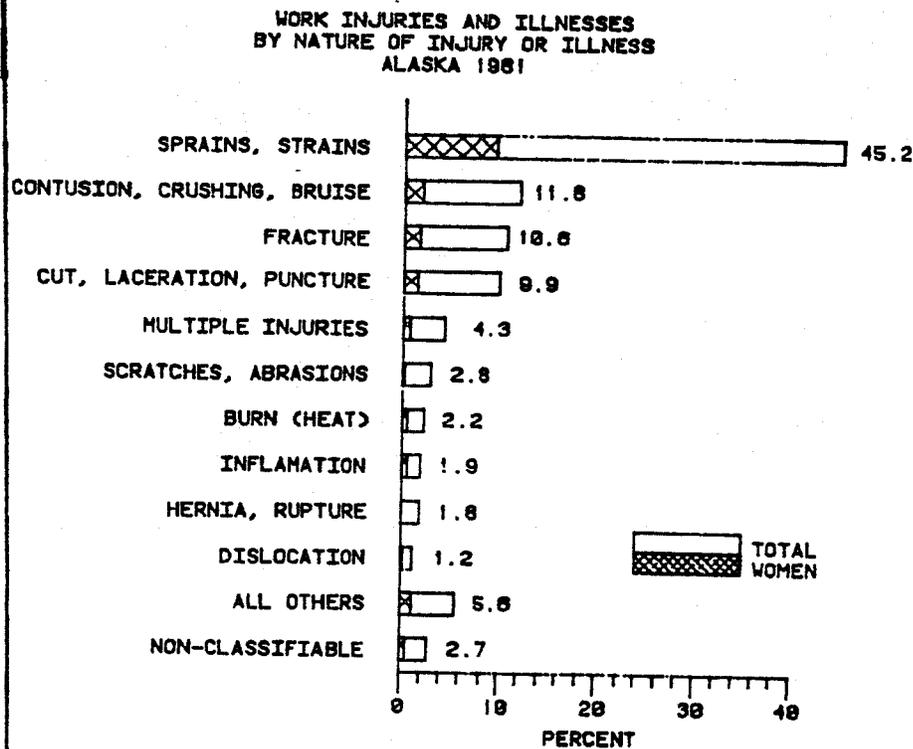


Figure 4-8



Source: Alaska Department of Labor, Work Injuries and Illnesses: The Supplementary Data System Alaska 1981, p. 11.

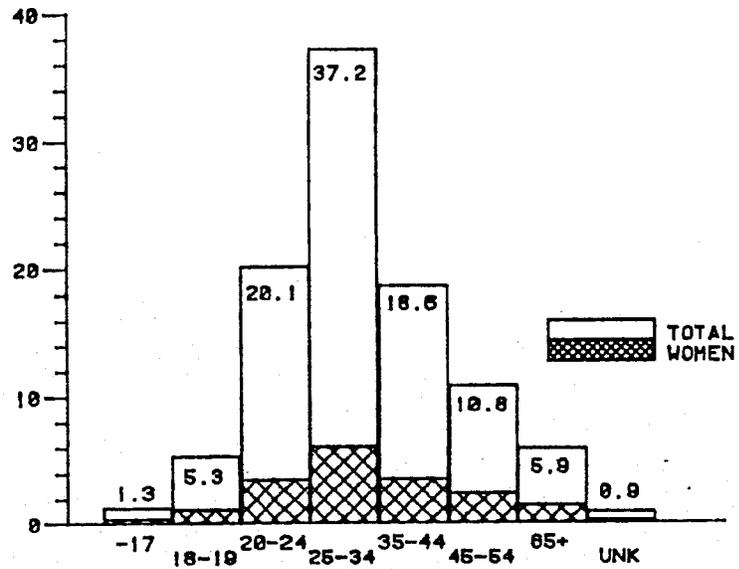
Figure 4-9



Source: Alaska Department of Labor, Work Injuries and Illnesses: The Supplementary Data System Alaska 1981, p. 9.

Figure 4-10

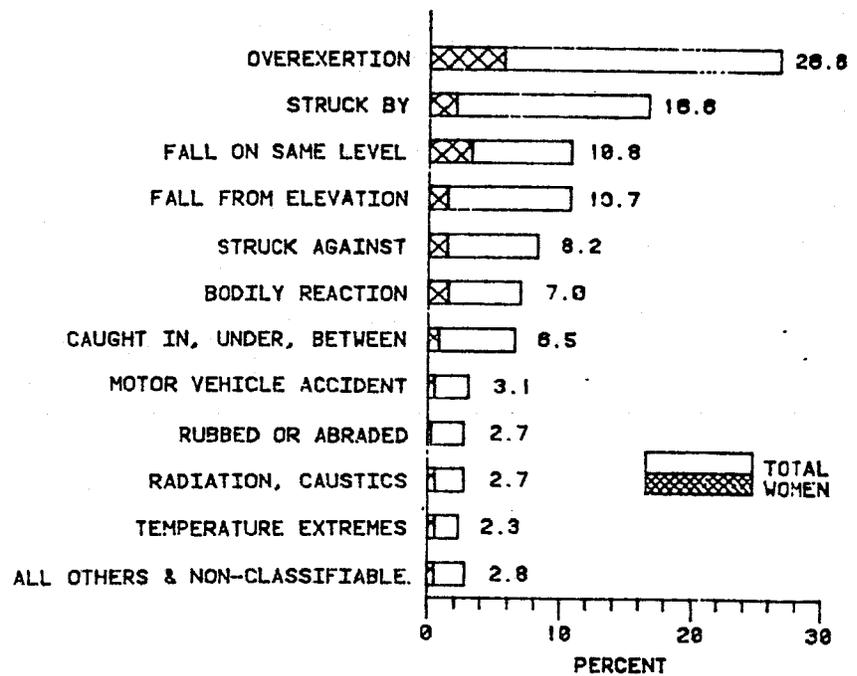
WORK INJURIES AND ILLNESSES
PERCENT DISTRIBUTION BY AGE OF WORKERS
ALASKA 1981



Source: Alaska Department of Labor, Work Injuries and Illnesses: The Supplementary Data System Alaska 1981, p. 14.

Figure 4-11

WORK INJURIES AND ILLNESSES
BY TYPE OF ACCIDENT OR EXPOSURE
ALASKA 1981



Source: Alaska Department of Labor, Work Injuries and Illnesses: The Supplementary Data System Alaska 1981, p. 12.

Health Systems Responses

Causal Factors: Causal factors in the environment of the State and lifestyle of the public that contribute to the problem of accidents are described in the matrix that follows. Suggested health care system responses are also listed and identified with the factors they influence.

Hazardous recreational and occupational activities certainly contribute to the number of accidental injuries and deaths. Preventive action by the health care system might include public education to promote better safety measures; improved enforcement of licensing and safety regulations; and licensure for private boat operators.

The harsh climate and natural environment of the State increase the risk of accidental injury or death. The health care system can take action to educate the public regarding precautionary and safety measures necessary to protect against the extreme cold and harsh terrain.

The health delivery system response to the high incidence of injuries and deaths from accidents might include a substantial emergency medical system and the existence of trained emergency care providers in each community.

HEALTH STATUS PROBLEM	ENVIRONMENTAL, LIFESTYLE AND BIOLOGICAL CAUSAL FACTORS	SUGGESTED HEALTH CARE SYSTEM RESPONSES
<p>ACCIDENTS</p>	<p>Consumption of alcohol</p> <p>Harsh climate and natural environment, remoteness of many communities</p> <p>Hazardous recreational and occupational activities, careless driving/piloting, failure to wear seat belts/flotation jackets.</p> <p>Poor home and business maintenance, fire hazards</p>	<p>alcohol safety education</p> <p>Measures to reduce alcohol consumption</p> <p>Promotion of better safety measures</p> <p>Recreational and occupational safety education</p> <p>Enforcement of safety laws such as boating, FAA, & driving regulations</p> <p>Enforcement of speed limits and DWI laws</p> <p>Promotion of use of safety equipment (seat belts, helmets, survival suits, emergency kits)</p> <p>Promotion of home safety (fire inspections, cleaning of furnaces, smoke detectors, poison labels).</p> <p>Occupation safety practices</p> <p>Emergency Medical Services</p> <p>Trained emergency care in each community</p> <p>First aid training in schools and to general public</p> <p>Poison control services</p> <p>911 Emergency number</p> <p>Improved transportation, communication networks, equipment & services</p>

Current health system responses in relation to accidents involve a great number of agencies and organizations. The following inventory represents a general and initial description. Information regarding additional services provided in the state would be appreciated.

Promotion/Prevention & Early Detection:

During the 1982-83 school year, 30 schools in Alaska provided driver's education programs that were approved by the state Department of Education. These programs enrolled 1,407 students. In addition, 8 schools (6 in Anchorage) had driver's education programs, enrolling 602 students, which were not approved by the state Department of Education.

"Here's Looking at You Two" program (designed to teach rational decision-making, specifically addressing alcohol abuse) was implemented state-wide.

Measures to reduce alcohol consumption. A new state DWI law went into effect in October, 1983. This law increased the jail sentences, fines, and period of driver's license revocation for those convicted of driving while intoxicated. Screening and follow-up services on DWI arrests have been provided by the Alcohol Safety Action Program since 1976.

National Council on Alcoholism provides educational material to driver safety program.

Fire Service Training Program, Division of Vocational and Adult Education, provides educational programs on all phases of fire suppression.

Division of Fire Prevention provides educational material on fire safety, school fire safety and drills, electric fire information, and so forth.

Coast Guard Auxiliary offers boating safety education classes (adults and children).

Local fire departments sponsor fire safety campaigns ("tot finder," courtesy home inspections, and so forth).

Law requires smoke detection devices in newly constructed and re-sold homes.

Public Health provides education regarding accident and poison prevention measures.

Poison information is available from Providence, Fairbanks Memorial, and Bartlett Hospitals.

Native Health Corporations sponsor accident and safety education in villages.

Transport/Treatment/Rehabilitation: The availability of emergency services is essential in Alaska due to the high accident rates and the difficulty in transporting victims. Health services responding to accidents that occur are provided by various health systems including:

Community Health Aides (public health nurses provide support, consultation and teaching to village CHAs)

Public Health Nurses (the PHN provides acute and emergency services according to the availability of medical care and the Emergency Medical Services Plan)

Emergency Medical Technicians and Paramedics

Ambulance Services

Coast Guard

Fire Fighters

Search and rescue coordinated by Public Safety, includes Civil Air Patrol, Coast Guard, Bureau of Land Management, Alaska Air Command and Rescue Coordination Center

Military M.A.S.T. Unit, commercial airlines, bush pilots, State Troopers, Wildlife Protection Officers, Municipal Police, Fish and Game employees, (all involved in emergency evacuation)

Bush jailers (first aid), highway construction camps & logging camp personnel (ETT)

Private clinics

State and AANHS Clinics/Health Centers

Hospitals

Chapter 5 contains specific information regarding health manpower and health facilities.

Training in emergency treatment is provided by the Public Safety Academy in Sitka, the Regional Emergency Medical Services Council, Community Colleges, Career Center of Anchorage School District, Seward Skill Center, some volunteer fire departments, the University of Alaska School of Nursing, the American Heart Association and American Red Cross (CPR), the Coast Guard, and other private organizations.

Emergency transport in Alaska includes traditional ambulance as well as air ambulance/plane and private vehicle. The following data reflect the method of transport used for these Alaska motor vehicle accidents resulting in severe injury.

Figure 4-12

Method of Transport from Motor Vehicle Accidents										
Number of Cases - Alaska 1979*										
Transported to:			Transported by:							
	Ambulance	Air Ambulance	Police Vehicle	Private Vehicle	Other Aircraft					
Hospital	1638	42.5%	17	.4%	193	5.0%	451	11.7%	20	.5%
Clinic	36	.9%	-	-	11	.3%	76	2.0%	2	.1%
Residence	3	.1%	-	-	94	2.4%	303	7.9%	0	-
Mortuary	13	.3%	-	-	3	.1%	9	.2%	1	-
Other	1	-	-	-	84	2.2%	49	1.3%	2	.1%
Unknown	8	.2%	19	.5%	24	.6%	760	19.7%	38	1.0%
Total	1699	44.1%	36	.9%	409	10.6%	1648	42.7%	63	1.6%

* Percent reflects % of grand total (3855). Percentages recalculated by SHPDA.

Source: Department of Public Safety, Highway Safety Planning Agency, Highway Safety Plan, 1981.

SUBSTANCE ABUSE

ALCOHOL

Accidents: The problem of alcohol abuse has received growing attention in recent years. There is a strong relationship between violent injury and death (accidents, violent crimes, family violence, and suicide) and consumption of alcohol. Accidents are the leading cause of death in the state of Alaska, producing a rate twice the national rate. Various sources of information indicate that a substantial number of accidents are, in fact, caused by or related to consumption of alcohol. Over a four year period between 1979 and 1982, there were a total of 262 fatalities in the state that could be directly related to the use of alcoholic beverages. This figure represents 66.7% of the total fatalities, well above the national average of 50% (Figure 4-2).

Consumption: After declining to a low of 3.72 gallons of absolute alcohol per capita in 1979, statewide alcohol consumption increased to 4.58 in 1982. This was 1% lower than the 4.64 figure for 1975. The Alaska consumption rate of 3.72 in 1979 was 30.1% greater than the U.S. rate of 2.86 at that time (Figure 3-10).

Mortality: In terms of mortality, alcohol abuse contributed directly to the seventh leading cause of death statewide in 1980, cirrhosis of the liver; and indirectly to the first, accidents; fourth, suicide, and eighth, homicide (Figure 3-2). The combined mortality due to alcoholism and cirrhosis at 13.5 per 100,000 population in 1979 was down 38.9% from 22.1 in 1970, 29.7% less than the ten year average rate of 19.2. It is important to realize that mortality due specifically to alcoholism or cirrhosis is a very imprecise indicator of the incidence of alcohol abuse. Improvements in mortality may be more reflective of greater availability of treatment services than decline in actual incidence of the problem. Also, these categories only pick up those deaths where alcohol was the primary, underlying cause of death and miss the mortality where alcohol was a secondary or contributing cause. The role of alcohol consumption and alcohol abuse upon Alaskan suicides is presumed significant. National and international studies found suicide to be one of the more frequent causes of death among chronic heavy drinkers, and likewise, there tends to be a high proportion of alcoholics among suicide cases. Studies of suicide among Alaskan Natives also verify the influence of involvement of alcohol upon its incidence.² Indian Health Service reports that 57% of the suicide attempts treated by IHS on an ambulatory basis were alcohol related.³

Acute Care Utilization: In Alaska Area Native Health Service acute care facilities, alcohol abuse as reason for service was the fourth leading cause of patient days in FY 1980, accounting for approximately 3,200 inpatient days. Alcohol abuse was the sixth leading cause for discharges, accounting for about 3,350 discharges in the same year (Figures 3-34, 3-35). In both cases this has been a drop in utilization

over the last two years. Changes in hospital policy toward accepting and treating inebriated patients, rather than a real decline in demands for service, might account for this trend.

Crime and Domestic Violence: Violent crimes are particularly frequent in the state of Alaska as identified in the categorical section. Reasonable estimates indicate that 64% of the homicides, 34% of the rapes and 41% of the aggravated assaults are related to excess consumption of alcohol by the perpetrators.⁴ Alcohol abuse also contributes to the incidence of family violence. Approximately 35% of the adults counseled in 1983 for child abuse and child neglect by the Division of Youth and Family Services were reported to have had problems with alcohol. The Alaska Network on Domestic Violence data from reporting programs indicate that 72% of their domestic violence contacts were assaults in which alcohol was involved (Figure 4-13). Other programs estimate even larger percentages.

Figure 4-13

Sample Distribution of Domestic Violence Statistics From Reporting Centers
Domestic Violence Contacts, 7/1/80-6/30/81*

Assault

Type of Force Used	Substance Abuse				Total 1	WICCA	Total 2	%	Adj. %
	Alcohol Related	Drug Related	Not Related	Unknown					
Verbal	177	55	25	77	334	74	408	33.9	36.6
Physical	183	52	25	96	356	218	574	47.7	51.4
Weapon	25	17	3	10	55	14	69	5.7	6.2
Threat of Weapon	41	9	4	11	65	0	65	5.4	5.8
Unknown	5	20	0	36	61	26	87	7.2	-
Total 1	431	153	57	230	871	332	1203	100.0	100.0
WICCA	206	28	0	98	332				
Total 2	637	181	57	328	1203				
%	53.0	15.0	4.7	27.3	100.0				
Adj. %	72.8	20.7	6.5	-	100.0				

Source: Valley Women's Resource Center, Women in Crisis - Counseling Assistance, Kodiak Women's Resource Center, Aiding Women Against Rape Emergencies (Annualized), 1981

*or other 12 month period

Driving under the influence of alcohol was the major reason for arrest in Alaska in 1979 and 1981, and the second leading reason in 1980. This offense accounted for 16% of all the total arrests in the state in 1979 and 1980, but this increased to 18% in 1981 (Figure 4-14).

Figure 4-14

STATE OF ALASKA		
Ranking by Number of Arrests		
1979		
CRIME	NUMBER OF ARRESTS	PERCENT OF TOTAL ARRESTS
Driving under the Influence	3,006	16%
All Other Offenses	2,866	15
Larceny-Theft	2,585	14
Liquor Laws	2,429	13
Disorderly Conduct	1,134	6
Other Assaults	987	5
Burglary - Breaking or Entering	923	5
Drug Abuse Violations	740	4
1980		
CRIME	NUMBER OF ARRESTS	PERCENT OF TOTAL ARRESTS
Larceny - Theft	2,600	16%
Driving under the Influence	2,575	16
Liquor Laws	2,345	15
Disorderly Conduct	1,457	9
All Other Offenses	1,336	8
Burglary	921	6
Other Assaults	803	5
Aggravated Assault	780	5
Vandalism	739	5
1981		
CRIME	NUMBER OF ARRESTS	PERCENT OF TOTAL ARRESTS
Driving Under the Influence	3,481	18%
Larceny - Theft	3,099	16
Liquor Laws	2,536	13
All Other Offenses	1,507	8
Disorderly Conduct	1,261	7
Other Assaults	1,254	7
Burglary	875	5
Vandalism	834	4
Aggravated Assault	816	4
Source: State of Alaska, Department of Law, Criminal Justice Planning Agency, <u>Crime in Alaska, 1979, 1980, 1981.</u>		

Alcohol use is related to crime, violence, and death in Alaska. In 1981, 55% of all crime in the state was determined to be alcohol related. In all, 78.9% of violent felons in 1980 in Alaska were using alcohol at the time of the offense. Alcohol was involved in 27 of the 33 homicides (81.8%) in Alaska in 1980. During the period October 1982 to January 1983, 41.6% of State Office of Alcoholism and Drug Abuse (SOADA) clients were referred by the Criminal Justice System. It was estimated by SOADA that \$51,839,000 represented Criminal Justice System costs due to alcohol related crime in 1980. Alcoholics have a 30 times greater risk of suicide in the state; 80% of suicides in 1980 were alcohol related. In 1981, Alaska had a fire fatality rate of 6.58 persons per 100,000 population, over 3 times the national rate of 1.93. Of the 23 fire deaths in the state in that year, 52% were determined to be alcohol related. Of the 86 drownings in the state, 68% were alcohol related.⁵

Treatment Services: There were 10,372 clients served by SOADA during the period October 1, 1982 through September 30, 1983 (Figure 4-15). This compares to 6,009 clients for the calendar year 1980.

Figure 4-15

TOTAL UNDUPLICATED CLIENTS RECEIVING ALCOHOL ABUSE TREATMENT*			
October 1, 1982 through September 30, 1983			
Anchorage -		Juneau	802
Akeela	735	Ketchikan	343
VOA-Arch	41	Ketchikan Youth	3
Center for Drug Problems	135	Petersburg	75
Salvation Army	1804	Sitka	352
Amouak	162	SEARCH/Rural Southeast	118
CMHC	160	Wrangell	183
Bethel		Yakutat	16
PATC	1226		
Y-K Health Corp.	120	SOUTHEAST REGION	1,892
Bristol Bay	110		
Kenai	290	Barrow	195
Copper River/Copper Ctr	64	Fairbanks	1348
Kodiak	398	Galena	120
Kuskokwim Native/Aniak	22	McGrath-Anvik	59
Mat-Su/Wasilla	464	Manilaq	156
NSHC/Nome	288	Ft. Yukon	54
Nugen's Ranch/Wasilla	73	Tok	89
Seward	182	KILA, Inc.	39
Valdez	96		
Cordova	50	NORTHERN REGION	2,060
		SOUTHCENTRAL REGION	6,420
		STATEWIDE TOTAL	10,372

*Numbers represent unduplicated client count of client identifying information processed during this period of time by State Office of Alcoholism and Drug Abuse.

Alcohol abuse is a problem that involves the response of numerous health, social, and criminal justice agencies. A "tougher" DWI law passed by the Alaska Legislature went into effect in October, 1983. This law increased the jail sentences, fines, and period of driver's license revocation for those convicted of driving while intoxicated. It is not yet clear whether this stiffer law will deter potential drunken drivers. Screening and follow-up services on all DWI arrests ^{have} been provided by the Alcohol Safety Action Program administered through the Department of Public Safety since 1976. This program screens each DWI offender, determines the extent of alcohol problem, and assigns alcohol education or rehabilitation as appropriate. It also provides a case follow-up to the courts on each client for 5 years. The passage of House Bill 17, which returns the drinking age to 21 years, during the 1983 legislature is expected to impact the young drinking driver program. Alcohol enforcement efforts will be enhanced by the statewide use of Pre-Arrest Breath Testing devices by 1984.

According to the 1984 Highway Safety Plan, community based public education programs have been developed by the Alaska Council on Prevention of Alcoholism and Drug Abuse and are in place in various areas of the state. These programs include "Who's Going to Call the First Meeting," "The Chemical People," "Drinking, Driving and Deciding," and "Here's Looking at You Two." These programs teach facts about alcohol as well as skills in decision making, coping with problems, and creating a positive self-image. A new multi-media slide presentation, "Friday Night Live," preceded by and followed by six weeks of classroom instruction, will soon be in use. The overall goal of these programs is to help children and young people make responsible decisions about alcohol. Citizen activist groups such as Mothers Against Drunk Drivers, Students Against Drunk Drivers, and REACT as well as parent groups are helping to form a network of comprehensive based programs.

The utilization of categorical health services is not included in the health status assessment or the determination of priority health status problems; however, it is included in this section to provide information regarding health systems responses to the health problem.

Chapter 5 (pp. 129-134) contains an inventory of the alcohol program.

Figure 4-16

TOTAL UNDUPLICATED CLIENTS RECEIVING
ALCOHOL ABUSE TREATMENT
BY HSA AND BY EDUCATIONAL LEVEL ATTAINED

CALENDAR YEAR 1980

REGION	EDUCATIONAL LEVEL ATTAINED					N/R	TOTAL
	Grade (1-9)	Some H.S. (9-11)	H.S./GED (12)	Some Coll. (13-15)	College (16,16+)		
SOUTHEAST	128	297	451	158	55	311	1400
NORTHERN	112	123	262	76	17	127	717
SOUTHCENTRAL	703	726	1572	499	145	247	3092
TOTAL Number.....	943	1146	2285	733	217	685	6009
Percentage...	15.7	19.1	38.0	12.2	3.6	11.4	100.0

TOTAL UNDUPLICATED CLIENTS RECEIVING
ALCOHOL ABUSE TREATMENT
BY HSA AND BY OCCUPATION

CALENDAR YEAR 1980

OCCUPATION	REGION			TOTAL	
	Southcast	Northern	Southcentral	Number	Percent
EMPLOYED					
Professional/Technical/Managerial	117	59	402	578	11.0
Clerical/Office/Sales	74	37	264	375	7.1
Fishing/Trapping/Forestry/Logging	196	40	457	693	13.1
Processing/Machine Trades/Transportation Operatives	78	48	198	324	6.1
Structural Work/Other Crafts	87	56	345	488	9.3
Service	179	79	578	836	15.9
Labor	115	148	603	866	16.4
SUBTOTAL	816	467	2847	4150	78.9
NOT IN LABOR FORCE					
Homeworker	65	30	167	262	5.0
Student/Disabled/Retired	182	34	221	437	8.3
SUBTOTAL	247	64	388	699	13.3
REPORTED AS UNEMPLOYED	62	10	342	414	7.8
TOTAL	1155	541	3577	5273	100.0
No occupation, unknown occupation, or not reported	245	176	315	736	-

Source: Department of Health & Social Services, Office of Alcoholism and Drug Abuse, Annual Report to the Legislature, 1981.

Other Health Problems: National studies indicate that alcohol consumption is one causal factor for certain types of heart diseases, vascular lesions of the central nervous system, and respiratory problems as well as cirrhosis of the liver and brain dysfunction. Alcohol abuse particularly contributes to the incidence of some types of heart disease and hypertension when coupled with the high prevalence of cigarette smoking among alcoholics. The risk of cancer of the upper digestive and respiratory tract is increased by the duration and intensity of exposure to alcohol or tobacco, with sustained exposure to both increasing the risks.

Characteristics of Problem Drinkers: The following are characteristics of the clients treated in SOADA programs throughout the state from October 1982 to August 1983.⁶

Nearly 3 out of 4 (74%) of drinkers with problems in Alaska are males; 26% are females.

Young adults represent a disproportion of problem drinkers. While 11% of Alaska's population in 1980 was between 20-24 years of age, 28% of SOADA clients were 18-25 years old. While 30% of the state population was 25-39 years of age, 44% of SOADA clients were between 26 and 40.

While 16% of Alaska's population was Native in 1980, over half (53%) of SOADA clients were Native.

While the overall unemployment rate in 1982 for the state was 10.1%, 19% of SOADA clients were unemployed.

Nearly 30% of SOADA clients had seen military service at some time. About 2% were presently on active duty.

Nearly half (46%) had never been married. About 27% were married or living as married. About 23% were divorced or separated. Over 40% were living in one-person households.

Over 2 out of 3 (69%) had 1982 annual incomes of less than \$10,000. About 1 in 4 (24%) had annual incomes between \$10,000 and \$30,000; nearly 6% had incomes between \$30,000 and \$50,000. Only 2% had incomes over \$50,000 per year.

For over half of the clients (55%), SOADA was itself the source of payment for services.

In terms of the severity of the problem, 36% were classified as dependent, 38% as episodic, 6% as dysfunctional, and 11% as non-dependent.

Nearly half of the SOADA cases (42%) were criminal justice related.

Health Systems Responses

Causal Factors & System Responses: Alaska's alarming rate of consumption of alcohol is the obvious causal factor for alcohol related health problems. Related environmental and lifestyle causal factors which influence the consumption of alcohol include social and cultural conceptions concerning alcohol consumption.

The health care system is therefore charged with the initiation of measures to reduce consumption of alcohol. Such measures may include support of reduced availability through restricted open hours and well regulated distributors; alcohol education to the youth and the general public; and alternative recreational activities.

HEALTH STATUS PROBLEM	ENVIRONMENTAL, LIFESTYLE AND BIOLOGICAL CAUSAL FACTORS	SUGGESTED HEALTH CARE SYSTEM RESPONSES
Alcohol Abuse	Consumption of Alcohol	Measures to reduce consumption of alcohol: Reduced availability Restricted advertising for alcohol products Public and school alcohol education Alternative recreational activities
	Psychological Problems: (emotional stress, feelings of inferiority, family relationship problems, etc.)	Treatment for underlying psychological conditions
	Sociological Stress: (Unemployment, rapid cultural change, population stability, society's response to deviant behavior.)	Training in methods to cope with sociological stress. Promotion of positive social experiences.
	Social and psychological stress	Treatment for underlying psychological conditions
	Social expectations regarding consumption of alcohol and availability of alcohol	Alcohol education; Restricted advertising; Reduced advertising; Alternative recreation
	Biological addiction	Alcoholism diagnosis, treatment and followup

DRUG ABUSE

Drug abuse is a problem that is receiving increasing media and legislative attention. No longer is drug abuse limited to counter-culture groups. Recent years have witnessed the tragic consequences of drug abuse among Hollywood celebrities and the scandalous revelations of the prevalence of drug use among professional and amateur athletes.

The State Office of Alcoholism and Drug Abuse is developing new research which will provide a more conclusive identification of the extent of drug use/abuse and the population at risk. In the drug use area, it is necessary to rely on indirect measures, or indicators, of use/misuse in such a way that changes in the indicators correspond to changes in actual drug use/misuse patterns, especially when considered over time. Current indicators include crime data (drug arrests, drug thefts, drug seizures, incarcerations for drug offenses), and health data (drug-related mortality, cases of hepatitis B, and persons in treatment).

Arrests: In Alaska drug abuse has represented 3-4% of the total arrests for 1978-1981 (Figure 4-17). The total number of drug arrests declined each year from 1978 through 1980, but rose in 1981. The total number of adult and juvenile drug arrests in 1981 was 672, 5% less than the average number of arrests over the four year period, 1978-1981 (Figure 4-18). Because police enforcement policies vary over time as well as by locale, the significance of this drop is open to question. Marijuana has been the leading drug type in drug arrests, representing 82.1% of all drug arrests for adult and juvenile possession between 1978 and 1981 (Figure 4-18). Among juveniles, marijuana represented 92.1% of possession arrests during this period (Figure 4-19). In 1980, 32.0% of SOADA clients were in treatment as the result of marijuana use (Figure 3-36).

Figure 4-17

Drug and Alcohol Related Arrests								
Statewide								
1978-1981								
	1978		1979		1980		1981	
	Arrests	Percent	Arrests	Percent	Arrests	Percent	Arrests	Percent
Total Arrests	20,809		18,698		16,102		18,825	
Drug Abuse	884	4%	740	4%	533	3%	672	4%
Driving under the Influence	3,265	16%	3,006	16%	2,575	16%	3,481	18%
Liquor Laws	2,102	10%	2,429	13%	2,346	15%	2,536	13%
Aggravated Assault	439	2%	417	2%	780	5%	816	4%
Other Assaults	1,121	5%	987	5%	803	5%	1,254	7%
Disorderly Conduct	2,192	11%	1,719	9%	1,457	9%	1,261	7%
TOTAL	10,003	48%	9,298	49%	8,494	49%	10,020	53%

Source: Alaska Department of Law, Criminal Justice Planning Agency, Crime in Alaska 1980, 1981.

Figure 4-18

Adult and Juvenile Drug Arrests					
Statewide 1978 - 1981					
	1978	1979	1980	1981	% Change 1980-1981
Opium, Cocaine or Derivatives	35	56	30	45	50
Marijuana	87	73	38	32	-16
Synthetic Narcotics	3	6	0	3	300
Other Dangerous Drugs	11	9	5	18	260
Total Sale/Manufacture	136	144	73	98	34
Opium, Cocaine or Derivatives	56	47	48	66	38
Marijuana	662	500	389	471	21
Synthetic Narcotics	12	14	3	20	567
Other Dangerous Drugs	18	35	20	17	-15
Total Possession	748	596	460	574	25
TOTAL DRUG ABUSE ARRESTS	884	740	533	672	26

Figure 4-19

Juvenile Drug Arrests					
Statewide 1978 - 1981					
	1978	1979	1980	1981	% Change 1980-1981
Opium, Cocaine or Derivatives	0	3	0	4	400
Marijuana	28	27	11	11	0
Synthetic Narcotics	0	4	0	0	0
Other Dangerous Drugs	3	1	1	9	900
Total Sale/Manufacture	31	35	12	24	100
Opium, Cocaine or Derivatives	5	11	14	11	-21
Marijuana	458	375	262	302	15
Synthetic Narcotics	2	3	2	11	450
Other Dangerous Drugs	14	14	6	4	-33
Total Possession	479	403	284	328	15
TOTAL DRUG ABUSE ARRESTS	510	438	296	352	19

Source: State Office of Alcoholism and Drug Abuse, 1983.

Hepatitis B: Hepatitis B, otherwise known as serum hepatitis, is a problem around the world. The mode of transmission is by parenteral (intravenous, intramuscular or subcutaneous) inoculation by the infectious agent, a virus. Vehicles of spread include sexual contact, close and prolonged household contact as well as by contaminated needles, syringes and other intravenous equipment.

For reasons that are currently not clearly understood, the rate of hepatitis B among Natives in some Alaska villages is quite high. State involvement in hepatitis B screening began in March 1983. By the end of October 1983, state public health personnel through contract with the Indian Health Service had screened 20,000 people, at least 10,000 of which were in the high-risk Native villages. In some villages, up to 20% of the residents were found to be carriers. People with hepatitis B are at risk for cirrhosis of the liver and liver cancer. An effective vaccine became licensed in November 1981. It is felt by administrators that with vaccine, hepatitis B can be controlled in Alaska.

Chapter 5 provides an inventory of drug abuse programs throughout the state (drug abuse treatment programs and youth prevention programs).

MENTAL ILLNESS AND EMOTIONAL DISORDERS

Mental health may be defined as a "state of reality-oriented compatibility with oneself, others, and the world, that results in a meaningful life and a sense of well-being."⁷ Mental health is often understood in its opposite condition in order to focus on service programs. Mental illness is generally evaluated in terms of the measurable indicators for poor mental health such as suicide, child abuse, criminal offenses such as homicide, usage of community mental health centers, and psychiatric hospitalization. There is a need for more comprehensive measures of mental health status.

Mortality: Because mental illness is a pervasive problem, much more has been said about it in the discussion of target groups in Chapter 3. Suicide is a conventional indicator of mental illness, albeit an incomplete one, in that it really describes only those suffering from depressive disorders and related sequelae. Suicide was the fifth leading cause of statewide mortality in 1980 at an age-adjusted rate of 17.7, as compared to the U.S. rate of 12.2 (Figure 3-3). The crude mortality rate for suicide in Alaska increased 36.4% over the decade from 13.2 per 100,000 in 1970 to 18.0 in 1980. The 1980 rate is also 16.5% greater than the eleven year average rate.

Family violence, child abuse and neglect, violent crimes and alcohol abuse: These are all indicators of poor mental health. Each of these has been identified as a major problem in the state of Alaska. Alaska has a high rate of per capita alcohol consumption as well as a high frequency of alcohol related problems (see the categorical alcohol section). Violent crimes, including criminal acts such as assault, rape, and homicide, are also identified as a major problem in the state. Child abuse and other family violence are frequent and serious problems in the state of Alaska and should be considered in the analysis of mental health. Additional information regarding the incidence of family violence can also be found in the violent crime section.

Stress: Stress is one recognized risk factor for mental illness. Socioeconomic indices and divorce rates are convenient indicators of stress. Unemployment in the state has risen from 9.6% in 1980 to 10.1% in 1982. Over the same period the U.S. unemployment rate moved from 7.1% to 9.7% of the workforce (Figure 4-20).

Figure 4-20

UNEMPLOYMENT IN ALASKA BY HEALTH SERVICE AREAS						
ANNUAL AVERAGE, 1977-1982*						
	1977	1978	1979	1980	1981	1982
Southeast HSA						
Work Force	24303	26824	27500	30056	30002	30700
Number Unemployed	2227	2803	2359	2700	3212	3454
Percent Unemployed	9.2	10.4	8.6	9.0	10.7	11.3
South Central HSA						
Work Force	116509	122294	125262	126628	132489	143834
Number Unemployed	9757	11980	10857	11496	11135	13239
Percent Unemployed	8.4	9.8	8.7	9.1	8.4	9.2
Northern HSA						
Work Force	31190	31883	30239	30315	31516	33469
Number Unemployed	4016	5218	3784	3803	3655	4308
Percent Unemployed	12.9	16.4	12.5	12.5	11.6	12.9
Alaska						
Work Force	172000	181000	183000	187000	194000	208000
Number Unemployed	16000	20000	17000	18000	18000	21000
Percent Unemployed	9.3	11.0	9.3	9.6	9.3	10.1
U.S.						
Work Force	99009000	102251000	104962000	106940000	108670000	110204000
Number Unemployed	6991000	6202000	6137000	7637000	8273000	10678000
Percent Unemployed	7.1	6.1	5.8	7.1	7.6	9.7
*Labor Force Benchmark 1982						
Source: State of Alaska Department of Labor, Research and Analysis Section, 1982.						

In 1976, the per capita income in Alaska was \$10,725, compared to \$6397 for the U.S. Within the state, the highest per capita income was in Fairbanks, with \$14,170. During the period 1975-1980, per capita income increased in Alaska by 33.5%. The Southeast Health Systems Agency per capita income increased 64.3% during the same period, with Ketchikan increasing 81.6% (Figure 4-21).

Figure 4-21

Per Capita Income, HSAs and Alaska,
1975-1980 Including Selected Urban-Rural
Comparisons for Each HSA

AREA	1975	1976	1977	1978	1979	1980	% Change 75-80
SE HSA	8367	9387	10,075	10,711	11,648	13,746	64.3%
Ketchikan	8305	9873	10,534	11,117	12,353	15,084	81.6%
Skag-Yak	6393	6789	7,561	7,196	8,225	9,098	42.3%
Angoon	4852	5525	5,185	5,428	6,266	7,443	53.4%
SC HSA	9062	10,374	11,049	10,819	11,241	12,691	40%
Anchorage	9904	11,214	12,401	12,026	12,448	14,266	44%
Kuskokwim	4408	4682	3920	4103	4491	5748	30.3%
NO HSA	11,516	12,798	10,900	10,985	11,408	12,347	7.2%
Fairbanks	13,723	14,170	11,993	11,883	12,269	13,308	-3%
Kobuk	5326	5284	6191	6406	6187	7225	35.7%
ALASKA	9554	10,725	10,921	10,842	11,320	12,759	33.5%

Source: Office of the Governor, Alaska Statistical Review 1982, Volume II

The statewide divorce rate increased from a rate of 57.8 divorces to 100 marriages in 1979 to 65.6 in 1980 and then declined to 60.2 in 1981. The U.S. rate declined slightly from 49.5 in 1979 to 49.0 in 1980 (Figure 4-22).

Figure 4-22

Marriage¹ and Divorce², 1979 - 1981 by HSA, Alaska and U.S.

1979				
HSA/ AREA	#	Marriages Rate per 1000 Pop.	#	Divorces Rate per 100 Marriages
SE HSA	608	12.0	377	62.0
SC HSA	3281	12.0	1928	58.8
NO HSA	917	12.1	572	62.4
Unk/Out of State	184	-	9	-
ALASKA	4990	12.5	2886	57.8
U.S.	-	10.7	-	49.5
1980				
HSA/ AREA	#	Marriages Rate per 1000 Pop.	#	Divorces Rate per 100 Marriages
SE HSA	760	14.1	370	48.7
SC HSA	3647	13.4	2004	54.9
NO HSA	954	12.5	556	58.3
Unk/Out of State	-	-	587	-
ALASKA	5361	13.3	3517	65.6
U.S.	-	5.3	-	49.0
1981				
HSA/ AREA	#	Marriages Rate per 1000 Pop.	#	Divorces Rate per 100 Marriages
SE HSA	773	13.8	480	62.1
SC HSA	3911	13.8	1878	48.0
NO HSA	1047	12.5	541	51.7
Unk/Out of State	-	-	553	-
ALASKA	5731	13.6	3452	60.2
U.S.	-	N/A	-	N/A

Source: Alaska Dept. of Health & Social Services, Office of Information Systems, unpublished data, 1981, 1982; U.S. Dept. of Health & Human Services, National Center for Health Statistics, Monthly Vital Statistics Report Provisional Statistics, Annual Summary for the United States, 1979; Monthly Vital Statistics Report, Annual Summary of Births, Deaths, Marriages and Divorces: U.S., 1980.

Note: 1. Marriage data based on place of occurrence
2. Divorce data based on groom's residence

Given the recent recognition of post traumatic stress disorders, it is interesting to note that 20.4% of domestic violence contacts reported to the Alaska Network on Domestic Violence, where veteran status was known, were Vietnam veterans (Figure 4-23).

Figure 4-23

Sample Distribution of Domestic Violence Statistics From Reporting Centers

Domestic Violence Contacts, 7/1/80-6/30/81*

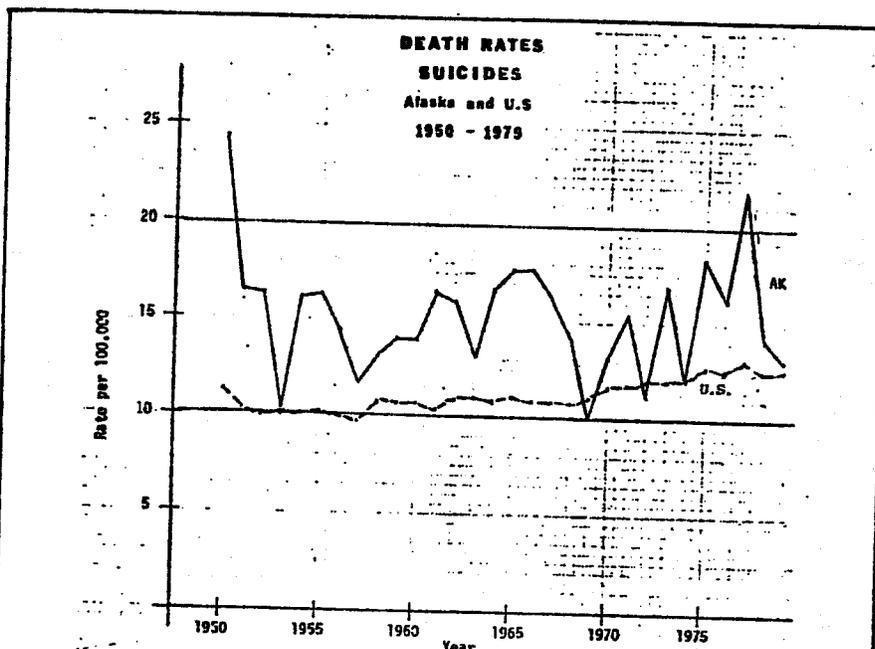
Assailants

Vietnam Veterans	Frequency		
	#	%	Adj %
Yes	55	6.4	20.4
No	214	25.0	79.6
Unknown	586	68.5	-
Total	855	100.0	100.0

Source: Valley Women's Resource Center, Women in Crisis-Counseling Assistance (Annualized), Aiding Women Against Rape Emergencies (Annualized), Women in Safe Homes, 1981

*or other 12 month period

Figure 4-24



Source: 1) Office of Information Systems, Alaska Department of Health and Social Services, Alaska Vital Statistics, 1966, 1974-1978 and Unpublished Data, 1977-1979, NCHS, U.S. DHEW, Vital Statistics of the U.S., 1960 and 1955; and Monthly Vital Statistics report, Annual Final Mortality Statistics, 1970-1978, Provisional Statistics, 1979.
 2) Alaska Dept. of Labor, Alaska Population Overview, 1979 and Population Release memorandum, July 2, 1980.

Death from Suicide by Age, Alaska 1978,79 and 1980; U.S., 1978

Age	1978,79		1980		% Change	U.S. Rate* 1978
	#	Rate*	#	Rate*		
0-4	0	0	0	0		0
5-14	1	0.6	1	1.5	150.0	0.4
15-24	38	22.8	22	26.8	17.5	12.4
25-34	31	20.7	23	25.4	22.7	16.7
35-44	15	12.1	14	26.0	114.9	15.8
45-54	15	20.4	5	14.6	-28.4	17.1
55-64	7	21.4	5	24.2	13.1	18.1
65+	5	29.1	2	17.3	-40.5	19.9
TOTAL	112	13.7	72	18.0	31.4	12.5

* Rates are for 100,000 Population

Sources: 1) Unpublished data, 1978, 1979, 1980 Vital Statistics, Office of Information Systems, Alaska Dept. of Health & Social Services.
 2) Alaska 1980 Population A Preliminary Look, 1981, Population Release Memorandum dated July 2, 1981; Population Overview 1981, Alaska Dept. of Labor.
 3) Monthly Vital Statistics, Advance Report, Final Mortality Statistics, 1978 NCHS, U.S. DHHS.
 4) Current Population Reports, Population Estimates and Projections, Series P-25, No. 370, U.S. Bureau of the Census, January, 1981.

Suicides in Alaska as well as nationally tend to occur most often in the male population as indicated in the following data. Of particular concern is the suicide rate among the Native population. The 1980 suicide rate for Alaska Natives was 1.9 times greater than the rate for non-Natives in Alaska and more than four times greater than the rate for non-whites nationally. The 2-C Report determined that the suicide rate is particularly high for the Athapascan Indian and Northern Eskimo populations.⁸

Figure 4-25

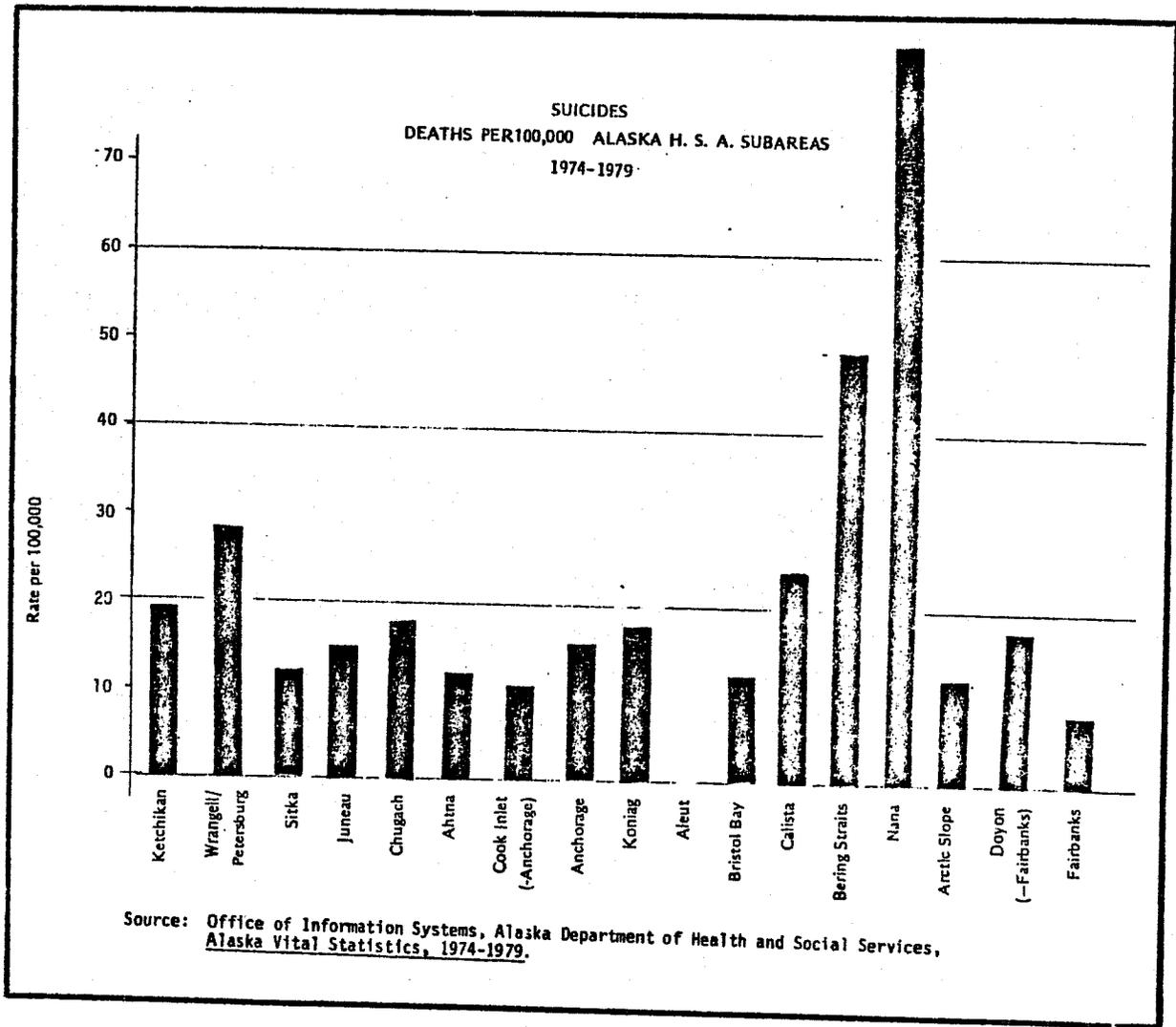
Deaths from Suicide by Sex and Race, 1978, 79 and 1980						
Sex	1978 #	1979 rate*	1980 #	1980 rate*	% change	U.S. rate* 1978
Male	92	20.7	58	27.3	31.9	19.0
Female	20	5.4	14	7.4	37.0	6.3
Race						
Native	28	21.4	19	29.6	38.3	non-white: 6.9
Non-Native	84	12.2	53	15.8	29.5	white: 13.4
Total	112	13.7	72	18.0	31.4	12.5

*Rate is per 100,000 population

Sources: 1) Office of Information Systems, Alaska Department of Health and Social Services, *Alaska Vital Statistics, 1978, 1980*. Unpublished data, 1979, NCHS, US DHEW, *Final Mortality Statistics, 1978*.
 2). Alaska Department of Labor, Population Release, memorandum dated July 2, 1980.

The suicide rate varies considerably between regions of the State as indicated by Figure 4-26. The highest rates occurred in the NANA and Bering Straits regions with rates of 83.3 and 49.8 respectively.

Figure 4-26



Health Systems Responses

Various lifestyle and environmental factors contribute to the mental health problems of the residents of the State of Alaska as listed in the matrix below.

HEALTH STATUS PROBLEM	ENVIRONMENTAL, LIFESTYLE AND BIOLOGICAL CAUSAL FACTORS	SUGGESTED HEALTH CARE SYSTEM RESPONSES
<p>MENTAL ILLNESS AND EMOTIONAL DISORDERS</p>	<p>Rapid Cultural & economic change</p>	<p>Planning to minimize impacts of major change producing events Direct change of stress-producing factors</p>
	<p>Social and psychological stress</p>	<p>Training in methods to reduce emotional stress</p>
	<p>Occupational stress</p>	
	<p>Racism</p>	
	<p>Unemployment and poverty</p>	<p>Education</p>
	<p>Stigma</p>	
	<p>Physcial environment, darkness in winter months, isolation, crowded housing</p>	
	<p>Overprescription/Drug orientation</p>	
	<p>Consumption of alcohol</p>	<p>Measures to reduce consumption</p>
	<p>Family conflict</p>	<p>Family counseling, parenting classes</p>
<p>Biological predisposition</p>	<p>Diagnosis, treatment, follow up</p>	
<p>Isolation from Extended Families</p>		

A broad range of organizations and agencies are involved in responding to problems related to poor mental health. Services are provided by the Division of Mental Health and Developmental Disabilities, Alaska Area Native Health Service, Native Health Corporations, the Division of Youth and Family Services, the State Office of Alcoholism and Drug Abuse, the private sector, etc. Chapter 5 provides an inventory of current resources including the Community Mental Health Centers, social workers, psychiatrists, psychologists, and other health manpower. Additional information related to family violence and substance abuse is contained in those categorical sections.

The development of effective public education and health promotion measures regarding mental health is recognized as an important part of the health care system. Most of the community and mental health centers throughout the state provide prevention measures as part of their complement of services to the population. This includes teaching of self-help groups, focusing on such issues as weight reduction, stress management, and parenting skills, and sponsoring public education on the causes and treatment of emotional problems. Mental health centers also provide consultation to a variety of human services providers on the application of principles of human behavior for achieving good mental health.

Mental health centers provide basic therapeutic services to the region they serve. These include individual, family and group therapy, follow-up after institutionalization, screening and evaluation and limited in-patient services, and twenty-four hour emergency coverage.

Individual and family counseling, information and referral, child protective and adult protective services are provided by social workers in the State Division of Family and Youth Services. The Division also provides day care and homemaker services and grants for youth programs and family violence programs. Alaska Area Native Health Service also provides counseling services through AANHS social workers.

The State Division of Mental Health funds twenty-four Community Regional Mental Health Centers (FY 82) throughout the state for out-patient care to residents throughout the state. (See Chapter 5 for services inventory). Providence Hospital and Fairbanks Memorial Hospital provide inpatient psychiatric care.

VIOLENT CRIMES

The category of violent crimes includes injury from family violence, aggravated assaults, forcible rape, and homicide deaths. These violent acts affect a significant portion of the population of Alaska. The rate of assault and the rate of rape are particularly high in Alaska compared to the nation at large. Family violence and other violent crimes are related to other health status problems addressed elsewhere in this chapter.

Child Abuse and Family Violence: Child abuse is a frequent and serious problem in the State of Alaska. Statistical information available regarding the prevalence of child abuse and neglect seriously understate the problem because of poor reporting of child abuse/neglect cases. Unfortunately, most child abuse situations which come to the attention of professionals are described by the abuser as resulting from accidents or, in some cases of infant death, of undefined cause. Health professionals involved are often reluctant to challenge such a statement unless powerful evidence of child abuse exists.

The Alaska Division of Family and Youth Services reported 1,457 confirmed or suspected cases of child abuse and an additional 3,487 confirmed or suspected cases of child neglect during fiscal year 1983. These figures are considered conservative as the Division feels that child abuse and child neglect cases may be under-reported.

The consumption of alcohol contributes significantly to the incidence of child abuse and neglect as it does to accidental injury and death. Of the adults counseled by the Division of Youth and Family Services for child abuse or child neglect, 35% were reported to have had problems with alcohol.

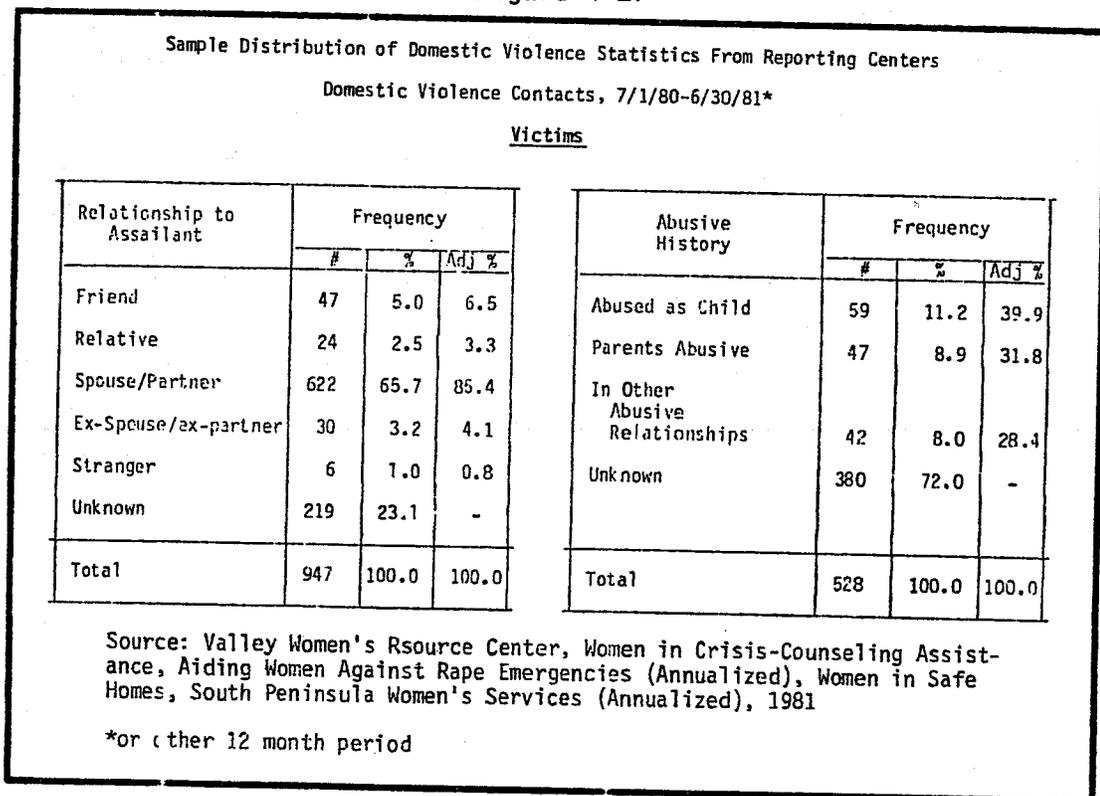
Information is not readily available comparing the incidence of child abuse or neglect in Alaska with its incidence in other states or throughout the nation. This is primarily because of the great variation in reporting systems being used around the country; however, the American Humane Association does attempt to document reported cases of child abuse/neglect within the fifty states, three territories and the District of Columbia. In the National Study on Child Neglect and Abuse Reporting, 1980, A.H.A. stated that 711,142 reports of child abuse/neglect were documented within the U.S. in 1979. By using 1980 census data for both the U.S. and Alaska, the following rates were developed for reported cases of confirmed or suspected abuse/neglect per 100,000 children under sixteen years of age: U.S.- 1,281/100,000 and Alaska- 3,771/100,000.

While a direct comparison of these rates should not be made, given the variation in reporting systems and the effectiveness of various State programs in finding and documenting cases, it is probably safe to assume that the incidence of child abuse/neglect in Alaska is substantially greater than that found nationally. This conclusion would tend to be supported by such mental health indicators as the high per capita consumption of alcohol and the high rates of suicide and divorce.

Much of the violent crime in the State appears to be directed at family or friends. For example, 47.6% of the homicides committed in 1980, for which the circumstances are known, were the result of family quarrels. According to data from programs reporting to the Alaska network on Domestic Violence, 62.4% of victims of sexual assault were either friends or relatives of the assailant; 85.4% of victims of domestic violence were spouses or partners of the assailant. Likewise, 30.3% of sexual assault contacts were incest and 50.8% of the domestic violence assailants had been abused as children.

The prevalence of battered wives in Alaska is noted by the Alaska Legal Services staff who estimate that 70% to 75% of the women seeking help from their Agency with divorces were battered by their husbands.⁹

Figure 4-27

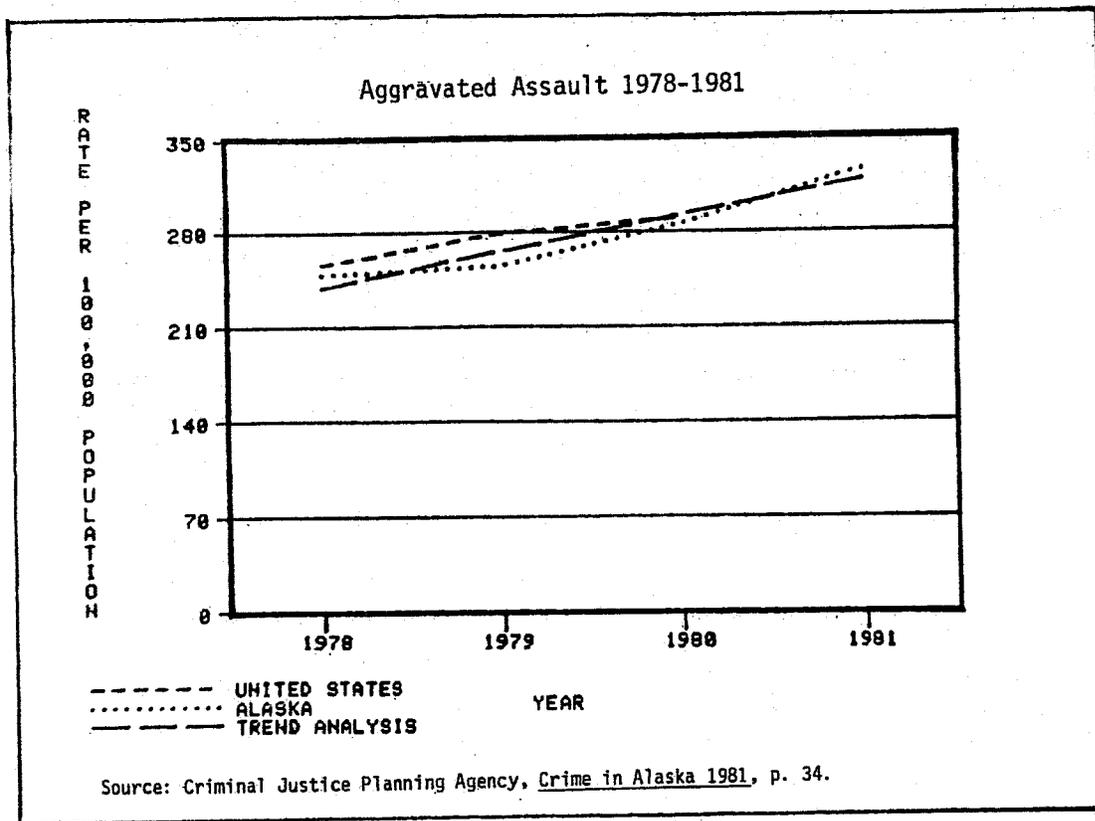


Aggravated Assault: Aggravated assault is defines as "...an unlawful attack by one person upon another for the purpose of inflicting severe bodily injury. It is usually accompanied by the use of a weapon or other means likely to produce death or great bodily harm."¹⁰

Most aggravated assaults occur within the family unit or among neighbors and acquaintances. The victim-offender relationship and the nature of the attack show similarities to the crime of murder.

There were 1,564 aggravated assaults reported in Alaska for 1981 and 1,364 in 1980. The Alaskan rate of aggravated assaults was 327 per 100,000 Alaskans in 1981. This represents a 14% increase over the 286 rate for 1980.

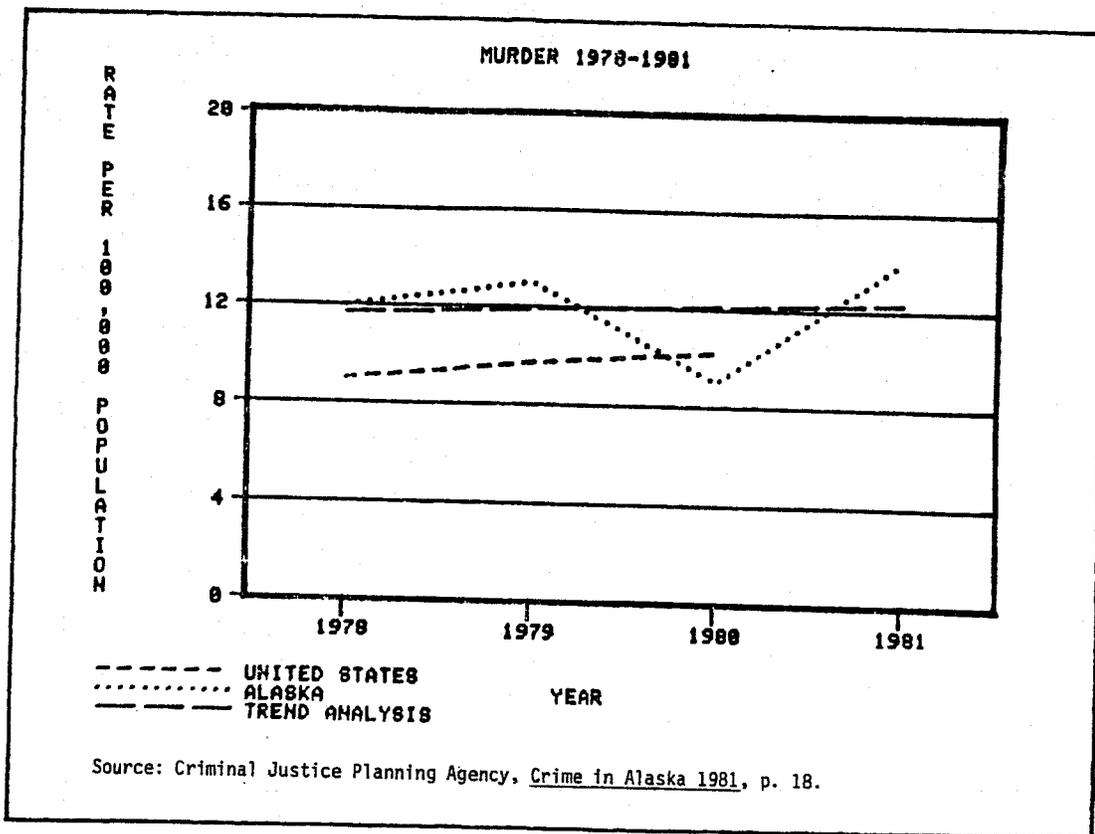
Figure 4-28



Criminal Homicide: Criminal homicide is defined as the willful killing of another. "Murder is believed to be a problem which is beyond the control of law enforcement agencies. Most occur on the spur of the moment, often in a heated quarrel."11

The criminal justice system reported 60 murders during 1981 and 42 murders in 1980 in Alaska. In 1981, there were 14 murders for every 100,000 Alaskans. This is a 56% increase over the rate of 9 for 1980. These figures are not consistent with the vital event statistics. Deaths reported as "undecided if suicide, homicide, or accident" are referred to a coroner's inquest, the results of which may not be recorded in death statistics.

Figure 4-29



Of the 60 homicides reported to the Alaska criminal justice system in 1981, firearms were used in 78% of the murders and knives in 10%. The firearms category includes handguns (43%) and rifles/shotguns (35%). Thirty-nine percent of the murders involved relatives, seven percent friends, and thirty-one percent acquaintances. Twenty-nine percent occurred during arguments and thirteen percent during brawls due to alcohol. Sixteen percent occurred during the commission of a felony with robbery accounting for thirteen percent and rape three percent. Five percent involved narcotic drugs.

Figure 4-30

Murder Type of Weapon 1981		
WEAPON	NUMBER OF OFFENSES	PERCENT
Handgun	26	43
Rifle and Shotgun	21	35
Strangulation	3	5
Knife/Cutting Instrument	6	10
Asphyxiation	1	2
Fire	1	2
Blunt Object	1	2
Unknown	1	2
TOTAL	60	100

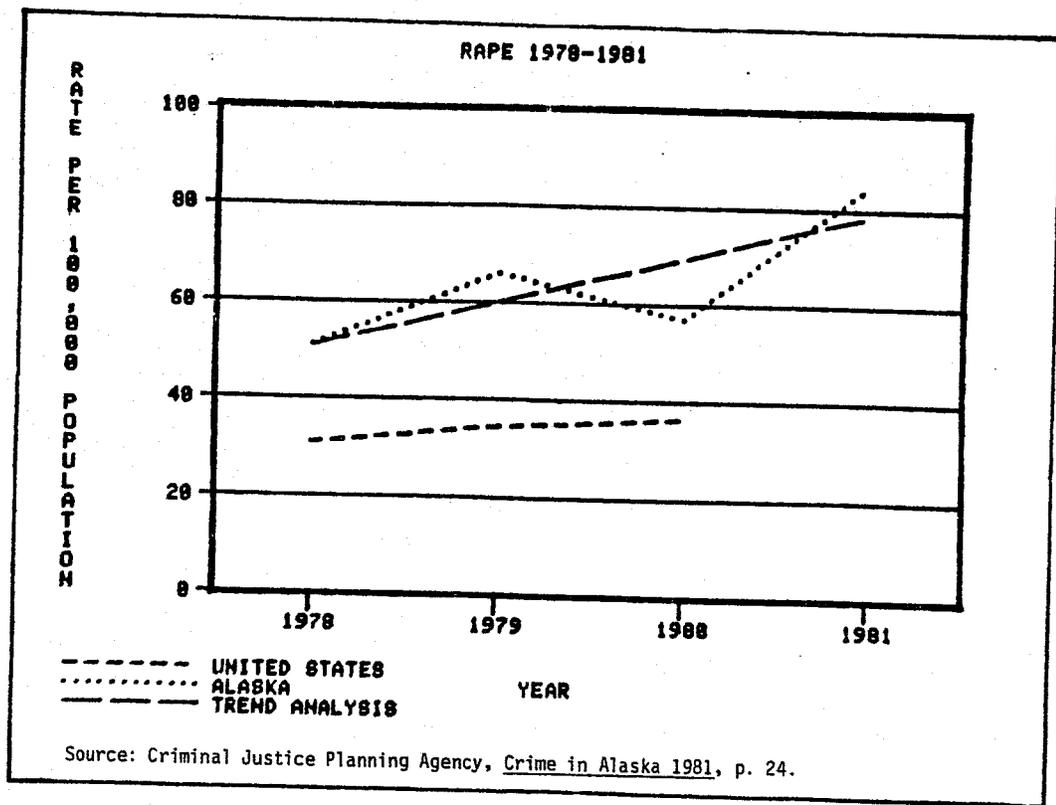
Murder Victim/Offender Relationship 1981		
RELATIONSHIP	NUMBER OF OFFENSES	PERCENT
Husband	1	2
Wife	7	11
Father	2	3
Mother	1	2
Son	1	2
Daughter	3	5
Brother	5	8
Sister	1	2
Stepmother	1	2
Commonlaw Husband	1	2
Friend	4	7
Acquaintance	19	31
Stranger	4	7
Unknown Relationship	10	16
TOTAL	60	100

Source: Criminal Justice Planning Agency, Crime in Alaska 1981, p. 19.

Forcible Rape: Forcible rape is defined as the carnal knowledge of a female forcibly and against her will. This offense is generally estimated to be seriously under-reported due to the victim's fear or embarrassment.

Forcible rapes reported to police and state troopers in 1981 totaled 419, with 320 in 1980. In 1981 there were 85 rapes for every 100,000 Alaskans. This represents a 49% increase over the 57 rate for 1980. The rate of rape in Alaska was over 100% higher than the national rate in 1979.

Figure 4-31



The incidence of violent crimes is influenced by the consumption of alcohol, mental illness, unemployment and poverty, drug abuse, and other social and psychological factors. It is felt that alcohol is a major factor in many of the homicides, rapes, and aggravated assaults that occur each year. Measures to reduce consumption are identified on page 4-22. Mental illness is also a causal factor for violent crimes, particularly those involved in family conflict. A section on mental illness and emotional disorders can be found on page 4-28.

Health System Responses

HEALTH STATUS PROBLEM	ENVIRONMENTAL AND LIFESTYLE & BIOLOGICAL CAUSAL FACTORS	SUGGESTED HEALTH SYSTEM RESPONSES
<p>VIOLENT CRIMES ←</p>	<p>Consumption of alcohol</p> <p>Mental Illness and Emotional Disorders</p> <p>Unemployment & poverty</p> <p>Drug Abuse</p> <p>Other social and psychological factors</p>	<p>Measures to reduce consumption</p> <p>Measures to promote good mental health</p> <p>Mental health diagnosis and treatment</p>

Those responses specifically directed toward substance abuse and mental health are referenced in the categorical sections of this chapter.

Child abuse and neglect cases are referred to the Division of Family and Youth Services, which provides counseling services, family crisis intervention, and foster or institutional care where necessary.

State funding (\$3.9 million) was appropriated for FY 1984 through the Council on Domestic Violence and Sexual Assault to support 19 Domestic Violence and Sexual Assault programs in 14 Alaska communities. State monies through the state Division of Family and Youth Services support a similar program in Kotzebue. There are volunteer groups active in at least five additional communities in the state.

VENEREAL DISEASES

This category includes gonorrhea, syphilis, and other venereal diseases. Gonorrhea continues to be the most significant communicable disease problem in the State. From 1973 to 1981, the statewide rate of gonorrhea increased 10.6% from 862 cases per 100,000 population in 1973 to 953 cases in 1981. However, the 1981 rate of 953 is 12.4% less than the 1970-1980 average rate of 1071. Nationally, the reported incidence of gonorrhea has increased 9.4% from 405 in 1973 to 443 in 1980. However, the 1980 rate is 1.8% less than the average for the 1973-1980 period. The Alaska rate in 1980 was 2.6 times greater than the U.S. rate. Discussion of gonorrhea incidence for the high risk groups as defined by age, sex, and race differences can be found in chapter 3 on pages 3-24, 3-31, 3-38, and 3-55.

It must be borne in mind when interpreting these statistics that the rates presented here do not represent true incidence, but rather reflect utilization and contact tracing activities which are approximations of true incidence. Consequently, the data at best reflect an unknown percentage of the whole picture to the extent that services are more accessible or differentially utilized by one segment of the population over another, for whatever reason. Similarly, a trend of increasing utilization may indicate a growing awareness of the problem by the population instead of a real expansion of the problem. For example, it is likely that the actual incidence of gonorrhea is more accurately reflected in case reports of men than those of women. Gonorrhea in men more often causes acute symptoms which require them to seek treatment. Other possible factors include changes in the sexual activity of specific age groups and changes in diagnostic or reporting practices.

Health Systems Responses

HEALTH STATUS PROBLEM	ENVIRONMENTAL, LIFESTYLE AND BIOLOGICAL CAUSAL FACTORS	SUGGESTED HEALTH CARE SYSTEM RESPONSES
Venereal Diseases	Lack of necessary precautions Sexual activity	Health education regarding VD & prevention measures (Use of prophylaxis, awareness of partner's health, etc.) Increased V.D. testing (as part of general physical exam, prenatal, premarital) Accessible treatment

Health education for youth regarding sexually transmissible diseases is generally sponsored at the local level. Young adults are at highest risk for venereal diseases, but health education in the schools regarding sexually transmissible diseases remains a controversial issue.

Screening for venereal disease is conducted by public health nurses, public health aides, community health representatives, and public health advisors throughout the State who have received venereal disease training by the Section of Disease Control. Lab tests are performed by one of the State's three regional laboratories, by one of the seven Indian Health Service hospital laboratories, or by one of the two major military laboratories.

Venereal diseases are tested and treated by private physicians, public and private hospital outpatient settings, and health centers throughout the State. The primary public resource is the State public health nurses.

FOOD AND WATER BORNE DISEASES

Food and water borne diseases refer to those communicable diseases which are transmitted by contaminated water and food. Salmonella is often classified as a food borne illness because food such as egg products, meat, poultry and fish are the predominant vehicles of infection. Shigella is also transmitted by contaminated food and water, particularly due to unsanitary food handling. Shigella is particularly common under conditions of crowding and where sanitation is poor and malnutrition high.

Botulism is a potentially lethal food borne disease. Improperly canned or smoked fish is the source of one type of intoxication. Proper home canning and adequate boiling of food before serving are essential.

Hepatitis A is also transmitted by contaminated food and water including milk, sliced meats, salads, bakery products, and raw or undercooked clams and oysters.

Giardiasis is a diarrheal illness acquired through fecal-oral transmission. Fecal contaminated water is one source of transmission. Infant care centers are also a frequent foci of infection where hand-to-mouth transmission is responsible.

Food and water borne diseases are, in general, caused by contaminated food and water resulting from inadequate preparation, cooking and storage of food products; unsanitary food handling; inadequate community sanitation; poor water supplies; and poor personal hygiene.

The combined reported incidence rates for botulism, salmonella, shigella and hepatitis A fell 65% from 147.91 per 100,000 population in 1973 to 51.79 in 1981; however, the U.S. rate for these conditions in 1980 was 30.3% less than Alaska's rate (Figures 4-34, 4-35, 4-36, and 4-37).

A look at individual rates, however, shows botulism, with the exception of 1978, to have little variance year to year. Salmonella showed an annual decrease from 1973 to 1976, and an annual increase since then. Shigella maintained a steady rate from 1974 to 1978, and has been on the increase since then. Hepatitis A, however, showed a dramatic decrease from the epidemic year of 1976 to the present. This significant decrease in incidence served to bring the combined enteric disease rate down. Hepatitis A is a cyclical disease in Alaska, and it is probable that it will show another marked increase in the future as a new generation of susceptibles builds up in the population.

Figure 4-32

Reported Incidence of Gonorrhea
by Public Health District, Alaska and U.S., 3 Yr. Avg., 1970-1981

(Rate per 100,000 Population)

AREA	1973		1974		1975		1976		1977		1978		1979		1980		1981		1970-1980		
	#	rate	#	rate	#	rate	#	rate	#	rate	#	rate	#	rate	#	rate	#	rate	#	rate	
SOUTHEAST	626	436	689	468	642	434	669	440	748	476	803	512	803	511	678	423	604	357	2408	44	
SOUTHCENTRAL	5853	920	6799	1010	8019	1099	9566	1208	10566	1295	10772	1323	9998	1251	9362	1159	8298	975	29532	112	
NORTHERN	2090	959	2713	1129	3232	1242	3803	1448	4200	1658	4467	1817	4156	1671	3855	1499	3338	1259	11223	129	
ALASKA	8569	862	10201	965	11893	1045	14038	1163	15514	1264	16042	1318	14957	1241	13895	1135	12240	953	43063	107	
U.S.	-	405	-	432	-	473	-	470	-	467	-	468	-	459	-	443	-	-	-	-	-

Note: Year under which rate is shown is central year of 3 year period; # is total cases over the 3 year period.

- Source: 1) State of Alaska Section of Communicable Disease Control, Annual Communicable Disease Report, 1971-1982.
 2) U.S. DHHS Centers for Disease Control, Morbidity and Mortality Weekly Report, Annual Summary, 1980.
 3) State of Alaska Department of Health and Social Services, Division of Planning, Policy and Program Evaluation, population estimates, 1983.

Figure 4-33

Reported Incidence of Syphilis
by Public Health District, Alaska and U.S., 3 Yr. Avg., 1970-1981

(Rate per 100,000 Population)

AREA	1973		1974		1975		1976		1977		1978		1979		1980		1981		1970-1980		
	#	rate	#	rate																	
SOUTHEAST	17	11.8	32	21.7	50	33.8	36	23.7	25	15.9	11	7.0	11	7.0	12	7.5	13	7.7	68	12.6	
SOUTHCENTRAL	129	20.3	156	23.2	197	27.0	183	23.1	185	22.7	169	20.8	121	15.1	124	15.4	121	14.2	488	18.7	
NORTHERN	31	14.2	27	11.2	40	15.4	60	22.8	68	26.8	63	25.6	49	19.7	37	14.4	29	10.9	152	17.5	
ALASKA	177	17.8	215	20.3	287	25.2	279	23.1	278	22.7	243	20.0	181	15.0	173	14.1	163	12.7	708	17.6	
U.S.	-	42.0	-	40.0	-	38.0	-	33.7	-	30.1	-	30.0	-	30.7	-	30.4	-	-	-	-	-

Note: Year under which rate is shown is central year of 3 year period; # is total cases over the 3 year period.

Source: 1) State of Alaska Section of Communicable Disease Control, Annual Communicable Disease Report, 1971-1982.

2) U.S. DHHS Center for Disease Control, Morbidity and Mortality Weekly Report, Annual Summary, 1980.

3) State of Alaska Department of Health and Social Services, Division of Planning, Policy and Program Evaluation, population estimates, 1983.

Figure 4-34

Reported Incidence of Botulism
by Public Health District, Alaska and U.S., 3 Yr. Avg., 1970-1981

(Rate per 100,000 Population)

AREA	1973		1974		1975		1976		1977		1978		1979		1980		1981		1970-1980		
	#	rate	#	rate																	
SOUTHEAST	0	0.00	0	0.00	3	2.03	4	2.63	4	2.55	1	0.64	0	0.00	0	0.00	2	1.18	4	0.74	
SOUTHCENTRAL	12	1.89	15	2.23	17	2.33	16	2.02	13	1.59	2	0.25	3	0.38	3	0.37	3	0.35	33	1.26	
NORTHERN	2	0.92	2	0.83	2	0.77	4	1.52	4	1.58	9	3.66	5	2.01	14	5.44	9	3.40	12	1.38	
ALASKA	14	1.41	17	1.61	22	1.93	24	1.99	21	1.71	12	0.99	8	0.66	17	1.39	14	1.09	49	1.22	
U.S.	-	0.02	-	0.01	-	0.01	-	0.03	-	0.06	-	0.05	-	0.02	-	0.04	-	-	-	-	-

Note: Year under which rate is shown is central year of 3 year period; # is total cases over the 3 year period.

Source: 1) State of Alaska Section of Communicable Disease Control, Annual Communicable Disease Report, 1971-1982.

2) U.S. DHHS Centers for Disease Control, Morbidity and Mortality Weekly Report, Annual Summary, 1980.

3) State of Alaska Department of Health and Social Services, Division of Planning, Policy and Program Evaluation, population estimates, 1983.

Figure 4-35

Reported Incidence of Salmonella
by Public Health District, Alaska and U.S., 3 Yr. Avg., 1970-1981

(Rate per 100,000 Population)

AREA	1973		1974		1975		1976		1977		1978		1979		1980		1981		1970-1980		
	#	rate	#	rate																	
SOUTHEAST	54	37.6	48	32.6	54	36.5	18	11.8	29	18.5	24	15.3	19	12.1	13	8.1	14	8.3	103	19.1	
SOUTHCENTRAL	146	22.9	106	15.7	93	12.7	89	11.2	101	12.4	115	14.1	129	16.1	167	20.7	170	20.0	418	16.0	
NORTHERN	77	35.3	85	35.4	88	33.8	61	23.2	45	17.8	45	18.3	40	16.1	47	18.3	57	21.5	198	22.8	
ALASKA	277	27.9	239	22.6	235	20.7	168	13.9	175	14.3	184	15.1	188	15.6	227	18.5	241	18.8	719	17.9	
U.S.	-	11.4	-	10.4	-	10.6	-	10.7	-	12.9	-	13.5	-	15.1	-	14.9	-	-	-	-	-

Note: Year under which rate is shown is central year of 3 year period; # is total cases over the 3 year period.

- Source: 1) State of Alaska Section of Communicable Disease Control, Annual Communicable Disease Report, 1971-1982.
 2) U.S. DHHS Center for Disease Control, Morbidity and Mortality Weekly Report, Annual Summary, 1980.
 3) State of Alaska Department of Health and Social Services, Division of Planning, Policy and Program Evaluation, population estimates, 1983.

Figure 4-36

Reported Incidence of Shigella
by Public Health District, Alaska and U.S., 3 Yr. Avg., 1970-1981
(Rate per 100,000 Population)

AREA	1973		1974		1975		1976		1977		1978		1979		1980		1981		1970-1980		
	#	rate	#	rate																	
SOUTHEAST	5	3.5	2	1.4	2	1.4	3	2.0	4	2.5	5	3.2	8	5.1	7	4.4	7	4.1	32	5.9	
SOUTHCENTRAL	271	42.6	38	5.6	67	9.2	102	12.9	123	15.1	90	11.1	271	33.9	285	35.3	287	33.7	764	29.2	
NORTHERN	124	56.9	64	26.6	47	18.1	7	2.7	8	3.2	24	9.8	42	16.9	42	16.3	24	9.1	231	26.6	
ALASKA	400	40.2	104	9.8	116	10.2	112	9.3	135	11.0	119	9.8	321	26.6	334	27.3	318	24.7	1027	25.5	
U.S.	-	10.8	-	10.7	-	7.8	-	6.2	-	7.4	-	9.0	-	9.2	-	8.4	-	-	-	-	-

Note: Year under which rate is shown is central year of 3 year period; # is total cases over the 3 year period.

Source: 1) State of Alaska Section of Communicable Disease Control, Annual Communicable Disease Report, 1971-1982.
 2) U.S. DHHS Centers for Disease Control, Morbidity and Mortality Weekly Report, Annual Summary, 1980.
 3) State of Alaska Department of Health and Social Services, Division of Planning, Policy and Program Evaluation, population estimates, 1983.

Figure 4-37

Reported Incidence of Hepatitis A
by Public Health District, Alaska and U.S., 3 Yr. Avg., 1970-1981

(Rate per 100,000 Population)

AREA	1973		1974		1975		1976		1977		1978		1979		1980		1981		1970-1980		
	#	rate	#	rate	#	rate	#	rate	#	rate	#	rate									
SOUTHEAST	63	43.9	76	51.7	84	56.8	74	48.7	42	26.7	43	27.4	35	22.3	35	21.8	15	8.9	253	47.0	
SOUTHCENTRAL	313	49.2	221	32.8	1374	188.3	1779	224.6	1812	222.1	611	75.1	155	19.4	80	9.9	65	7.6	2385	91.2	
NORTHERN	403	184.9	649	270.0	637	244.7	527	200.6	242	95.5	107	43.5	30	12.1	20	7.8	12	4.5	1002	115.3	
ALASKA	779	78.4	946	89.5	2095	184.1	2380	197.2	2096	170.8	761	62.5	220	18.2	135	11.0	92	7.2	3640	90.5	
U.S.	-	24.1	-	19.5	-	16.8	-	15.5	-	14.4	-	13.5	-	13.8	-	12.8	-	-	-	-	-

Note: Year under which rate is shown is central year of 3 year period; # is total cases over the 3 year period.

Source: 1) State of Alaska Section of Communicable Disease Control, Annual Communicable Disease Report, 1971-1982.

2) U.S. DHHS Center for Disease Control, Morbidity and Mortality Weekly Report, Annual Summary, 1980.

3) State of Alaska Department of Health and Social Services, Division of Planning, Policy and Program Evaluation, population estimates, 1983.

Except in the case of major outbreaks, there is inconsistency in the reporting of food and waterborn diseases and it is difficult to make conclusive statements about their relative incidence. These diseases are under-reported and the actual rates are probably much higher than shown in this Chapter. Of all these diseases, botulism is probably the most accurately tracked. Botulism is a significant problem in Alaska and its incidence is over 34 times that for the U.S. The 1970-1980 average was 1.22 cases per 100,000 population. There was a slight decline in the incidence between 1973 when 1.41 cases per 100,000 population were reported and 1981, when 1.09 cases per 100,000 population were reported. Some of the Alaskan morbidity can be attributed to Native consumption of traditionally prepared foods.

There have been indications that the incidence of giardiasis is increasing, both in Alaska and throughout the world. Since this is not a reportable disease, available data regarding the number of cases that actually occur in Alaska is incomplete (Figure 4-38).

Figure 4-38

POSITIVE TESTS, GIARDIA LAMBLIA
Number of Reports from Northern Regional Laboratory (Fairbanks)
and Southeast Regional Laboratory (Juneau)

Year	Southeast Regional Laboratory	Northern Regional Laboratory	Total
FY 80	24	35	59
FY 81	36	30	66
Total	60	65	125

Source: Section of Laboratories, Division of Public Health, Dept. H&SS

Note: Although both are regional laboratories, in the case of *Giardia lamblia* almost all positive tests are from the community in which the laboratory is situated.

Safe water supplies, appropriate disposal of sewage and solid wastes, and food sanitation remain as significant needs in rural Alaska even though Alaska Area Native Health Service water and sewer construction programs and the State Safe Water Program have improved sanitary conditions in some bush villages. Increasing limitations on funding for these programs has, however, failed to provide many villages with these basic community health safeguards.

Health Systems Responses

HEALTH STATUS PROBLEM	ENVIRONMENTAL, LIFESTYLE AND BIOLOGICAL CAUSAL FACTORS	SUGGESTED HEALTH CARE SYSTEM RESPONSES
FOOD AND WATER BORNE DISEASES	Contaminated food and water	
	Unsanitary food preparation and handling	Environmental health education
	Inadequate storage and cooking of food	Inspection of restaurants and other public establishments
		Education and screening of food handlers
	Poor water supplies	Inspection and treatment of community water supplies
	Carelessness regarding personal sources of water	Education about personal water supplies
	Laboratory services for testing water	
Inadequate community sanitation		
Poor personal hygiene	Health education measures	

Environmental services strive to ensure water quality, sanitation and pest control. The source, availability, and quality of water, as well as the control and sophistication of water treatment and waste disposal systems, differ greatly between communities in Alaska. Much of the rural population relies on their own means to obtain water.

AANHS sanitarians and Municipality of Anchorage staff provide technical assistance and inspections of public water and sewer systems as well as public eating and drinking establishments, swimming pools, schools, etc. State Department of Environmental Conservation staff provide inspection and consultative services for food service establishments (including food handlers classes), food processors, recreational facilities, public accommodations, and institutions (schools, hospitals, and day care centers). The Department also provides inspections and technical assistance regarding public water and sewer systems, environmental pollution control, and solid waste management. The Department's "Village Safe Water" program has produced a comprehensive inventory of water supply, sewage, and solid waste disposal methods in over two-hundred villages. AANHS Environmental Health personnel also work with villages to improve water sources and methods of sewage and solid waste disposal.

Community planning regarding water and sewer system design and maintenance is often criticized. Some communities have maintained that careful consideration was not given by both the community and funding agency concerning the difficulty in cost of maintaining the system once it is built. Without careful mutual planning, the system design may be incompatible with the physical setting and economy of the community.

HEART DISEASE & HYPERTENSION

Mortality: Although falling behind accidents as a leading cause of statewide mortality, age adjustment of the mortality data moves heart disease and hypertension into first place with an age-adjusted rate in 1980 of 173.4 per 100,000 population. This rate is much improved over the U.S. age-adjusted rate for the same year of 205.3 (Figure 3-2, 3-3). The crude mortality rate for heart disease and hypertension has increased 3.6% from 87.3 per 100,000 in 1970 to 89.8 in 1980. Likewise, the 1980 rate is 8.4% greater than the eleven year average rate of 82.4.

Morbidity: Of course this health status problem is also significant as a prevailing cause of chronic disease and disability. In fact, among a host of chronic diseases investigated, heart disease and hypertension placed first in prevalence in the state, affecting an estimated 46,820 individuals or 11.7% of the population (Figure 4-39).

Figure 4-39

Estimated Prevalence of
Various Chronic Diseases and Impairments
in Alaska, 1980

(Rate per 100,000)

Impairment/ Chronic Disease	#	rate
Disabled (1)	36856	14370
Visually Impaired (2)	21546	5380
Cancer	600	149.8
Pediatric Lung/Asthma (3)	2730	3957
End Stage Renal Disease	29	7.2
Hearing Loss (4) (Ak Native)	6098	9520.5
Fetal Alcohol Syndrome (5)	533	1.33/ 1000 live births
Hypertension (6)	46820	16800
Arthritis (7)	7249	1810

1. Prevalence for 18-64 population based on 1970 census applied to 1980 population disabled definition: persons having a condition that potentially poses a handicap to employment
2. 1977 estimated US rate for total visual impairments visually impaired definition: persons with chronic or permanent defects resulting from disease, injury or congenital malformation; PHS X-Code X00-X05
3. Rate based on population 5-14
4. 1978 case rate determined by IHS
5. Based on Seattle estimated rate of 1/750 live births
6. 1974 estimated US rate for all persons 17yrs +
7. 1976 estimated US rate for arthritis, rheumatism, gout

- Sources:
1. US DHEW, Illness Among Indians and Alaska Natives, 1970-1978
 2. US DHEW, NCHS Prevalence of Selected Impairments, US-1977, Series, 10 Number 134
 3. US DHEW, NCHS Characteristics of Persons with Hypertension, US, 1974, Series 1 Number 121
 4. American Cancer Society, 1981 Cancer Facts and Figures
 5. US DHEW, Public Policy and Chronic Disease, A Forum Sponsored by the National Arthritis Advisory Board, 1979
 6. Alaska Department of Education, Division of Vocational Rehabilitation, 1981
 7. End Stage Renal Disease Network, Seattle, WA, 1981
 8. Alaska Lung Association, Anchorage, Alaska, 1981
 9. J.W. Hanson, A.P. Streissguth, D.W. Smith, J. Pediatrics 92, 457 (1978)

One would expect that this problem would show up as a major cause of acute care facility utilization and it does. In the 1983 Annual Hospital Survey, diseases of the circulatory system were the fifth leading cause of discharges in those facilities providing diagnostic information. The rate of utilization was 99.04 per 10,000 population which compares quite favorably to the U.S. rate of 222.86 in 1978. Likewise, diseases of the circulatory system were the fourth leading cause of patient days accounting for 9.37% of all patient days (Figures 3-46, 3-47, 3-48).

Risk Factors: Risk factors for heart disease and hypertension include lack of exercise, cigarette smoking, alcohol use, stress, and nutritional factors.

The statewide cigarette consumption rate, as expressed by packages sold per capita for the population 15 years and older, has remained fairly constant between 1976 and 1980, beginning and ending at 191 packages per capita. U.S. consumption, on the other hand, has declined 3.6% over the same period. Currently, the Alaska per capita consumption rate is 13% greater than the U.S. (Figure 3-9).

One does not have to look far to see possible sources of stress in Alaska. Unemployment has increased from 9.6% to 10.1% of the working force from 1980 to 1982. Over the same period, U.S. unemployment changed from 7.1% to 9.7% (Figure 4-20).

Another indicator of stress is the divorce rate. The statewide rate declined slightly from 58.51 divorces per 100 marriages in 1977 to 57.8 in 1979. However, the rate increased considerably in 1980 to 65.6, and then declined some to 60.2 in 1981 (Figure 4-22).

The statewide consumption of alcohol indicates increasing consumption among the population 19 years of age and older over the last four years, 1979-1982. In 1982 the per capita sale (and "apparent consumption") amounted to 4.58 gallons of absolute alcohol for persons 19 years of age and older.

Health Systems Responses

Cigarette smoking increases the heart rate, arterial blood pressure and stroke volume, as well as producing a rise in free fatty acids, all of which generally increase the risk of severe heart problems. Measures should be taken to reduce the public's consumption of cigarettes. Obesity, poor nutrition or both also produce high risk for heart problems. Blood volume is comparably increased and systemic blood pressure is elevated in as many as two-thirds of overweight individuals. Even moderate weight gain may produce cardiac distress in persons with pre-existing heart disease. Most of the circulatory problems associated with obesity are reversible by weight reduction, making control of weight particularly important. Public education can increase the population's awareness of the seriousness of poor nutrition and obesity. Measures to reduce the availability of food with little nutritive value to youth will help to promote better eating habits in later years. Control of sodium intake, modification of the fat in the diet, and control of calories to affect weight reduction are all methods to be applied in reducing risks of heart disease and hypertension. Cardiopulmonary resuscitation (CPR) training for the public can reduce the number of deaths for those individuals suffering an attack.

The following display identifies causal factors for the problem of heart disease, most of which relate to lifestyle, biology and health systems responses.

HEALTH STATUS PROBLEM	ENVIRONMENTAL, LIFESTYLE AND BIOLOGICAL CAUSAL FACTORS	SUGGESTED HEALTH CARE SYSTEM RESPONSES
<p>HEART DISEASE and HYPERTENSION</p>	<p>Cigarette smoking, poor nutrition, obesity</p> <p>Inadequate physical activity</p> <p>Stress (personal and occupational)</p> <p>Heredity, congenital anomalies of the circulatory system</p> <p>Other biological factors related to complex internal systems</p>	<p>Measures to reduce cigarette smoking, increase the public's concern for nutrition, provision of nutrition counselling, reduce the availability of foods of little nutritive value</p> <p>Public education regarding the effect of lifestyle in heart disease and health in general</p> <p>Medical care available to respond to chronic health problems including heart disease</p> <p>CPR training in all communities</p>

The University of Alaska at Anchorage provides continuing education opportunities for nurses, particularly those in emergency rooms, regarding cardiac care.

The Alaska Heart Association sponsors media campaigns concerning factors that increase the risk of heart disease and hypertension. The Alaska Heart Association and the Red Cross have also sponsored courses in cardio-pulmonary resuscitation (CPR) in many communities throughout the State. Over 13,000 Alaskans were trained in CPR during 1977-1978 in Anchorage and Fairbanks alone.

The public health nurse performs screening tests appropriate to age, such as physical growth measurement (height, weight, and temperature) and pulse, respiration, blood pressure, and child development measurements.

The Regional Emergency Medical Services are developing transportation and communication protocols and training opportunities regarding cardiac care and identifying acute care emergency capabilities for cardiac patients. Pre-hospital advanced life support systems in Anchorage and Fairbanks operate with radio communication support from physician consultants.

MALIGNANT NEOPLASMS

Mortality: Cancer is the third leading cause of mortality in the state. When the 1980 mortality data are age adjusted, however, cancer moves up to the second leading cause of mortality at 128.8 cases per 100,000 population in 1979, compared to the U.S. rate of 134.2 (Figures 3-2, 3-3). Since 1970, the mortality due to cancer has increased 13.7% from 61.5 in 1970 to 69.9 in 1980. Similarly, the 1980 rate is 13.5% greater than the eleven year average rate of 61.6. Cancer of the respiratory/intrathoracic organs, followed by cancer of the digestive organs/peritoneum, are the major sources of cancer mortality in the state. In each case, the statewide rate is less than half the U.S. rate. Patients with chronic, debilitating disease often leave the state in the course of their illness. To the extent that individuals change their permanent and legal place of residence, mortality data may not adequately reflect the pattern of this illness (Figure 4-40).

Figure 4-40

CANCER DEATH RATES BY HSA (1975-1979) Statewide (1979) and US (1979) (Per 100,000 population)					
Site of Cancer	U.S.	ALASKA	SC HSA	SE HSA	NO HSA
Lip/Oral Cavity/Pharynx	3.6	1.6	1.6	1.6	1.1
Digestive Organs/Peritoneum (Liver)	49.5	15.5 (1.2)	15.4 (1.5)	19.5 (0.4)	12.9 (0.6)
Respiratory/Intrathoracic Organs	46.7	18.8	17.8	26.6	14.3
Bone/Skin/Connective Tissue	N/A	2.1	2.0	4.0	1.1
Breast	16.0	5.0	4.6	7.2	4.7
Uro-Genital Organs (Prostate)	28.5	8.0 (1.9)	6.4 (1.0)	13.9 (5.6)	8.0 (2.8)
Lymphatic-Hematopoietic Tissue	16.7	5.3	5.0	6.0	4.1
Other/Unspecified	22.3	10.8	11.0	10.3	9.1
Total	183.5	67.0	63.8	89.1	55.3

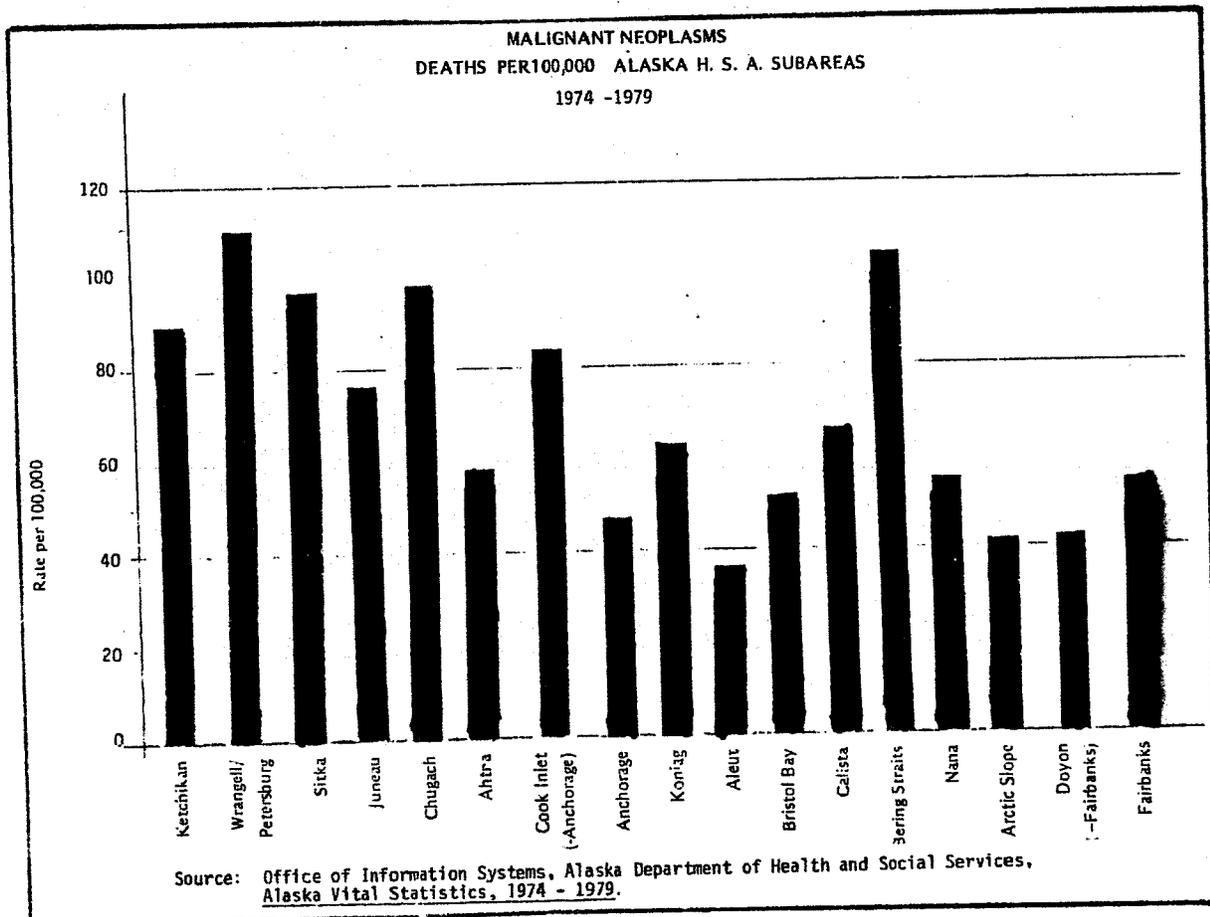
Sources: U.S. - 1979 Annual Vital Statistics Report
Alaska/HSA's - 5 year average (1975-1979), Office of Information Systems/SE

Acute Care Utilization: Cancer shows up as the fifth leading cause of patient days in AANHS acute care facilities (4.5% of all patient days) and the eleventh leading cause of discharges (1.8% of all discharges). In the 1983 Acute Care Survey, neoplasms accounted for 3.41% of the reported statewide discharges and had a morbidity rate of 50.87 per 100,000 population as compared to the U.S. rate of 118.24 in 1978 (Figures 3-46, 3-47).

Risk Factors: Cigarette smoking has been identified as the major single cause of cancer mortality. Cigarette consumption, as expressed by packages sold per capita for the population 15 years of age and older, has remained fairly constant at 191 packages per capita from 1976 to 1980. U.S. consumption, on the other hand, has declined 3.6% over the period. Currently, the Alaska per capita consumption rate exceeds the U.S. rate by 13% (Figure 3-9).

The use of alcohol, in conjunction with smoking, acts synergistically to increase the risk of several forms of cancer. While data on the combined consumption of alcohol and cigarettes are unavailable, the data cited previously indicating increasing consumption of alcohol statewide with rates that currently exceed U.S. consumption taken together with the cigarette consumption information would make it reasonable to conclude that the combined use likewise exceeds U.S. consumption.

Figure 4-41



Health Systems Responses

Additional causal factors of cancer are continually being discovered through international research. The increase in the consumption of cigarettes in the State of Alaska is a lifestyle characteristic which causes particular concern in relation to cancer.

HEALTH STATUS PROBLEM	ENVIRONMENTAL, LIFESTYLE AND BIOLOGICAL CAUSAL FACTORS	SUGGESTED HEALTH CARE SYSTEM RESPONSES
CANCER	<p>Smoking cigarettes and other tobacco</p> <p>Excess consumption of harmful food additives and alcohol</p> <p>Air pollution</p> <p>Chemical hazards, occupational risk in mining and manufacturing</p>	<p>Measures to reduce smoking</p> <p>Health education regarding smoking and reduction of access</p> <p>Restricted areas for smoking in public places</p> <p>Health education regarding nutrition</p> <p>Effort to reduce air pollution</p> <p>Health inspection of mining and manufacturing establishments</p> <p>Early diagnosis and treatment</p>

The American Cancer Society and the American Red Cross sponsor media campaigns to reduce smoking and to increase awareness regarding personal habits contributing to the risk of cancer. Health education materials regarding cancer and health are also provided.

The SouthCentral HSA has focused their plan to uterine-cervical cancer and lung cancer. Uterine cancer screening is a regular part of pre-marital, annual physical, and family planning services provided by the public and private sector. The Alaska Lung Association distributes educational material regarding lung cancer and has sponsored smoking cessation clinics in various communities in the State.

State Public Health Centers provide comprehensive women's health care including PAP smears, breast examination and self-exam training, and other early detection services. The Breast Cancer Detection Center in Fairbanks provides free breast examinations, including mammography when indicated, and provides instruction in self-examination.

The radiation therapy program at Providence Hospital provides treatment to Alaskans from all over the State. The program is also used extensively by the military and Alaska Area Native Service on a contract basis.

VACCINE PREVENTABLE

Communicable diseases which can be controlled through immunization are grouped together because the causes of the problem, as well as the health system responses, are distinct from that of food and water borne or venereal diseases. Immunizable diseases include diphtheria, rubella (German measles), rubeola (measles), pertussis (whooping cough), polio, tetanus, and mumps. Immunizable diseases also include diseases of animals communicable to man; among among these are rabies and brucellosis (an endemic disease of caribou). Programs for immunization of animals appear to deserve more attention than has been received. The number of diseases included in this category will increase as new disease immunizations are developed and widely utilized. The incidence of immunizable diseases is of concern because preventive measures are currently available that could eliminate the occurrence of these diseases. Immunization for rubella, or German measles, is particularly important because of the potential threat to pregnant mothers. Diphtheria is a serious disease which is rare in the United States although there have been a few cases in Alaska. (During 1975, eleven cases of diphtheria were reported in Alaska.)

Health Systems Responses

The major causal factor for morbidity from immunizable diseases is individual negligence in getting the immunizations. It is important to continue health promotion measures that encourage individuals to obtain immunizations.

HEALTH STATUS PROBLEM	ENVIRONMENTAL, LIFESTYLE AND BIOLOGICAL CAUSAL FACTORS	SUGGESTED HEALTH CARE SYSTEM RESPONSES
IMMUNIZABLE DISEASES	Personal negligence in getting immunized In-migration of new residents and visitors	Health promotion measures regarding immunization Continuation of "Well Baby" immunization promotion program Immunization services available in all Alaskan communities Personnel from the State or private sector to administer vaccinations.

The State of Alaska currently participates in the Federal Immunization Program which distributes "Well Baby" cards to new mothers reminding them of the recommended immunization schedule. Alaskan children are required to be immunized against diphtheria, rubella, tetanus, polio, rubeola, and pertussis prior to school admission. The immunization level for the school age population in Alaska is estimated by the Governor's Office at ninety percent. This is the best school age immunization rate of any state in the nation.

The State public health nurses performed 56,920 immunizations during FY 78 including, but not limited to, immunizations for diphtheria, polio, smallpox, typhoid, and measles/rubella. Immunizations are also provided by Alaska Area Native Health Services and the private sector.

Figure 4-42

Immunization Success, 1980			
Vaccine-Preventable Childhood Disease Case Rates, Per 100,000 Population, Alaska, 1960, 1970, and 1980			
Disease	1960	1970	1980
Polio	.9	-	-
Diphtheria	.4	-	-
Pertussis	1.8	1.0	1.2
Rubella	146.4	46.3	3.0
Rubeola	557.1	47.3	1.5
Tetanus	-	-	-
Mumps	550.5	152.5	3.8

Source: Communicable Disease Bulletin, Week ending May 9, 1981 - No. 9, AK Dept of Health and Social Services

OTITIS MEDIA AND RESPIRATORY DISEASES

Mortality: Flu, pneumonia and other respiratory diseases are responsible for mortality, acute morbidity, and chronic disability. Mortality due to influenza, pneumonia, and other respiratory conditions declined 37.3% from 31.3 per 100,000 population in 1970 to 19.5 in 1980. Likewise, the 1980 rate was 14.1% less than the eleven year average of 22.7. Because mortality is only one possible consequence of respiratory disease and since the conditions leading to mortality are amenable to medical intervention, it is likely that the change in mortality does not accurately represent the morbidity incidence.

Mortality/Disability: Most significant among disabling conditions in the state is otitis media, an inflammation of the middle ear usually resulting from an upper respiratory infection. It is a potentially serious disease because of its consequent effects which may include abnormalities of hearing, deafness, tinnitus, and vertigo. Upper respiratory conditions, followed by otitis media, were the second and third leading causes of ambulatory care total visits in AANHS facilities in FY1980, representing 6.8% and 4.8% of all outpatient visits respectively. In both instances, the number of visits was an increase over the previous two years. In terms of acute care utilization, otitis media placed fourth (4.4% of all discharges) followed by pneumonia (3.8% of all discharges) in leading causes of discharges from AANHS facilities in FY1980. For otitis media, the 473 discharges marked a 64.24% increase over FY 1979; it was, however, a 23.71% decrease from the high of the year before. For pneumonia, on the other hand, the 406 discharges were a 26.48% and 20.12% increase over the preceding two years (Figures 3-39, 3-34, 3-35). In the 1983 Acute Care Hospital Survey, diseases of the respiratory system placed third in leading causes of discharges, accounting for 8.58% of total discharges or 128.22 cases per 10,000 population morbidity rate, as compared to the 1978 U.S. rate of 164.51. Diseases of the respiratory system were the sixth leading cause of patient days accounting for 6.91% (Figures 3-46, 3-47, 3-48).

Risk Factors: Crowded living conditions and poor nutrition are important risk factors in the spread of respiratory infections. Household size is especially important during the winter months when outdoor activity is minimized. According to the Bureau of the Census, the statewide household size in 1980 was 2.93, a reduction from 3.2 in 1970; however, this average household indicator is still greater than the U.S. mean of 2.75 (Figure 4-43).

Figure 4-43

Household Size
by HSA, Alaska, US, 1980
Including Selected Urban-Rural Comparisons
for each HSA

Area	Persons per Household
SE HSA	2.87
Ketchikan	2.76
Skagway-Yakutat-Angoon	3.11
SC HSA	2.99
Anchorage	2.80
Wade-Hampton	4.87
NO HSA	3.01
Fairbanks	2.78
Kobuk	4.20
Alaska	2.93
U.S.	2.75

Source: 1980 Census of Population: Population and Households by States and Counties: 1980; PC80-S1-2, Issued May 1981.

Methodology: Persons per Household for each Census Division, or published by the Bureau of the Census, were multiplied by the ratio of each division population in households to the regions population in households, and the various products totaled for the final figure.

Baseline nutritional data are remarkably unavailable; however, assuming that nutritional status and socioeconomic status are highly correlated, it would be expected that the rural areas of the state are at greatest risk. Much of the rural population does not perceive it as a dangerous condition and early symptoms are commonly ignored.¹² The population most at risk for otitis media includes infants, preschool and school-age children. However, it is the adult population which suffers the most severe complication of otitis media, i.e., cholesteatoma.

Health System Responses

There is some disagreement regarding the causal factors of otitis media. Research implies that nutritional deficiencies have contributed to the increase in otitis media, particularly in bush Alaska. Poor nutritional health certainly reduces the body's ability to fight infection. Environmental conditions, genetic factors, poor sanitation, personal hygiene, and climatic factors are also suspected of contributing to the incidence of otitis media. The early treatment of this disease is crucial, as untreated acute otitis media can result in permanent hearing loss, brain abscesses, meningitis, mastoiditis, and cholesteatomas.¹³

HEALTH STATUS PROBLEM	ENVIRONMENTAL, LIFESTYLE AND BIOLOGICAL CAUSAL FACTORS	SUGGESTED HEALTH CARE SYSTEM RESPONSES
<p>OTITIS MEDIA</p>	<p>Poor nutrition</p> <p>Environmental conditions</p> <p>Neglect in seeking treatment results in serious complications</p>	<p>Measures to improve nutritional health, hygiene sanitation practices</p> <p>Promotion of early treatment of acute otitis media</p> <p>Early treatment for otitis media</p> <p>Services to detect and treat hearing loss from otitis media (including typanoplasty)</p> <p>Follow-up of otitis media cases</p>

Treatment for otitis media is provided through various sources including community health aides, public health nurses, private providers, Crippled Children Program, Alaska Area Native Health Service, and the Communicative Disorders Program. The State Division of Public Health has sponsored hearing tests in various locations throughout the state.

DISEASES OF EARLY INFANCY AND SUDDEN INFANT DEATH SYNDROME

Diseases of Early Infancy: This refers to those conditions that originate during the perinatal period (from twenty-eight weeks gestation to seven days after birth) but most often occur at birth, either during delivery or immediately preceding or following delivery. Causes of perinatal mortality and morbidity include complications of pregnancy and labor, maternal infection affecting the baby, birth injury, immaturity or premature births, and other conditions of the fetus or newborn fetal deaths of unknown cause. This category does not include infant or neonatal morbidity and mortality which are attributed to other categories such as congenital abnormalities. Diseases of early infancy (or certain causes of perinatal mortality and morbidity) were the fifth leading cause of death in Alaska in 1979 and contributed 48% of the deaths for the population under age one.

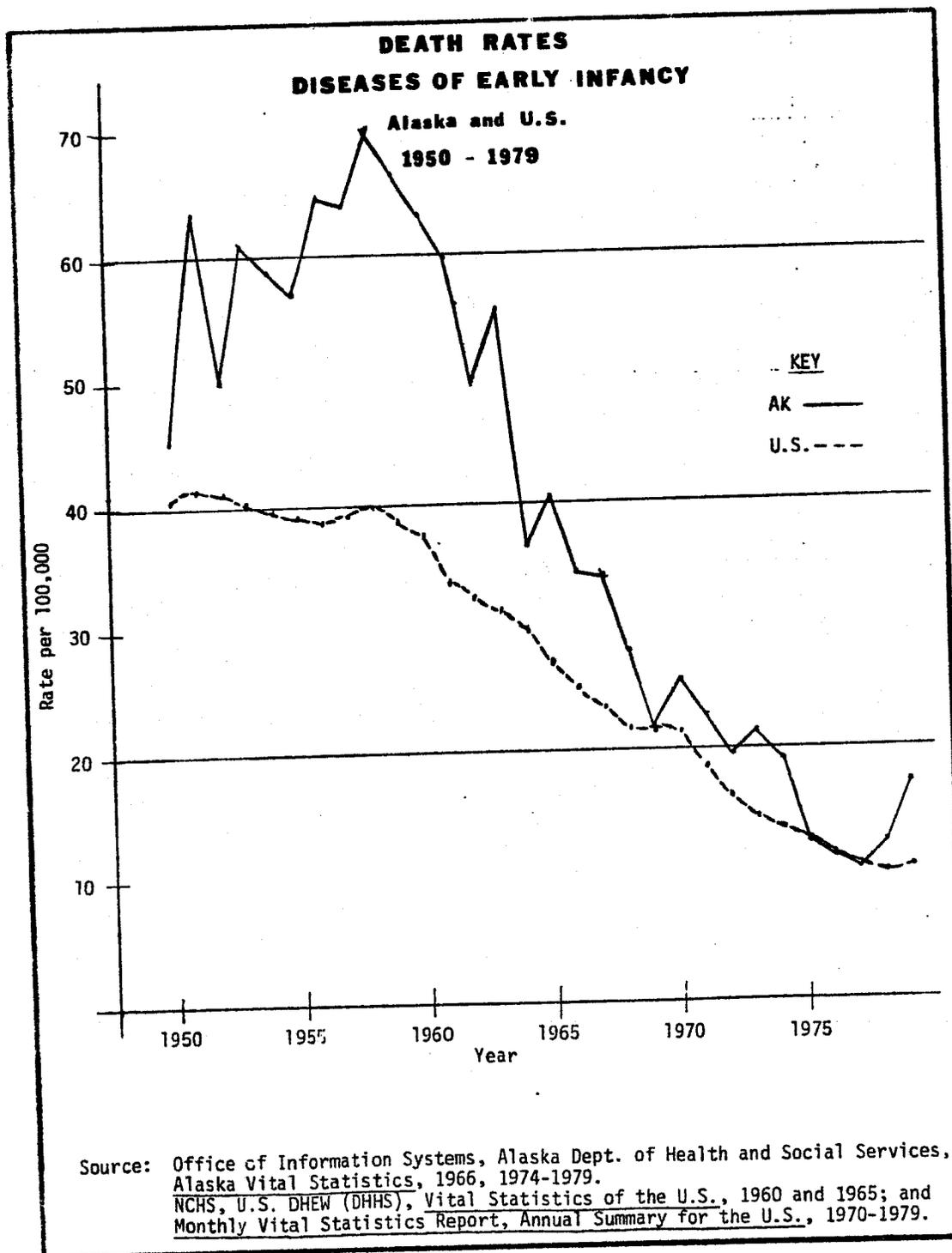
The rate of death from certain causes of perinatal mortality has decreased drastically since 1950 both for the State and the nation. Figure 4-44 depicts that the rate of death in this category was significantly higher in Alaska than in the U.S. prior to the 1970s.

Sudden Infant Death Syndrome: This is the completely unexpected and unexplained death of an apparently well, or virtually well, infant. SIDS was the leading cause of death of Alaskan infants thirty days to one year of age in 1979, when twenty-one deaths were attributed to Sudden Infant Death Syndrome.

Recently, evidence has been accumulating that abnormal sleep patterns with increased risk of breathing interruptions (apnea) may be associated with the unexpected deaths. A variety of factors, such as prematurity and maternal smoking, are emerging as possible contributors to increased risk for sudden infant death, but there is a need to learn more.

Extensive research now under way should refine our ability to identify high risk infants and effectively prevent their deaths.

Figure 4-44



NUTRITION

The quality of nutrition, including both malnutrition and over nutrition, affects the physical as well as the mental health of the population. The objective of proper diet is to achieve and maintain the desirable body composition. In adults, body weight in relation to weight in relation to height, frame, and sex is useful as an indication of overall nutritional status. A wide variety of foods in the diet tends to insure an adequate intake of all essential nutrients.

There are both micro- and macro-nutrients. Micro-nutrients include vitamins and some mineral elements essential for health. Vitamins are generally consumed in small amounts and are classified as fat-soluble or water-soluble. Macro-nutrients include carbohydrates, fats, and proteins which metabolize to essential compounds (glucose, fatty acids, amino acids). Their main functions are to provide energy and to take part in the structural make-up of the body. Pregnant women and lactating women, pre-school children, and populations of particular social and economic environment are especially vulnerable to under-nutrition.¹⁴ Improved nutrition before and during reproductive years would be expected to improve pregnancy outcome.

The capacity of the body to store protein and carbohydrates is limited. Excess food is converted into fat and stored. Consumption of poly-unsaturated fats, such as vegetable oils in place of animal fats, is recommended as a factor in reducing the incidence of heart disease. Excessive consumption of sugar has been blamed for various health problems including dental caries and heart disease. An increase of fiber in the diet is thought to play a role in reducing the risk of cancer of the colon. Persons more than 30% overweight are more susceptible to morbidity and death from heart disease, stroke, kidney disease, diabetes, cancers, and various diseases of the digestive system.

Research has linked low blood hemoglobin levels (iron deficiency anemia) with increased frequency of illness, susceptibility to infections, lower body weight in children and decreased attentiveness and learning ability. Research done in the state between 1970 and 1976 concluded that of 2,234 Alaska Natives tested, 13% were anemic. The highest rates were found among those over age 16 of whom 21% had low hemoglobin levels, and children under age six, with 19% having low hemoglobin levels.¹⁵ Data gathered in 1983 among participants in WIC (Special Supplemental Food Program for Women, Infants, and Children - USDA) revealed that the percentage of children enrolled who were certified anemic were as follows: Fairbanks - 80%, North Slope - 56%, Norton Sound - 51%, Southeast - 64%, and Juneau - 31%. In Anchorage, 40% of women, infants, and children enrolled in the WIC program were anemic.

There are considerable regional as well as cultural differences in the traditional foods consumed by Alaska Natives, but the traditional diet was generally rich in protein and low in carbohydrates. As white men permanently established themselves in Alaska, the Natives' access to the consumption of sugar increased dramatically. This constituted a radical change in the diet and nutrition of rural villagers

in Alaska. Increased emphasis on subsistence food gathering activities could increase availability of foods of high nutritional value. Education emphasizing wise store-food choices should be available to all Alaskans.

A 1956-1961 Alaska dietary survey found that the current Alaska Native diets were composed of a combination of imported and locally available foods. The kinds of local foods used and their nutritive importance in the diet depended primarily on the geographic location of the village. In the overall per capita diet, local foods supplied one-half or more of the protein, iron, vitamin A, riboflavin, niacin, and ascorbic acid while imported foods supplied most of the carbohydrates and calcium plus one-half or more of the thiamine, calories and fat.¹⁶

An example of the recent change in food source in rural Alaska is provided by information collected by Kenneth Peterson, M.D. (1977) in a northern Alaska community. He found that during 1968, 14,000 cans of soda pop were delivered to the village from barge orders and in 1976, 212,000 cans of pop were delivered to this community of approximately 400 people. There has been a tremendous increase in the incidence of dental caries in this community.¹⁷

Health Systems Responses

HEALTH STATUS PROBLEM	ENVIRONMENTAL, LIFESTYLE AND BIOLOGICAL CAUSAL FACTORS	SUGGESTED HEALTH CARE SYSTEM RESPONSES
NUTRITIONAL DEFICIENCIES AND POOR NUTRITION	Poor eating habits, high incidence of anemia	<p>Health education regarding nutrition, health, and food economics</p> <p>Increase emphasis on foods with complex carbohydrates while not ignoring the importance of other nutrients</p> <p>Special nutrition education for pregnant women, mothers of infants & small children, those with chronic & metabolic diseases</p>
	Inadequate amount of exercise	Increased community programs emphasizing the role of nutrition and exercise in good health
	Alcohol consumption	Role for nutrition and health education in the rehabilitative process

Health System Responses:

Health education is not routinely offered as part of school curricula. Further information is needed regarding the health education services provided in individual schools.

The University of Alaska provides some in-service training in nutrition education to school teachers. The Cooperative Extension Service provides educational material to the public regarding food and nutrition. A state nutrition education curriculum has been developed by the Southeast Alaska Regional Resource Center, under a grant from the Alaska Department of Education, Nutrition Education and Training Program (NETP). It is available from SEARRC at the request of any school district. Currently there is no University program granting degrees in human development in the state. Professional education must be achieved elsewhere. A degree-granting program at the University of Alaska Fairbanks campus would meet this need. Alaskans could be professionally trained in Alaska using Alaskan situations for learning models.

The state office of Nutrition Services provides resources and minimal on-site in-service community nutrition education. The public health nurses provide health supervision services and nutrition education services to individuals, families and groups throughout the life cycle. The state sponsors well-child clinics in every area of the state, addressing nutrition for infants and children. In addition, WIC provides nutrition education and supplemental foods to pregnant and nursing mothers, infants, and children who are in economic need and are found to be at nutritional risk. The WIC program currently serves about 50 communities in Alaska.

The Alaska Area Native Health Service employs two public health nutritionists, one in Southeast Alaska and one in the Area office plus six dietitians at the IHS hospitals and one in the Area office. The AANHS also provides contract funds for a nutritionist/dietitian in Interior Alaska and a nutritionist in Yukon Kuskokwim Delta Region. Maniilaq Association operates a WIC Program, under the direction of a nutritionist, for villages of Northwest Alaska.

The Alaska State Nutrition Committee (ASNC) developed a Nutrition Plan for Alaska. In 1980 the preliminary phase identified a tactical system to achieve the operating vision of the committee. In January, 1982, ASNC set as its first priority activity the promotion of regional nutrition programs based upon locally identified needs. The goals of the committee for the State of Alaska were restated and affirmed January 31, 1984. These goals of the Alaska State Nutrition Committee follow.

Figure 4-45

GOALS OF The Alaska State Nutrition Committee
January, 1984

- I. Education and information to develop individual nutrition awareness shall be available to all Alaskans.

- Rationale:
1. Many consumers are unable to make appropriate changes in eating habits.
 2. Confusing and conflicting nutrition messages are received by consumers.
 3. Many people have limited experience and skill in making appropriate food selection.

- II. Effective nutrition programs which are culturally and regionally sensitive shall be developed, expanded and/or promoted.

- Rationale:
1. Nutrition services are not available to many Alaskans due to demographic and geographic characteristics.
 2. Existing services lack effective statewide coordination.
 3. Appropriate training for food service workers is not available in many regions.
 4. Availability of nutrition education is limited for health care providers and educators.

- III. Nutrition related research shall be promoted throughout Alaska.

- Rationale:
1. Statewide health data is not being analyzed or distributed.
 2. Minimal human nutrition research is conducted.
 3. Minimal nutrition research on Alaskan grown food is done.

IV. The people of Alaska shall have a safe and adequate food supply.

- Rationale:
1. The quantity, quality and selection of food is not uniform throughout Alaska.
 2. Consumers are unable to obtain foods which are culturally desirable.
 3. High food costs and high transportation costs demand greater food expenditures.
 4. Food safety is not assured in Alaska's food supply.

V. Traditional food gathering and storing shall be encouraged.

- Rationale:
1. Traditional methods of subsistence living are being threatened by acculturation.
 2. Insufficient numbers of people use adequate home preservation and storage techniques.

VI. Innovative food production, delivery, preservation and storage systems shall be examined and developed for use of all Alaskans.

- Rationale:
1. Food production in Alaska lacks diversity.
 2. Present delivery systems are slow, infrequent and costly in some areas of the State.
 3. Storage/preservation techniques using "outside" technology do not always lend themselves to Alaskan applications.

DENTAL HEALTH

Poor dental health and tooth decay were identified as priority health status problems by each of the Alaska Health Systems Agencies. Dental health is a status subject area for which it is important to utilize perceived needs to supplement statistical information.

Dental health in relation to diet is particularly a concern for bush Alaska. It is generally believed that, prior to contact with non-Natives, the Eskimo had the lowest rate of dental caries of any race or population group in the world. Reports by early arctic explorers indicated that the Eskimos' teeth were virtually free from decay.¹⁸ Dietary changes due to a decrease in subsistence economy, food gathering, hunting, and fishing have replaced natural foods with a diet composed of large quantities of refined carbohydrates, such as candy, sugar and soft drinks. The change in diet has resulted in increased dental health problems and an increased need for dental services in bush Alaska.

Nationally, one in four adults has sub-standard levels of oral health. In 1971, 23% of the U.S. adult population 45-64 years of age were completely without teeth and 39% of the population 6-11 years of age had some form of periodontal disease.

Health Systems Responses

HEALTH STATUS	ENVIRONMENTAL, LIFESTYLE AND BIOLOGICAL CAUSAL FACTORS	SUGGESTED HEALTH CARE SYSTEM RESPONSES
POOR DENTAL HEALTH	<p>Diet high in sugar</p> <p>Change from traditional diet in rural Alaska</p> <p>Marketing of high sugar foods</p> <p>Non-fluoridated water</p>	<p>Health education regarding diet and dental health</p> <p>Education regarding proper brushing and flossing</p> <p>Encourage measures to increase use of traditional foods.</p> <p>Measures to increase availability of nutritious foods & decrease availability of foods of little nutritive value</p> <p>Increase numbers of communities with fluoridated water</p> <p>Promotion of fluoride treatments</p> <p>Regular dental care to each community in Alaska</p>

Fluoridated municipal water supplies are available in many of the larger communities in the State; however, many smaller community water systems do not fluoridate and, in addition, much of the population is dependent upon personal water sources. Supplementary oral fluoride rinse programs or topical treatments are not provided by the schools or other health professionals in most communities. Such a program, sponsored by the State, is being implemented in Wrangell schools ("toothkeeper project") and provides fluoride rinses and community education.

Those schools providing health education usually include dental hygiene and nutrition in the curriculum.

Efforts are being made at the national level to restrict the advertising of high-sugar foods, particularly ads directed at children. Efforts are being made within Alaska to limit the access to high-sugar foods.

INFLAMMATORY DISEASES OF THE CENTRAL NERVOUS SYSTEM

Inflammatory diseases of the central nervous system (CNS) include the various types of meningitis and encephalitis; intracranial and intraspinal abscesses; and phlebitis and thrombophlebitis of the intracranial venous sinuses. This category of disease (primarily meningitis) has received increasing attention because of its prevalence among the young. From 1976 through 1979, inflammatory diseases of CNS accounted for 6.5% of the deaths of children ages one through four in the State of Alaska and for 2.4% of the deaths of children under fifteen years of age.

Figure 4-46

Deaths from Inflammatory Diseases of CNS by Age Alaska 1976 - 1979			
Age	Number of Deaths	Age Specific Rate Per 100,000	Deaths from Inflammatory Diseases of CNS as a Per- cent of All Deaths in Group
<1	11	32.6	2.1%
1 - 4	8	7.1	6.5%
5 - 14	5	1.8	3.5%
15 - 24	2	.6	.3%
25 - 34	1	.3	.1%
35 - 44	0	0.0	0 %
45 - 54	1	.8	.1%
55 - 64	1	1.3	.1%
65 +	1	2.4	.1%
Total	30	1.8	.5%

Source: Office of Information Systems, Alaska Department of Health and Social Services, Alaska Vital Statistics, 1976-1979.

Figure 4-47

Reported Incidence of Meningitis
by Public Health District, Alaska and US, 3 yr Avg, 1970-1980
(Rate per 100,000 Population)

AREA	1971		1972		1973		1974		1975		1976		1977		1978		1979		1970-1980	
	#	rate	#	rate																
SOUTHEAST	39	29.8	8	5.9	7	4.9	7	4.8	9	5.9	11	7.1	30	19.0	35	22.1	38	23.9	91	16.8
SOUTHCENTRAL	219	36.6	96	15.4	69	10.7	70	10.1	85	11.3	115	14.3	106	12.9	146	17.8	169	20.9	544	20.6
NORTHERN	69	32.8	32	15.2	10	4.5	9	3.6	14	5.2	31	11.6	27	10.6	50	20.1	47	18.7	150	17.0
ALASKA	327	34.8	136	14.1	86	8.6	86	7.9	108	9.2	157	12.8	163	13.2	231	18.8	254	20.9	785	19.3
U.S.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Note: Year under which rate is shown is central year of 3 year period; # is total cases over the 3 year period.

Source: 1) State of Alaska Section of Communicable Disease Control, Annual Communicable Disease Report, 1971-1980
 2) U.S. DHHS Centers for Disease Control, Morbidity and Mortality Weekly Report, Annual Summary, 1979
 3) State of Alaska Department of Labor, Alaska Population Overview, 1979; Population Release, July 2, 1980 (memorandum); Alaska 1980 Population - A Preliminary Look, 1981

Figure 4-48

Reported Incidence of Encephalitis
by Public Health District, Alaska and U.S. 3 Yr. Avg., 1973-1981
(Rate per 100,000 Population)

AREA	1973		1974		1975		1976		1977		1978		1979		1980		1981		1970-1980	
	#	rate	#	rate																
SOUTHEAST	1	0.7	0	0.0	0	0.0	1	0.7	1	0.6	1	0.6	4	2.5	5	3.1	5	3.0	6	1.1
SOUTHCENTRAL	5	0.8	10	1.5	22	3.0	31	3.9	29	3.6	26	3.2	20	2.5	19	2.4	15	1.8	59	2.3
NORTHERN	1	0.5	1	0.4	2	0.8	3	1.1	6	2.4	7	2.8	7	2.8	4	1.6	7	2.6	11	1.3
ALASKA	7	0.7	11	1.0	24	2.1	35	2.9	36	2.9	34	2.8	31	2.6	28	2.3	27	2.1	76	1.9
U.S.	-	0.1	-	0.1	-	1.1	-	0.3	-	0.2	-	0.1	-	0.2	-	0.1	-	-	-	-

Note: Year under which rate is shown is central year of 3 year period; # is total cases over the 3 year period.

Source: 1) State of Alaska Section of Communicable Disease Control, Annual Communicable Disease Report, 1971-1982.
 2) U.S. DHHS Centers for Disease Control, Morbidity and Mortality Weekly Report, Annual Summary, 1980.
 3) State of Alaska Department of Health and Social Services, Division of Planning, Policy and Program Evaluation, population estimates, 1983.

Meningitis and encephalitis are inflammatory diseases of the spinal cord, meninges and brain due to a viral or bacterial infection, or other foreign protein. Contributing factors can include otitis media, infectious hepatitis, tuberculosis, syphilis, brain tumor, mumps and alcoholism. Another major contributor is Hemophilus influenza type b. H. influenza type b is the leading cause of bacterial meningitis in the U.S.. Unlike other common bacterial causes of serious disease the majority of H. influenza type b disease occurs in children less than six years of age and most in children less than two years of age. A particularly high incidence of H. influenza type b disease has been noted among Alaskan Eskimos and is presently being studied by the Center for Disease Control and the U.S. Public Health Service.

Health Systems Responses

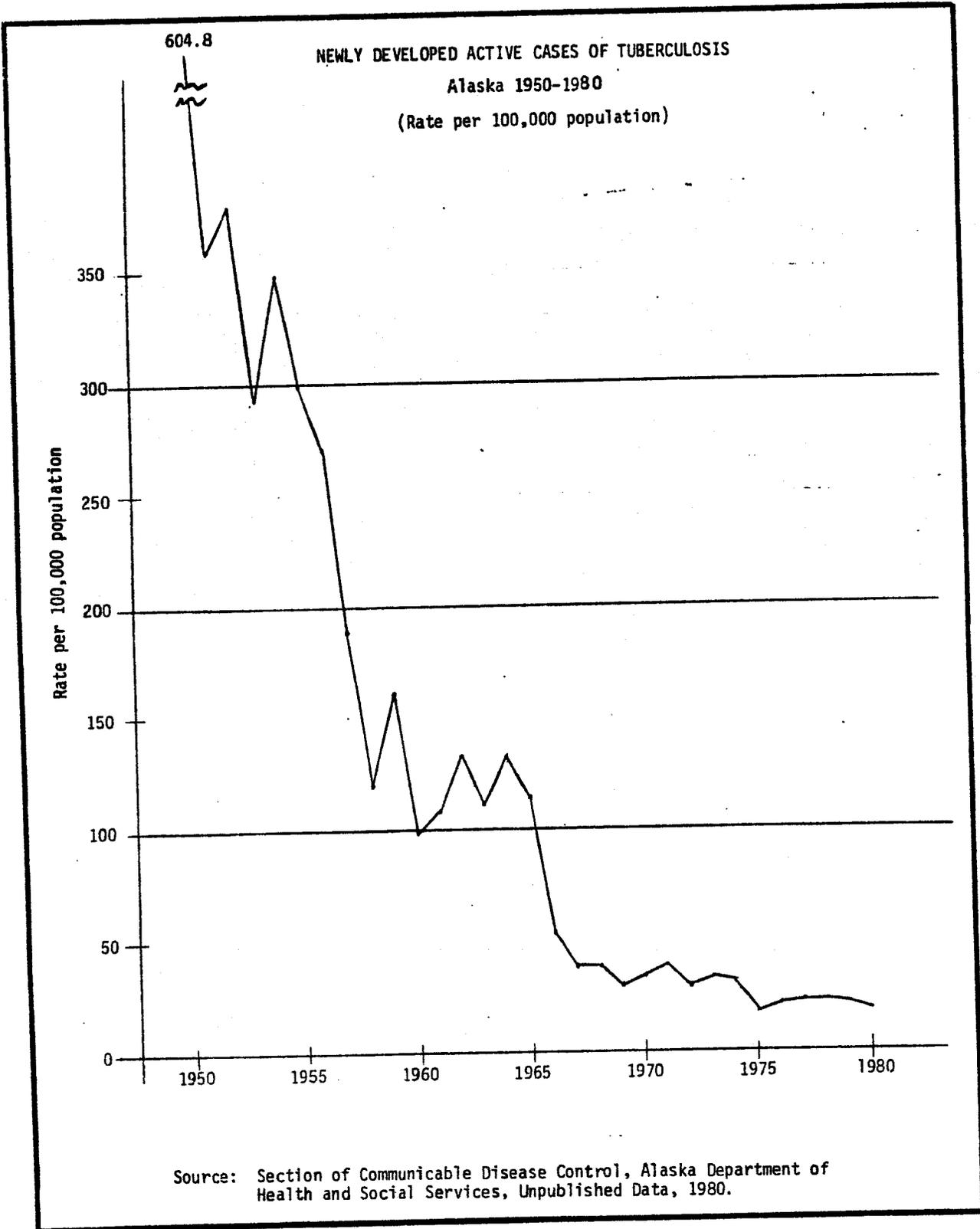
HEALTH STATUS PROBLEM	ENVIRONMENTAL, LIFESTYLE AND BIOLOGICAL CAUSAL FACTORS	SUGGESTED HEALTH CARE SYSTEMS RESPONSE
<p>INFLAMMATORY DISEASE OF CNS</p>	<p>Other infections in the body; otitis media, etc.</p> <p>Brain Tumor or injury</p>	<p>Prompt and appropriate treatment of infectious diseases</p> <p>Early diagnosis & treatment of disease</p>

TUBERCULOSIS

An epidemic of tuberculosis occurred in the Territory of Alaska during the early 1940s. The adult Native population had an approximate 90% infection rate and Native school age children had a 70% infection rate. Programs to combat the disease were initiated and the incidence of tuberculosis was stabilized within a normal range by the 1970s. The reported morbidity for TB dropped from a rate of 32.1 per 100,000 population in 1973 to 19.9 in 1981. This ending year rate was less than the ten year average 1970-1980 of 26.4 (Figure 4-50). The leading cause of mortality in the state as recently as 1951, TB was the cause of only eight deaths in 1980.

The following chart depicts the radical decline in the rate of newly developed active cases of tuberculosis in Alaska from 1950 to 1980. A majority of the newly developed cases of TB occurred among the 25-65 age group. The incidence of TB is substantially higher for the Native population of the state. In 1980, the rate per 100,000 was 76.5 for Natives and only 3.56 for whites.

Figure 4-49



Tuberculosis is an airborne disease. Individuals become infected by breathing the germs that come from a tuberculous infectious individual. Tuberculosis organisms are extremely slow-growing and difficult to destroy. Tuberculosis can be detected in the body while the disease is still minimal and thus non-infectious. Detection and treatment of primary tuberculosis during the earliest stages of the disease are therefore the most important system responses.

Tuberculosis treatment, unlike that for some other infectious diseases, requires treatment for an extended period of time, including 18-24 months of chemotherapy. Tubercule bacilli can remain dormant in the body for 40 years or more before they multiply rapidly enough to cause disease; however, if primary tuberculosis is treated, the patient usually recovers without difficulty. Untreated cases may progress to more severe pulmonary or extrapulmonary tuberculosis. Even after a patient has recovered from primary TB, he will generally remain tuberculin positive for the rest of his or her life, with a small risk of developing active tuberculosis.¹⁹ National studies indicate that persons requiring treatment for tuberculosis are at high risk for breast cancer during later years. Some elderly Alaska Natives who have had surgery for tuberculosis as young people suffer from pulmonary insufficiency.

Figure 4-50

Reported Incidence of Tuberculosis by Public Health District, Alaska and U.S. 3 Yr. Avg., 1973-1981																					
(Rate per 100,000 Population)																					
AREA	1973		1974		1975		1976		1977		1978		1979		1980		1981		1970-1981		
	#	rate	#	rate																	
SOUTHEAST	47	32.7	44	29.9	30	20.3	30	19.7	34	21.7	36	23.0	33	21.0	27	16.8	25	14.8	137	25.4	
SOUTHCENTRAL	170	26.7	155	23.0	161	22.1	147	18.6	156	19.1	156	19.2	155	19.4	156	19.3	163	19.2	617	23.1	
NORTHERN	102	46.8	97	40.4	81	31.1	77	29.3	84	33.2	84	34.2	72	28.9	66	25.7	68	25.7	308	35.4	
ALASKA	319	32.1	296	28.0	272	23.9	254	21.0	274	22.3	276	22.7	260	21.6	249	20.3	256	19.9	1062	26.4	
U.S.	-	14.8	-	14.2	-	16.0	-	15.0	-	13.9	-	13.1	-	12.6	-	12.3	-	-	-	-	-

Note: Year under which rate is shown is central year of 3 year period; # is total cases over the 3 year period.

Source: 1) State of Alaska Section of Communicable Disease Control, Annual Communicable Disease Report, 1971-1982.
 2) U.S. DHHS Center for Disease Control, Morbidity and Mortality Weekly Report, Annual Summary, 1980.
 3) State of Alaska Department of Health and Social Services, Division of Planning, Policy and Program Evaluation, population estimates, 1983.

Health Systems Responses

HEALTH STATUS PROBLEM	ENVIRONMENTAL, LIFESTYLE AND BIOLOGICAL CAUSAL FACTORS	SUGGESTED HEALTH CARE SYSTEM RESPONSES
TUBERCULOSIS	Air borne infection Neglect in getting TB tests	Promotion of TB screening and testing Treatment of TB positive persons prior to the infectious stage of the disease

The Section of Communicable Disease, Unit of Tuberculosis Control and Chest Disease, Division of Public Health, provides training, treatment coordination, and reporting for tuberculosis cases. Direct services are provided by public health nurses who are responsible for following each TB case in his or her area. Tuberculosis services include TB testing, health education, chest clinics and x-rays, drug therapy, case and contact follow-up, and hospitalization.

DEVELOPMENTAL DISABILITIES

Developmental disabilities include congenital anomalies of the central nervous system such as spina bifida; congenital anomalies affecting multiple systems and multiple congenital anomalies; developmental diseases of the central nervous system such as cerebral palsy and diseases of the spinal cord; and mental retardation (often the result of the above conditions). The definition of developmental disability currently being applied by the Division of Mental Health and Developmental Disabilities is a disability which

- (A) is attributable to:
 - (i) mental retardation, cerebral palsy, epilepsy or autism;
 - (ii) any other condition found to be closely related to mental retardation because the condition results in impairment of general intellectual functioning or adaptive behavior similar to impairment resulting from mental retardation; or
 - (iii) dyslexia resulting from a disability described in (i) or (ii) of this subparagraph; and
- (B) constitutes a substantial handicap to the person's ability to function normally in society.

In contrast, Public Law 95-602 recently amended the Federal definition of developmental disability. This definition has been adopted by the Governor's Council for the Handicapped and Gifted. Under the P.L. 95-602, the term "developmental disability" means severe, chronic disability of a person which

- (A) is attributable to a mental or physical impairment or combination of mental and physical impairments;
- (B) is manifested before the person attains age twenty-two (22);
- (C) is likely to continue indefinitely;
- (D) results in substantial functional limitations in three or more of the following areas of major life activity; (i) self-care, (ii) receptive and expressive language, (iii) learning, (iv) mobility, (v) self-sufficiency; and

- (E) reflects the person's need for a combination and sequence of special, interdisciplinary, or generic care, treatment, or other services which are of lifelong or extended duration and are individually planned and coordinated.

This category is particularly important to address in a perceived framework, as analytical information regarding the problem is less available than for most conditions.

The Division of Mental Health and Developmental Disabilities has estimated the number of developmentally disabled in Alaska based upon a national formula of expected developmentally disabled in each age group. It is estimated that 3.2% of the Alaska 1980 population, 12,878 individuals, suffer from some form of developmental disability. Of this number, 62.7% are thought to have some degree of mental retardation; 31.6% would have epilepsy; 4.3% cerebral palsy; and 1.4% autism (Figure 4-51).

Figure 4-51

Disability	Age				Total
	0-2	3-5	6-20	21+	
Mental Retardation	209	583	2,896	4,381	8,069
Mildly Retarded	184	513	2,548	3,855	7,010
Moderately Retarded	13	35	174	263	485
Severely Retarded	8	23	116	175	322
Profoundly Retarded	4	12	58	88	162
Epilepsy	40	76	791	3164	4,071
Cerebral Palsy	47	45	223	243	558
Autism	10	10	50	110	180

Methodology: Estimated prevalence rates applied directly to statewide age distribution from 1980 Census data

Source: U.S. Dept. of Commerce, Bureau of the Census, Supplementary Report, 1980 Census of the Population, PC80-51-1

Div. of MH.&DD, DHSS, Alaska FY 81-83 Developmental Disabilities State Plan, 1978

Congenital anomalies are a major cause of developmental disabilities.

Alaska hospitals reported 370 patients' discharges for congenital abnormalities during CY 1980. This total represented less than 1% of all patients admitted, or 12.49 per 10,000 compared to a national rate of 15.75 admissions for congenital anomalies per 10,000 population.

There are a large number of causal factors for developmental disabilities. Communicable diseases, such as bacterial meningitis and German measles contracted by the mother during the first twelve weeks of pregnancy, can result in mental retardation. Metabolic disorders may also result in developmental disabilities. Cretinism, for example, is caused by insufficient secretion of the thyroid gland. Congenital anomalies caused by chromosomal disorders are a major cause of developmental disabilities. Down's syndrome occurs in 1 in 600 live births and its incidence is strongly correlated to the age of the mother. The risk of Down's syndrome in offspring of women over 45 rises to 1 in 50.

There is a correlation between nutrition and mental retardation, particularly during 50 days prenatal and 45 days postnatal. High rates of alcohol consumption by pregnant women have been shown to result in birth defects including fetal alcohol syndrome. According to the National Institute on Alcohol Abuse and Alcoholism, there appears to be a direct correlation between consumption rates and degree of fetal abnormality. Studies conducted in the Seattle, Washington area have estimated the incidence of fetal alcohol syndrome (FAS) at 1.33/1000 live births. Given this incidence, the prevalence of FAS affected individuals in the State is estimated to be 533 persons (Figure 4-39); however, since consumption figures, mortality, and other indirect alcohol related indicators suggest that alcohol abuse is a more significant problem in Alaska than it is stateside, it is likely that this estimate is overly conservative.

Physical injuries, especially head injuries, can cause mental retardation. Child abuse is of particular concern here. A 1974 national study of 90 children found that the proportion of children with IQs below 70 was almost ten times higher among the abused and neglected children.

Health Systems Responses

HEALTH STATUS PROBLEM	ENVIRONMENTAL, LIFESTYLE AND BIOLOGICAL CAUSAL FACTORS	SUGGESTED HEALTH CARE SYSTEM RESPONSES
DEVELOPMENTAL DISABILITIES		
Congenital anomalies	Heredity	
Metabolic disorders	Complex internal systems	Nutritional counselling
Communicable diseases	Immunization	Public education
Nutrition (maternal & infant)	Poor consumption and health habits	Measures to increase Nutritional awareness
Alcoholism (maternal)	Consumption of alcohol and smoking (maternal)	Measures to reduce alcohol consumption and smoking
Physical injuries (particularly head injuries)	Accidents, child abuse	Measures to reduce childhood accidents and child abuse
		Special education and vocational habilitation
		Maintenance services when necessary

The National Foundation-March of Dimes, in conjunction with the WAMI Medical Program, sponsors genetic counseling and birth defect clinics in seven Alaska communities, including seventy specialist days of service. Measures to improve nutrition, and to reduce child abuse, child neglect, and alcoholism, are discussed in the respective categorical sections of this chapter.

The schools in Alaska identify handicapped and gifted children and provide special education classes. In the fall of 1981, 11,147 children were enrolled in special education programs in Alaska. This constitutes 12.99% of the total school enrollment.

The Division of Vocational Rehabilitation provides program services to individuals with a physical or mental disability which creates a substantial handicap to employment. Vocational training is designed to assist the individual in developing and maintaining a gainful occupation.

The Easter Seal Society, the Alaska Crippled Children's Program, the National Multiple Sclerosis Society, and other organizations provide educational materials, information and referral, and other specialized services.

Pregnant mothers at special risk of bearing handicapped children include women under 16, those in the older child-bearing years, and those with socio-economic restrictions. In response to special risk mothers and infants, the improved Pregnancy Outcome Program has been operational since 1980.

The major emphasis of Developmental Disabilities (DHSS) policies in the past year has been deinstitutionalization. New programs such as group homes, vocational training programs, family respite care and habilitation services have been created across the State to allow developmentally disabled persons to remain close to their families or live in community settings. The ninety-six bed state operated institution in Valdez operates as a back-up to the development of community services.

A system of advocacy for developmentally disabled persons is conducted through the Governor's Council for the Handicapped and Gifted and Protection of Advocacy for the Developmentally Disabled, Inc.

END STAGE RENAL DISEASE

Definition: End Stage Renal Disease (ESRD) is the stage of renal impairment which is virtually irreversible and permanent. Kidney functioning can be impaired through accidents, through such diseases as glomerulonephritis and pyelonephritis, through complications of diabetes mellitus and hypertension, or as a result of congenital or genetic disorders. The major function of the kidney is to filter waste products from the blood, and partial or complete kidney failure leads to an accumulation of these toxic products in the body (a condition known as uremia). Most episodes of kidney or renal failure are mild and temporary and do not lead to permanent damage. The more serious cases, however, result in the permanent, irreversible condition ESRD. Symptoms of ESRD include headaches, vomiting, convulsions, and if the disease is untreated, death. ESRD is defined as the stage of kidney impairment which cannot be favorably influenced by conservative management alone (for example, by diet or medication).

Treatment: The two major methods of treatment for ESRD are dialysis and transplantation. There are two types of dialysis: hemodialysis and peritoneal dialysis. In the more common procedure, hemodialysis, a machine which is hooked into the patient's circulatory system, cleanses impurities from the blood by passing the impurities across a semipermeable membrane. Skilled nutritional counseling is an important element of the management of ESRD.

The procedure takes four to six hours and must be done two to three times a week throughout a patient's life. Hemodialysis can be performed in a hospital, at a free standing facility, or at home. In self-dialysis, patients are trained to perform dialysis themselves with limited assistance. Self-dialysis may be used in the patient's home or in an outpatient facility.

Peritoneal dialysis is used primarily for patients with circulatory problems and is also beneficial for elderly patients and patients with cardiac problems. In this form of dialysis, a dialyzing solution is introduced into the peritoneal (abdominal) cavity. Uremic toxins in the blood diffuse through the peritoneal membrane into the dialyzing solution, which is then drained. This procedure requires twelve to thirty-six hours, one to three times a week.

Kidney transplantation is a process by which a kidney is excised from a live or cadaveric donor and surgically implanted in an ESRD victim. Kidney transplant offers the ESRD patient on dialysis an opportunity for a more normal life. Transplants from a living related donor have a higher success rate than transplants from a cadaveric donor. Transplants have become more successful with the development of immunosuppressive treatment and organ-matching (histo-compatibility) techniques.

Health Systems Responses

Health Status Problem	Environmental Lifestyle and Biological Causal Factors	Suggested Health Care System Responses
End Stage Renal Disease ↑ Kidney Failure	accidents-----	(see accidents matrix, p 4-13)
	glomerulonephritis-----	early diagnosis and treatment
	pylonephritis-----	
	diabetes mellitus-----	
	hypertension-----	(see heart disease and hypertension matrix, p 4-61)
	congenital disorder-----	genetic counseling

P.L. 92-603, the Social Security Act, was amended in 1972 to make available to a larger part of the population (90-95%) the services necessary for the successful treatment of ESRD. The Secretary of DHEW (DHHS) was required to designate a number of network areas, each serving a minimum of 3.5 million population base and each including at least two renal transplant centers. Alaska is part of the Network #2, along with Idaho, Washington, Oregon, and Montana. A Network Coordinating Council (NCC) was established for each network to coordinate ESRD services nationally, Seattle, with three transplant facilities, functions as the network center for Alaska, as there is no renal transplant facility in Alaska.

ESRD is a medical service for which national guidelines have been established by legislative mandate. The details of National Guideline standards and procedures for ESRD may be found in 20 CFR, Part 405, Subpart U. A plan for ESRD services which more specifically addresses the needs of Alaska may be found in Volume II. This ESRD services plan is the result of a concerted effort on the part of planners and providers of ESRD services for Alaska and was coordinated by Network Coordinating Council #2. NCC#2's Network Data System now has a reliable census of dialysis patients in the Network. As of December 31, 1983, the following number of patients had zip codes of residence in Alaska; 37 in-center hemodialysis patients, 1 in-center peritoneal dialysis patient, 6 home hemodialysis patients, 2 patients undergoing home hemodialysis training, and 2 Continuous Ambulatory Peritoneal Dialysis patients.

As of July, 1980, there were thirty-five functioning transplant patients residing in Alaska. These patients were under the primary care of their Alaskan physicians with only rare need to return to their transplant center for complication of their renal transplant.

Since the late summer of 1983, the Alaska Kidney Center (AKC) has been operating nine outpatient dialysis stations, two shifts daily, six days a week. A tenth dialysis station is used strictly for the isolation of Hepatitis B surface antigen positive patients. The current utilization of the nine stations in operation during the last quarter of 1983 was 80%. This facility is presently satisfying the National Guideline requirement that a dialysis facility serving a community of less than 500,000 and performing more than 20% of its dialysis on outpatients, should have three or more dialysis stations and perform an average of 4.0 or more dialyses per station per week.

ESRD patient characteristics for Alaska are based upon the Federal Medical Information System. This information is provided by the Network Coordinating Council #2:

ESRD PATIENT CHARACTERISTICS - ALASKA				
(Based upon NCC#2 Census, December 31, 1983)				
AGE	%	#	SEX	
0-5	0%	0	Male	50%
6-18	2%	1	Female	50%
19-24	6%	3	RACE	
25-44	40%	19	White	57%
45-64	35%	17	Native	28%
65+	17%	8	Other	15%
TOTAL	100%	48		

Home dialysis is frequently a less costly mode of treatment and, as such, is to be promoted and the preferred mode of treatment whenever feasible. Home dialysis patients have been located throughout the state, including Nome, Fairbanks, Tok, Juneau, Kodiak, Wasilla, Kenai/Soldotna, and Homer. Many of these patients received training in home dialysis at the Northwest Kidney Center in Seattle. The Alaska Kidney Center has taken over this function since approval as a home dialysis center in 1982. Patients choosing peritoneal dialysis must still be trained in a unit outside the State of Alaska.

Services for ESRD for the Native population are not budgeted for within the Indian Health Service and IHS has declined to provide them within the IHS system. Statistics regarding the extent of the problem for bush residents are currently unavailable; however, there may be a need to locate a dialysis unit in a bush setting for social and cultural reasons for the afflicted population.

Services for ESRD are reimbursable under the Medicare program. Under the Medicare reimbursement program, separate categories are established for payment for dialysis units for ESRD patients as well as acute kidney failure patients. Under the new reimbursement rules (Medicare billing instructions), the Northwest Kidney Center could lose money by treating Alaska patients and may have to discontinue this service to the Alaska population; however, the final decision has not yet been made.

In determining the need for dialysis and transplant services, the importance of a comprehensive system of renal disease services, including components other than end-stage care, must be noted. It is important to be aware of the direct impact other aspects have on the size of the patient population entering renal failure and requiring transplantation or dialysis therapy. The frequency of operations required to maintain physical and other health manpower personnel proficiency, as well as the back-up services required to minimize patient deterioration, are significant variables to be considered. An ideal comprehensive approach includes efforts to decrease the number of individuals entering irreversible renal failure, and utilization of advances in the development of techniques for prevention or treatment of primary disease and effective intervention in the progression of latter stages of the disease.

By legislative mandate, ESRD is a medical service subject to National Guideline standards and criteria. Because of this requirement, ESRD must be fully addressed in this State Health Plan. ESRD, however, affects very few people in Alaska compared to other health problems. This requirement serves to dilute the limited health planning resources in the State by demanding time for full discussion of an issue which is not of major importance to the Alaskan health care system. For this reason, the Statewide Health Coordinating Council objects to the requirement that this service be included in the Plan as a major and significant health issue for the State.

SUMMARY

To summarize the information found in Chapters 3 and 4, the chart on the next three pages illustrates the status problems, the target groups, and the trends. Chapter 4 also identifies health services provided in the State as they relate to causal factors and suggested health systems responses. The health systems inventory and analysis in Chapter 5 provides additional information regarding current resources addressing health status problems. This edition of the SHP closes with an identification of statewide health status problems.

SUMMARY OF CATEGORICAL HEALTH STATUS PROBLEMS

HEALTH STATUS PROBLEM	GENERAL COMMENTS	AGE-SPECIFIC	RACE-SPECIFIC	SEX-SPECIFIC	GEOGRAPHIC-SPECIFIC	TREND
Accidents	Accidents are the leading cause of mortality in Alaska. The age adjusted rate is 2.2 times the U.S. rate.	Accidents are the leading cause of death for the ages 1-44.	The accidental death rate for Natives is more than 2 times the rate for non-Natives.	The accidental death rate for males is over 3 times the rate for females.	The northern HSA has the highest rate of accidental death.	Accidental death rates in 1980 were less than 1970 and the 11 year rate.
Alcohol Abuse	Alcohol abuse directly affects the incidence of cirrhosis of the liver, accidents, violent crimes and suicide. Alaska alcohol consumption rate far exceeds the U.S. overall. In 1979 Alaska's consumption rate was 23.1% greater than U.S.	According to the target group estimates, the population 20-29 comprises the largest group of problem drinkers.	The Native mortality rate from alcohol and cirrhosis of the liver is almost 4 times the non-Native rate and almost 3 times the U.S. rate.	According to the highest group estimates, drinkers in Alaska are primarily males. This corresponds with data which shows that the mortality due to alcoholism and cirrhosis of the liver for males is 1.4 times the female rate. The male mortality rate from accidents and suicide are over 2 times the female rates.	Southeast Alaska has the highest cirrhosis mortality rate, 1.5 times Southcentral and 2 times Northern.	Combined mortality due to alcoholism and cirrhosis in 1979 was down 38.9% from 1970 and was 29.7% less than the 10 year average.
Mental Illness and Emotional Disorders	Mental illness is generally evaluated in terms of measurable indicators such as suicide; this indicator reflects a high rate in Alaska.	The majority of suicides occur in the age groups 15-34.	The Native rate of suicide is almost twice the non-Native rate.	Alaskan males commit suicide at a rate almost 4 times the female rate.	The NANA, Bering Straits and Wrangel-Petersburg regions have the highest suicide rates (1974-1979).	There has been a general upward trend since a low point in 1969 (rate of 10.1). The suicide rate in 1980 was 18.0
Violent Crimes	Violent acts including child abuse, wife beating, aggravated assault, forcible rape and other acts of violence affect a significant portion of Alaska's population. The incidence of these violent acts is presumed to be quite high in Alaska compared to the national norm.	Non-family criminal violence such as homicide, assault and rape most often affect the 15-34 population. Child abuse is recognized as a serious problem in Alaska.		There is an increased concern regarding the incidence of assaults against women. Programs specific to this problem are available.	The highest rate of aggravated assault is in the Southeast HSA; the highest rate of reported rapes is in Southcentral HSA; the highest rate for homicide is the Northern HSA.	Assault and forcible rape reflect an increasing trend in Alaska. The homicide rate in 1980 was less than the rate in 1970 and the eleven year average.
Venereal Disease	Over 12,000 cases of gonorrhea and 163 cases of syphilis were reported in Alaska during 1981. The Alaska rate of reported gonorrhea is more than twice the national rate.	Highest age-specific rates are for the 15-24 year olds followed by the 25-34 year olds.	Native incidence rate for gonorrhea is almost 5 times the non-Native rate.	Apparent greater incidence of gonorrhea among males than females.	The rate of reported gonorrhea is highest in Northern HSA followed by Southcentral. The rate for Southeast is considerably lower.	From 1973 to 1981 the 3 year average rate increased 10.6%. The 1981 rate was less than the 10 year average rate 1970-1980.

*Rates per 100,000 population and are for 1979 unless stated otherwise

SUMMARY OF CATEGORICAL HEALTH STATUS PROBLEMS

HEALTH STATUS PROBLEM	GENERAL COMMENTS	AGE-SPECIFIC	RACE-SPECIFIC	SEX-SPECIFIC	GEOGRAPHIC-SPECIFIC	TREND
Food and Water Borne Diseases	Food and water borne diseases are a problem in Alaska because of the poor quality of housing and sanitary facilities in many Alaskan communities. The Alaska rates of infection have generally been higher than the national rates (especially for hepatitis A and Botulism) since 1970.				Food and water borne diseases are of particular concern in rural areas due to environmental conditions.	The combined reported incidence of botulism, salmonella, shigella, and hepatitis A have declined over 50% in the last 10 years.
Heart Disease	Heart disease is a leading cause of Alaska hospital admissions (6% of the discharges). The crude rate, however, is less than one third the national rate. Heart disease is the second leading cause of death in Alaska but the age adjusted mortality rate is substantially less than the comparable national rate.	It is the leading cause of death for those over 45. The Alaska age-specific rates for 45-64 are lower than the national rates.	The Native death rate is higher than the non-Native rate, but still much less than the U.S. rate.	The rate of death for males is more than twice as great as the female rate.	Southeastern Alaska has the highest rates for morbidity (as measured by hospital discharges) and mortality. The age adjusted death rate in Southeast is greater than the other HSA's and statewide.	Mortality due to heart disease and hypertension is slightly increased over the rate in 1970 and the average rate over the period 1970-1980.
Cancer	Malignant neoplasms account for 3.4% of the Alaskan hospital discharges. Malignant neoplasms are the third leading cause of death in Alaska. As with heart disease, the Alaska mortality rate for cancer is lower than the national rate. Cancer of the respiratory/intrathoracic organs is the leading source of cancer mortality.	Cancer is the leading cause of death for persons 45-64. The mortality rate for this age group is 14.8% less than the mortality rate for the U.S. 45-54 age cohort.	The Native mortality rate is 43.8% higher than the non-Native rate.	Male mortality due to cancer is 41.5% greater than the female mortality rate.	The rates of hospital discharges for malignant neoplasms are similar in Southcentral and Northern but less in Southeast (perhaps attributable to going out of state for treatment).	The Alaska mortality rate (and the U.S. rate) has been increasing since 1970.
Immunizable Diseases	Alaska morbidity rates for most of the immunizable diseases are low.	Young age groups are the primary target population for immunizable diseases.				The trend has been toward decreasing incidence of immunizable diseases in Alaska.
Otitis Media	Upper respiratory conditions, followed by otitis media were the second and third leading causes of ambulatory care in AARHS facilities representing 6.8% and 4.8% of all outpatient visits respectively. Diseases of the respiratory system were the 3rd leading cause of discharges in the 1981 Acute Care Hospital Survey.	Infants and children are most at risk for otitis media.	Otitis media appears to be more prevalent in Natives as reflected in AARHS hospital data.		Incidence is presumed to be highest in bush areas.	Otitis media and respiratory conditions continue to rank as one of the leading causes for ambulatory and acute care.

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18. Richard E. Zitzoe, M.P.H., "The Relationship of Diet and Dental Caries in the Alaska Eskimo Population," Alaska Medicine, Vol. 21, No. 2, March, 1979.
19. Section of Communicable Disease Control, Alaska Department of Health and Social Services, Tuberculosis Control Manual, 1976.

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SUMMARY OF CATEGORICAL HEALTH STATUS PROBLEMS

HEALTH STATUS PROBLEM	GENERAL COMMENTS	AGE-SPECIFIC	RACE-SPECIFIC	SEX-SPECIFIC	GEOGRAPHIC-SPECIFIC	TREND
Diseases of Early Infancy	Diseases of early infancy were the leading cause of death in Alaska in 1980, and contributed 48% of deaths for population under one year of age.	By definition, this only affects the the population under age 1.	Both white and Native mortality between 0 and 1 has declined substantially since 1970; however, Native mortality was still much greater than white in 1979.	The male mortality rate is almost twice the female mortality rate (1977-1979)	The crude mortality rate was lowest for Northern HSA and highest for Southeast HSA in 1980.	The Alaska and U.S. mortality rates have decreased tremendously since 1980.
Poor Nutrition and Dental Health	The Alaska HSAs have identified poor nutrition and dental health as priority health status problems. The switch in diet from subsistence foods low in simple carbohydrates to commercially available foods high in sugar has resulted in a drastic change in personal nutrition and a marked increase in tooth decay in bush areas.				The change from subsistence to commercial foods in rural areas warrants concern regarding nutrition and dental health.	
Inflammatory Diseases of the CNS	This category of disease (primarily meningitis) has received increasing attention because of its prevalence among the young.	Age-specific mortality rates are highest for the Alaska population under 1 year old. Inflammatory diseases of CNS contributed 6.5% of the deaths for the 1-4 age group.	Hemophilus influenza is the leading cause of bacterial meningitis and has a high incidence among Alaskan Eskimos, occurring most often in children less than two years of age.			
Tuberculosis	Alaska sustained a tuberculosis epidemic in the early 1950's. Morbidity and mortality have since decreased radically. In 1980 TB was the cause of only 8 deaths.	Most of the newly developed active cases affect the over 25 population.	In 1980 the morbidity rate among Natives was over 21 times the rate among whites. However, the incidence rate among Asians is highest of all races.	In 1980 there were 50% more cases among males than females.	The Northern area had the highest incidence rate among the three HSAs in 1978-1980, and over the period 1970-1980.	Morbidity and mortality have decreased radically since 1950.
Developmental Disabilities	The Alaska Division of Mental Health and Developmental Disabilities has estimated the number of developmentally disabled in Alaska to be 12,878 or 3.2% of the state population. The Alaska mortality rate from congenital anomalies, a major cause of developmental disabilities was 21% higher than the national rate in 1979.	Genetic counseling and prenatal care for potential/expectant mothers is important.				

*Rates per 100,000 population and are for 1979 unless stated otherwise

FOOTNOTES

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3. Robert Kraus, Patterns of Mental Illness, Alcohol Abuse and Drug Abuse Among Alaska Natives, 1977.
4. Kelso, op. cit.
5. State Office of Alcoholism and Drug Abuse, 1982 Report to the Legislature, pp. 2,3.
6. Part of the following information is contained in the 1982 Annual Report to the Legislature, State Office of Alcoholism and Drug Abuse; the remainder is unpublished data from SOADA.
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12. Division of Health Science, Kuskokwim Community College, Comparison of Health Education Approaches to the Reduction of Complications of Otitis Media in Rural Alaska.
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