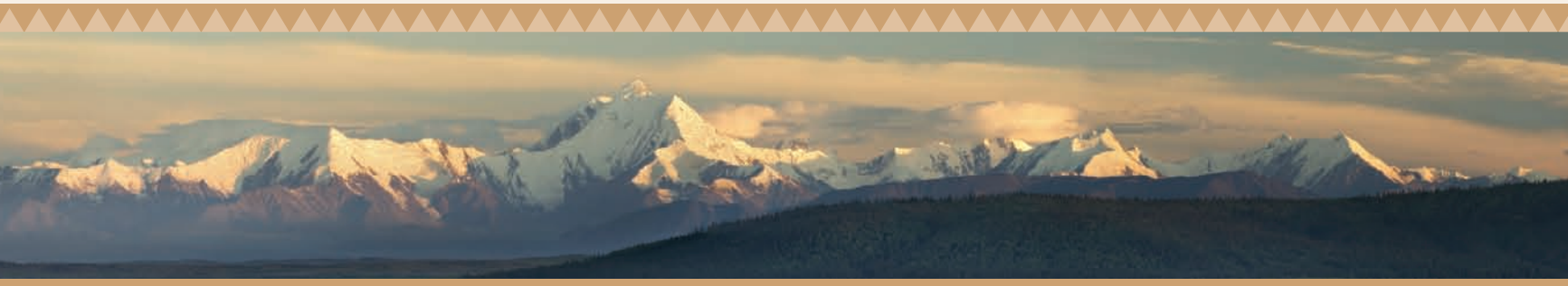

Alaska Native Injury Atlas of Mortality and Morbidity

Prepared by:
The Injury Prevention Program and the Alaska Native Epidemiology Center

Alaska Native Tribal Health Consortium
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Alaska Native Epidemiology Center

Acknowledgements

The Atlas of Alaska Native Injury Morbidity and Mortality was prepared by the Alaska Native Tribal Health Consortium (ANTHC) Injury Prevention Program and the Alaska Native Epidemiology Center. We would like to thank the Alaska Bureau of Vital Statistics for providing injury mortality data and the State of Alaska Injury Prevention and EMS (IPEMS program) for providing injury hospitalization data for this report. Finally, we would like to thank Kerry Wilson, Division of Environmental Health and Engineering, ANTHC, for creating the maps, and Ryan Hill, CDC, National Institute for Occupational Safety and Health, Alaska Field Station, for his contribution to this report.

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Executive Summary

Executive Summary

Injuries (unintentional and intentional combined) are the leading cause of death among Alaska Natives. Unintentional injuries alone are the third leading cause of death, preceded only by cancer and heart disease. The unintentional injury death rate for Alaska Natives is twice that of all Alaskans and three times greater than the rate among the U.S., all races, population. Intentional injuries include homicide and suicide. Suicide is the fourth leading cause of death for Alaska Natives. The suicide rate among Alaska Natives is twice that of all Alaskans and more than three times greater than the rate among the U.S., all races, population. Homicide is the seventh leading cause of death for Alaska Natives. The homicide rate among Alaska Natives is twice that of all Alaskans as well as twice that of the U.S., all races, population.

The Atlas of Alaska Native Injury, Mortality, and Morbidity presents injury mortality (death) and injury morbidity (hospitalization) data for Alaska Natives. The death data comes from the Alaska Bureau of Vital Statistics and includes the years 1999 through 2005. The hospitalization data comes from the Alaska Trauma Registry and includes the years 1991 through 2003. This analysis presents the leading causes of injury death and injury-related hospitalization by gender, by age group, and by region for Alaska Native people. Injury rates are calculated to allow for comparison and to show trends over time. Some of the key findings of this analysis are described below.

Injury Deaths 1999-2005

- 1,137 Alaska Natives died from injury between the years 1999 and 2005. 682 deaths were due to unintentional injuries, 409 were due to intentional injuries, and 46 were of undetermined intent.

- Overall, Alaska Native males were 2.6 times more likely to die from an injury as Alaska Native females.

- More than half (65%) of all injury deaths occurred to Alaska Natives between the ages of 0 and 39.

- Suicide was the single leading cause of injury death among Alaska Natives. An average of 43 Alaska Natives died from suicide each year - about one suicide every 8 days. Males were 3.5 times more likely to die from suicide than females.

- Drowning was the second leading cause of injury death among Alaska Natives, resulting in 140 deaths. Males were six times as likely to die from drowning as were females.

- The greatest injury disparity between Alaska Native people and all Alaskans was found for drowning.

- Alaska Native people were 3.3 times more likely to die of drowning as compared to Alaskans of all races. They were 9.2 times more likely to die of drowning as compared to U.S., all races.

- Between 1999 and 2005, the injury mortality rate declined by 19 percent, most of which was attributable to the decline in unintentional injury deaths (17%).

Non-Fatal Injury Hospitalizations 1991-2003

- Between the years 1991 and 2003 there were 18,768 injury hospitalizations among Alaska Native people.

- Two-thirds of all injury hospitalizations were caused by the four leading causes of injury hospitalization - falls (5,185), suicide attempts (2,729), assault (2,474), and motor vehicles (1,839).

- Overall, Alaska Native males were 1.5 times more likely to be hospitalized for an injury than were Alaska Native females. Female injury hospitalization rates were higher only for suicide attempts and falls.

- The number of injuries is greatest among young Alaska Native persons. There were 13,110 injury hospitalizations among those aged 0-39 (70% of all injury hospitalizations).

- Falls were the leading cause of injury hospitalization for Alaska Native people statewide as well as for all of Alaska's regions.

- Between 1999-2003, falls resulted in 5,185 hospitalizations. The hospitalization rate for falls was highest among those 70 years of age or older; the rate for this age group was 5.4 times greater than the rate for all ages.

- 80 percent of all injury hospitalizations for persons 70 years of age or older were caused by falls.

- Suicide attempts were the second leading cause of injury hospitalization among Alaska Natives. The injury hospitalization rate for suicide attempts was highest among Alaska Native females aged 20-29 (51.4 per 10,000 population). That is 2.5 times the rate for all Alaska Natives.

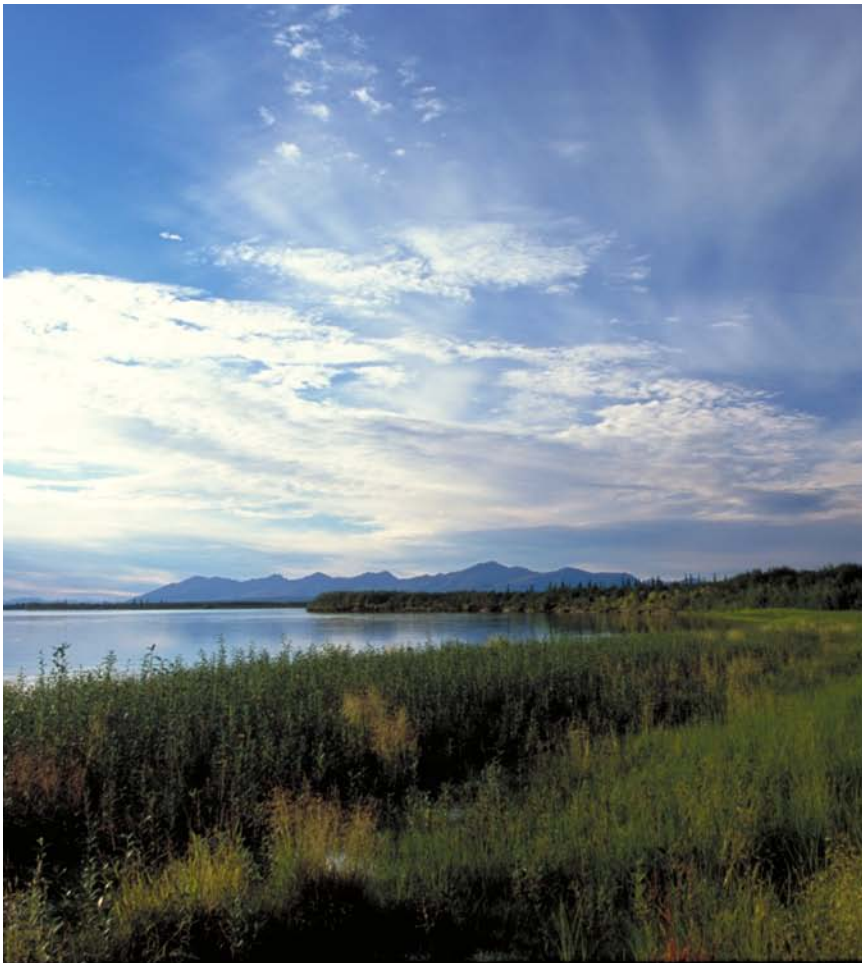
- A total of 2,536 injury hospitalizations were for traumatic brain injury (TBI). The most common causes of TBI were falls, motor vehicles, assault, ATVs, and snow-machines.

- The greatest disparity between genders was found with unintentional firearm injuries. Alaska Native males were 6.0 times more likely to be hospitalized for an unintentional firearm injury than were Alaska Native females.

- According to the Alaska Trauma Registry, 38 percent of all injury hospitalizations among Alaska Native people are alcohol-related. Alcohol was a factor in 69 percent of assault injury hospitalizations. Documented alcohol involvement was highest for assault injuries as compared to any other type of injury.

- Based on injury hospitalizations for which cost data are documented (37% of hospitalizations), the direct medical charges for all injury hospitalizations are estimated at $155 million over the entire time period, or $12 million per year. The average cost per hospitalization was $8,279. The average cost per inpatient day was $1,691. The most expensive case was $720,542 for a motor vehicle-related injury. (Note: Costs do not include pre-hospital care or transports between facilities.)

- 18,768 injury hospitalizations resulted in 102,376 inpatient days, or an average of 5.5 days per injury. Falls caused the greatest number of inpatient days (30,586 days), while cold injuries (hypothermia and frostbite) had the highest average length of stay at 11.0 days.



CHRIS AREND

Methods

CAUSE OF INJURIES

Mortality (Death) Data

The ICD-10 External Cause of Injury Mortality Matrix was used to categorize injury deaths by cause (Appendix A). Due to the unique modes of travel in the often harsh environmental conditions in Alaska, modifications were made to better categorize Alaskan injury deaths. These three modifications are listed below.

- "Excessive natural cold" (X30-X31) was separated into its own cause of death category from "Natural/Environmental".
- "Air transport" (V95) was separated into its own cause of death category from "Other Transport" (V90-V99).
- Transport-related drowning deaths (V90, V92) were moved from the "Other Transport" (V90-V99) category to the "Drowning" (W65-W74) category.

Morbidity (Hospitalization) Data

The ICD-9 External Cause of Injury Matrix was used to categorize injury hospitalizations by cause (Appendix B). Due to the unique modes of travel in the often harsh environmental conditions in Alaska, modifications were made to the matrix to better categorize Alaskan injury hospitalizations. These four modifications are listed below.

- "Snowmachine" (E820) injuries were separated into their own category from "Other Motor Vehicle" (E830-E838, E840-E845).
- "ATV" (E821) injuries were separated into their own category from "Other Motor Vehicle" (E830-E838, E840-E845).
- "Excessive Natural Cold" (E901) injuries were separated into their own category from "Natural/Environmental" (E900-E909, E928).
- "Dog Bite" (E906) injuries were separated into their own category from "Natural/Environmental" (E900-E909, E928).

DATA SOURCES

Mortality Data

Injury mortality data for years 1999-2005 were obtained from the Alaska Bureau of Vital Statistics. This data set included only those deaths that occured in Alaska and that occured to anyone identified as Alaska Native or American Indian on their death certificate. Injury deaths of Alaska Native or American Indian persons injured in Alaska but who died outside of Alaska were not included in the analysis. As a result, this report may underestimate the number of injury deaths and death rates. Rates for Alaska (all races) and U.S. (all races) were used for comparison populations. Injury death rates for these populations were gathered from the CDC National Center for Injury Prevention and Control's Web-Based Injury Statistics Query and Reporting System (WISQARS). The years 1999-2004 were included in this report (data for 2005 were not yet available).

Morbidity Data

Injury hospitalization data were obtained from the Alaska Trauma Registry (ATR). The ATR is a database managed by the State of Alaska's Injury Prevention and Emergency Medical Services program. To be included in the ATR, an individual must sustain an injury that results in either inpatient admission, transfer to an acute care facility, or death in an emergency department. This report includes only ATR data that resulted in an inpatient admission or transfer to an acute care facility that occurred to an Alaska Native person between the years 1991 and 2003 (hospitalizations that resulted in death were not included in this data set).

CALCULATION OF RATES

Injury death rates and injury hospitalization rates were calculated using population estimates provided by the Alaska Department of Labor & Workforce Development's (AK DOL), 1990s Race "Bridged" Smooth Series: 1990–2005. These estimates provide an intermediate value between the single race and multiple race estimates reported by the 2000 census.

Maps show the number of injury deaths and the hospitalization rates by region based on village of residence (rather than the village where injury occurred). In contrast, charts which list the leading causes of injury death and hospitalization by region were categorized by region using the village where the injury occurred.

Because many tribal health organization service areas are small, the numbers of injury deaths and hospitalizations are also small. As a result, several tribal health organization service areas were combined into one region to get a large enough population size to calculate rates. Appendix C lists each region with their corresponding census area/boroughs and tribal health organizations. As noted in Appendix C, some villages in the table are matched to a region that is not the same as their THO. This was necessary so that the boundaries for each region matched the AK DOL population estimates (census/borough boundaries). Appendix D contains a table of the regions and their

corresponding villages. This table was used to categorize the injury deaths and hospitalizations into their appropriate region. The age and gender distribution of each region was obtained by applying AK DOL Modified Age Race Estimates, based on the 2000 census, to all other years. For regional injury profiles, rate ratios were created to compare regional injury death and hospitalization rates to Alaska Native statewide rates. Confidence intervals were created around these ratios. Regional rates were considered significantly different if the 95% confidence interval did not contain one.

Mortality Data

Rates per 100,000 population were calculated for injury deaths. Death rates were not calculated for any category where the number of deaths was fewer than ten. Injury death rates based on a small number of deaths (10-19) were indicated with the use of an asterisk (*) because they may be unstable and should be interpreted with caution. Injury mortality rates were age-adjusted to the U.S. 2000 standard population.

Morbidity Data

Rates per 10,000 population were calculated for injury hospitalizations. Rates were not calculated where the number of hospitalizations in a category was fewer than twenty. Because no comparisons were made to other populations, no age-adjustment was made for injury morbidity data.

OTHER NOTES

Alcohol-related Injury Hospitalizations

This report presents information on alcohol-related injury hospitalizations. To be included as alcohol-related in the Alaska Trauma Registry (ATR), there must be a positive blood alcohol test or breathalyzer result within six hours of injury or documentation in the medical record that alcohol was involved. If a case does not meet these criteria, it will not be recorded as alcohol-related in the ATR. It is believed that the ATR underestimates the number of alcohol-related injuries.

Cost of Injury Hospitalizations

This report also presents information describing the medical cost of treating injury hospitalizations. The cost typically includes the costs of the hospital stay including labs and procedures, but not physician fees. The cost is often based on a formula rather than actual costs. It is believed that information included in this field of the ATR underestimates the actual direct cost of treating these injuries. Hospital charges for up to three acute care hospitalizations for any one injury are included if that information is collected, however this information may vary by hospital. It is recommended that you contact your local ATR Registrar for more detailed information.

DEFINITIONS

Age-adjusted rate: The application of age-specific rates in a population of interest to a standardized age distribution in order to eliminate differences in observed rates that result from age differences in population composition. This adjustment is usually done when comparing two or more populations at one point in time or one population at two or more points in time.

Crude rate: An estimate of the proportion of a population that experiences the event of interest (e.g. assault hospitalization rate) during a specified period. It is calculated by dividing the number of observations by the population at risk and multiplied by 100,000 (or other appropriate multiplier). When interpreting crude rates, bear in mind that rates may be affected by differences in population structures between areas.

Rate Ratio: Comparison of one rate with another to show how many times larger or smaller one is compared to the other. A rate ratio of less than one means that the rate in the population of interest is lower than that of the comparison population. Conversely, a rate ratio greater than one means that the rate in the population of interest is higher than in the comparison population. A rate ratio of one means that the rates are the same.

KYLA D. HAGAN

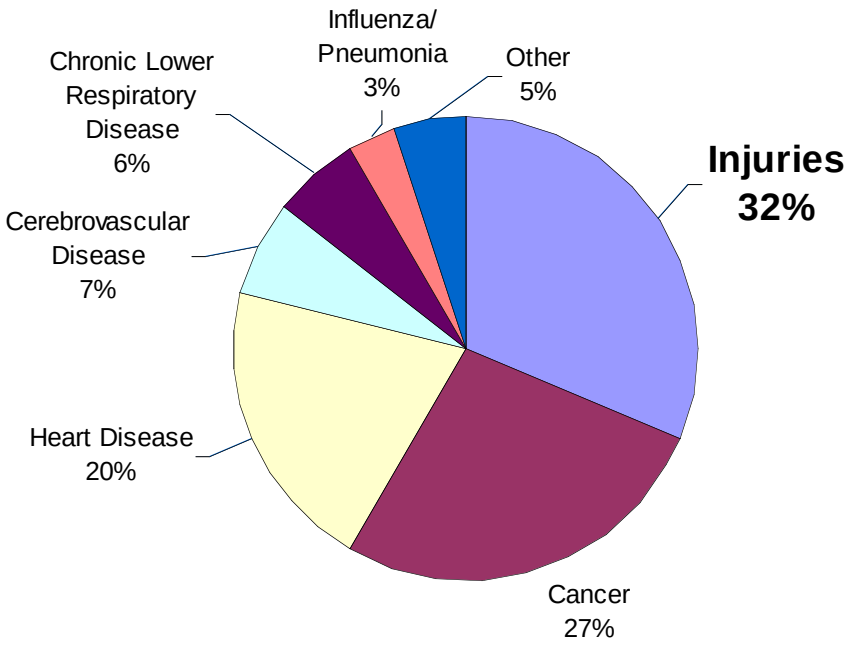
Injury Mortality

Leading Causes of All Deaths by Age Group
Alaska Natives, Both Genders, 1999-2004

Rank	Age Group <1	1-4	5-9	10-14	15-24	25-34	35-44	45-54	55-64	65+	All Ages
1	Congenital Anomalies 30	Unintentional Injury 25	Unintentional Injury 16	Unintentional Injury 28	Suicide 121	Unintentional Injury 78	Unintentional Injury 119	Malignant Neoplasms 85	Malignant Neoplasms 178	Malignant Neoplasms 484	Malignant Neoplasms 815
2	SIDS 25	Homicide 5	*	*	Unintentional Injury 96	Suicide 64	Suicide 43	Unintentional Injury 82	Heart Disease 84	Heart Disease 409	Heart Disease 613
3	Unintentional Injury 16	Septicemia 5			Homicide 19	Homicide 21	Malignant Neoplasms 40	Heart Disease 62	Unintentional Injury 49	Chronic Lower Respiratory Disease 146	Unintentional Injury 581
4	Influenza & Pneumonia 8	*			*	Malignant Neoplasms 14	Heart Disease 33	Suicide 24	Liver Disease 24	Cerebro-vascular Disease 146	Suicide 263
5	Placenta Cord Membranes 5					Heart Disease 13	Liver Disease 24	Liver Disease 23	Chronic Lower Respiratory Disease 21	Influenza & Pneumonia 72	Cerebro-vascular Disease 199
6	*					Liver Disease 6	Cerebro-vascular Disease 22	Cerebro-vascular Disease 18	Cerebro-vascular Disease 18	Unintentional Injury 72	Chronic Lower Respiratory Disease 180
7						*	Homicide 17	Homicide 16	Diabetes Mellitus 10	Diabetes Mellitus 39	Influenza & Pneumonia 100
8							HIV 15	Chronic Lower Respiratory Disease 8	Influenza & Pneumonia 6	Nephritis 30	Homicide 94
9							*	Diabetes Mellitus 7	Suicide 6	Alzheimer's Disease 23	Liver Disease 93
10								HIV 7	Septicemia 5	Septicemia 22	Diabetes Mellitus 61

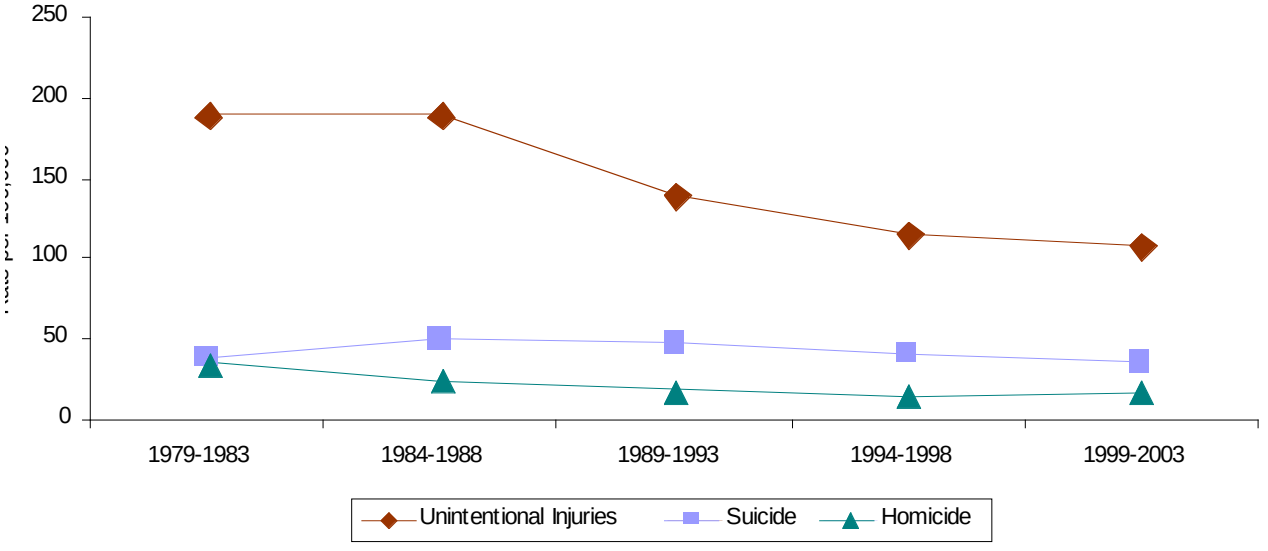
* Causes resulting in fewer than 5 deaths are not listed.
Number of deaths during the 6 year period for each cause is shown in the appropriate box.
Data Source: National Center for Injury Prevention and Control, WISQARS at http://www.cdc.gov/ncipc/wisqars/

Leading Causes of Death
Alaska Natives, Both Genders, 1999-2004



(n=4,105)

Age-Adjusted Injury Death Rates by Intent
Alaska Natives, Both Genders, 1979-2003



Five Leading Causes of Injury Death by Region
Alaska Natives, Both Genders, All Ages, 1999-2005

	Region												
	Aleutians & Pribilofs	Anchorage Mat-Su	Arctic Slope	Bristol Bay	Copper River/ Prince William Sound	Interior	Kenai Peninsula	Kodiak Area	Northwest Arctic	Norton Sound	Southeast	Yukon-Kuskokwim	TOTAL
Total Injury Deaths	20	248	49	78	18	160	33	10	81	119	84	237	1137
1	Poisoning (Unintentional) 7	Suicide 56	Suicide 19	Drowning 17	Motor Vehicle 5	Suicide 40	Motor Vehicle 14	*	Suicide 31	Suicide 49	Drowning 17	Suicide 75	Suicide 306
2	Suicide 5	Poisoning (Unintentional) 55	Off Road Vehicle 9	Air Transport 14	*	Drowning 20	Suicide 5		Drowning 15	Poisoning (Unintentional) 11	Motor Vehicle 15	Drowning 44	Drowning 140
3	*	Motor Vehicle 49	*	Off Road Vehicle 11		Motor Vehicle 18	*		Off Road Vehicle 10	Motor Vehicle 10	Homicide 12	Homicide 22	Motor Vehicle 127
4		Homicide 27		Suicide 9		Homicide 17			*	Drowning 9	Suicide 11	Off Road Vehicle 22	Poisoning (Unintentional) 122
5		Suffocation (Unintentional) 15		Homicide 7		Poisoning (Unintentional) 17				Off Road Vehicle 9	Poisoning (Unintentional) 8	Excessive Natural Cold 17	Homicide 103

* Causes resulting in fewer than 5 deaths are not listed.
Number of deaths during the 7 year period for each cause is shown in the appropriate box.

Five Leading Causes of Injury Death by Age Group
Alaska Natives, Both Genders, 1999-2005

	Age Group								
	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70+	TOTAL
Total Injury Deaths	86	193	240	219	184	98	59	58	1137
1	Suffocation (Unintentional) 21	Suicide 86	Suicide 100	Suicide 57	Suicide 40	Suicide 18	Motor Vehicle 11	Unspecified 12	Suicide 306
2	Drowning 15	Drowning 25	Drowning 29	Poisoning (Unintentional) 34	Poisoning (Unintentional) 34	Motor Vehicle 17	Off Road Vehicle 9	Motor Vehicle 7	Drowning 140
3	Motor Vehicle 12	Off Road Vehicle 21	Homicide 26	Motor Vehicle 27	Drowning 19	Drowning 16	Excessive Natural Cold 8	Suffocation (Unintentional) 6	Motor Vehicle 127
4	Homicide 9	Homicide 17	Motor Vehicle 22	Drowning 26	Homicide 19	Poisoning (Unintentional) 13	Poisoning (Unintentional) 6	Drowning 5	Poisoning (Unintentional) 122
5	Suffocation (Undetermined Intent) 6	Motor Vehicle 16	Poisoning (Unintentional) 19	Homicide 18	Motor Vehicle 15	Homicide 7	Drowning 5	*	Homicide 103

* Causes resulting in fewer than 5 deaths are not listed.
Number of deaths during the 7 year period for each cause is shown in the appropriate box.

Five Leading Causes of Injury Death by Age Group
Alaska Natives, Males, 1999-2005

	Age Group								
	0-9	**10-19**	**20-29**	**30-39**	**40-49**	**50-59**	**60-69**	**70+**	**TOTAL**
Total Injury Deaths	52	133	185	151	129	76	44	41	811
1	Motor Vehicle 11	Suicide 61	Suicide 77	Suicide 42	Suicide 34	Suicide 17	Motor Vehicle 10	Unspecified 8	Suicide 235
2	Suffocation (Unintentional) 11	Drowning 18	Drowning 28	Drowning 22	Drowning 17	Drowning 14	Excessive Natural Cold 8	Drowning 5	Drowning 116
3	Drowning 8	Off Road Vehicle 17	Motor Vehicle 16	Motor Vehicle 20	Poisoning (Unintentional) 16	Motor Vehicle 12	Off Road Vehicle 8	Motor Vehicle 5	Motor Vehicle 97
4	Homicide 6	Motor Vehicle 13	Off Road Vehicle 16	Poisoning (Unintentional) 12	Excessive Natural Cold 11	Poisoning (Unintentional) 12	*	*	Off Road Vehicle 122
5	*	Homicide 11	Homicide 13	Homicide 11	Homicide 11	Off Road Vehicle 8			Homicide 61

* Causes resulting in fewer than 5 deaths are not listed.
Number of deaths during the 7 year period for each cause is shown in the appropriate box.

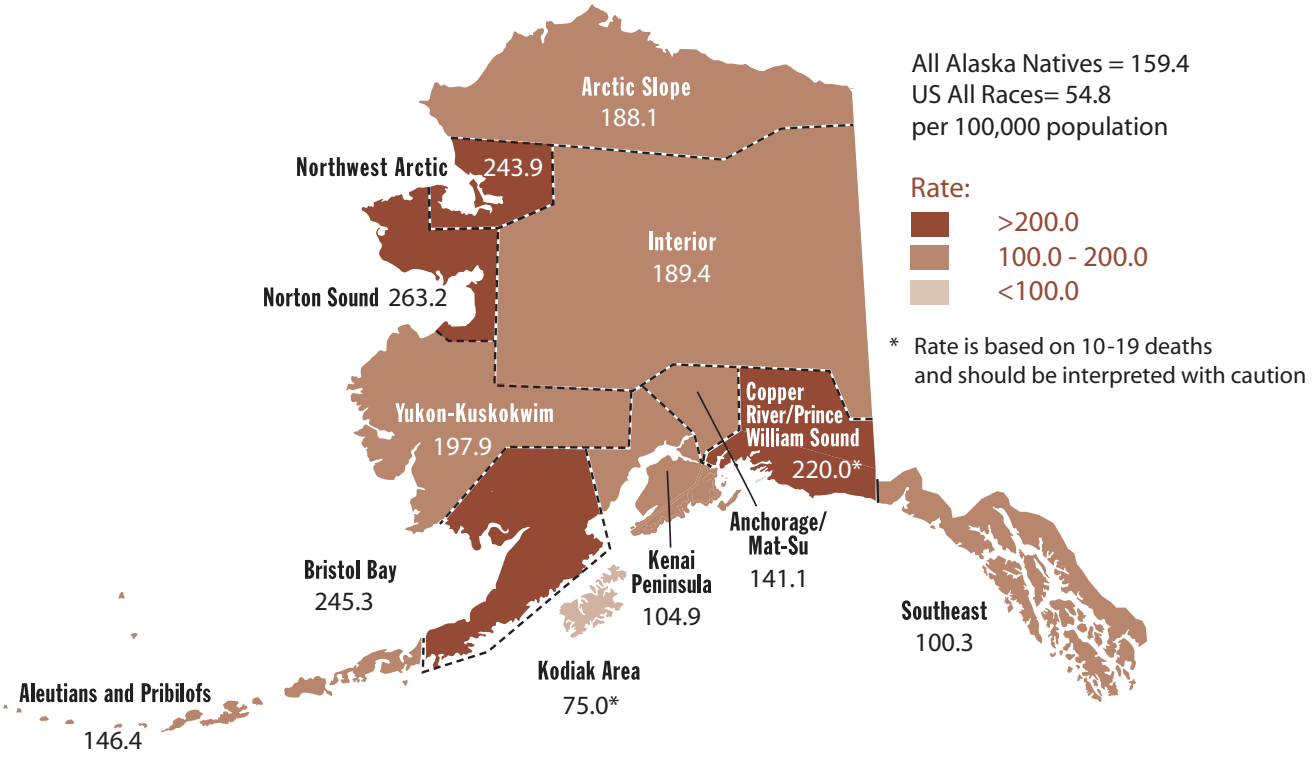
Five Leading Causes of Injury Death by Age Group
Alaska Natives, Females, 1999-2005

	Age Group								
	0-9	**10-19**	**20-29**	**30-39**	**40-49**	**50-59**	**60-69**	**70+**	**TOTAL**
Total Injury Deaths	34	60	55	68	55	22	15	17	326
1	Suffocation (Unintentional) 10	Suicide 25	Suicide 23	Poisoning (Unintentional) 22	Poisoning (Unintentional) 18	Homicide 5	*	*	Suicide 71
2	Drowning 7	Drowning 7	Homicide 13	Suicide 15	Homicide 8	Motor Vehicle 5			Poisoning (Unintentional) 65
3	*	Homicide 6	Poisoning (Unintentional) 7	Homicide 7	Suicide 6	*			Homicide 42
4		*	Motor Vehicle 6	Motor Vehicle 7	Motor Vehicle 5				Motor Vehicle 30
5			*	*	*				Drowning 24

* Causes resulting in fewer than 5 deaths are not listed.
Number of deaths during the 7 year period for each cause is shown in the appropriate box.

ALL INJURIES

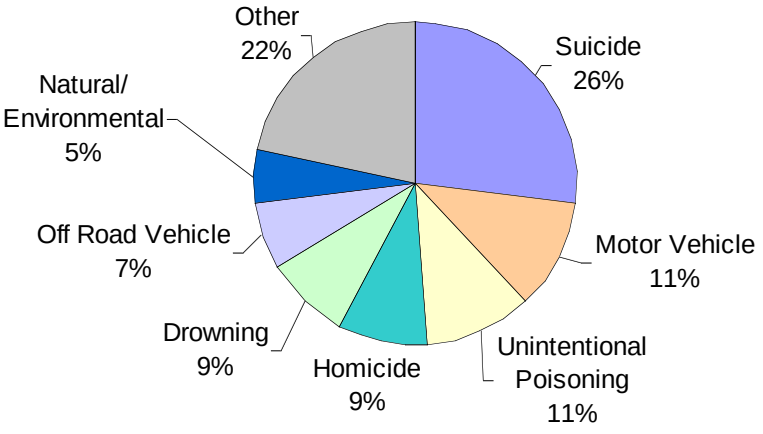
Age-adjusted Injury Death Rate by Region
Alaska Natives, Both Genders, All Ages, 1999-2005



Summary – All Injury Deaths

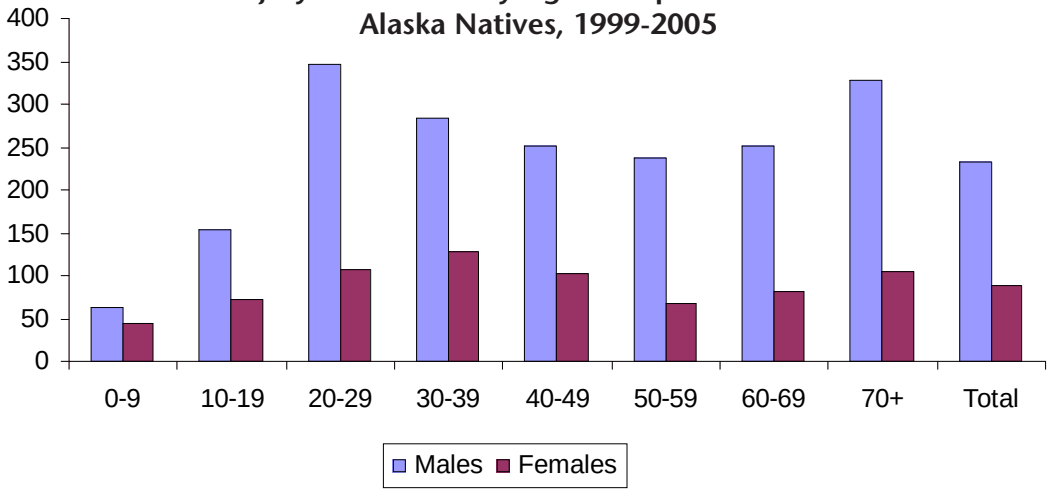
- During 1999-2005, there were 1,137 Alaska Natives who died as a result of an injury.
- The Kodiak Area had the lowest injury death rate of all areas.
- Suicide was the leading cause of injury death. It accounted for more than one-quarter of all injury deaths (26%).
- 20-29 year olds had the highest injury death rate of any age group (346 per 100,000).
- Two and a half times more men died as a result of an injury than women; 811 men and 326 women.
- During 1999-2005, Alaska Natives were 2.9 times as likely to die of an injury as the U.S. population in general (all races) and 1.8 times as likely to die of an injury as the Alaska, all races, population.
- Between 1999 and 2005, there was a 19 percent decrease in the injury death rate among Alaska Natives.

Injury Deaths by Cause
Alaska Natives, Both Genders, All Ages, 1999-2005

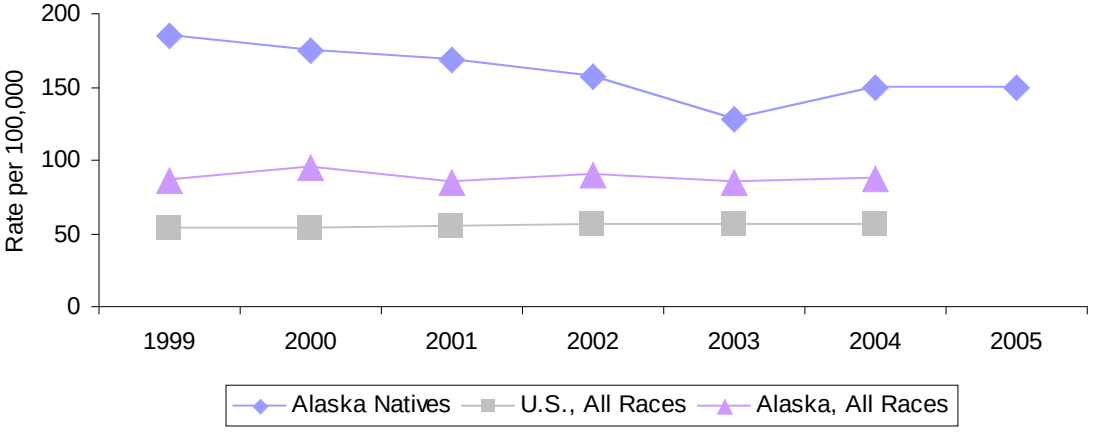


(n=1,137)

Injury Death Rate by Age Group and Gender
Alaska Natives, 1999-2005

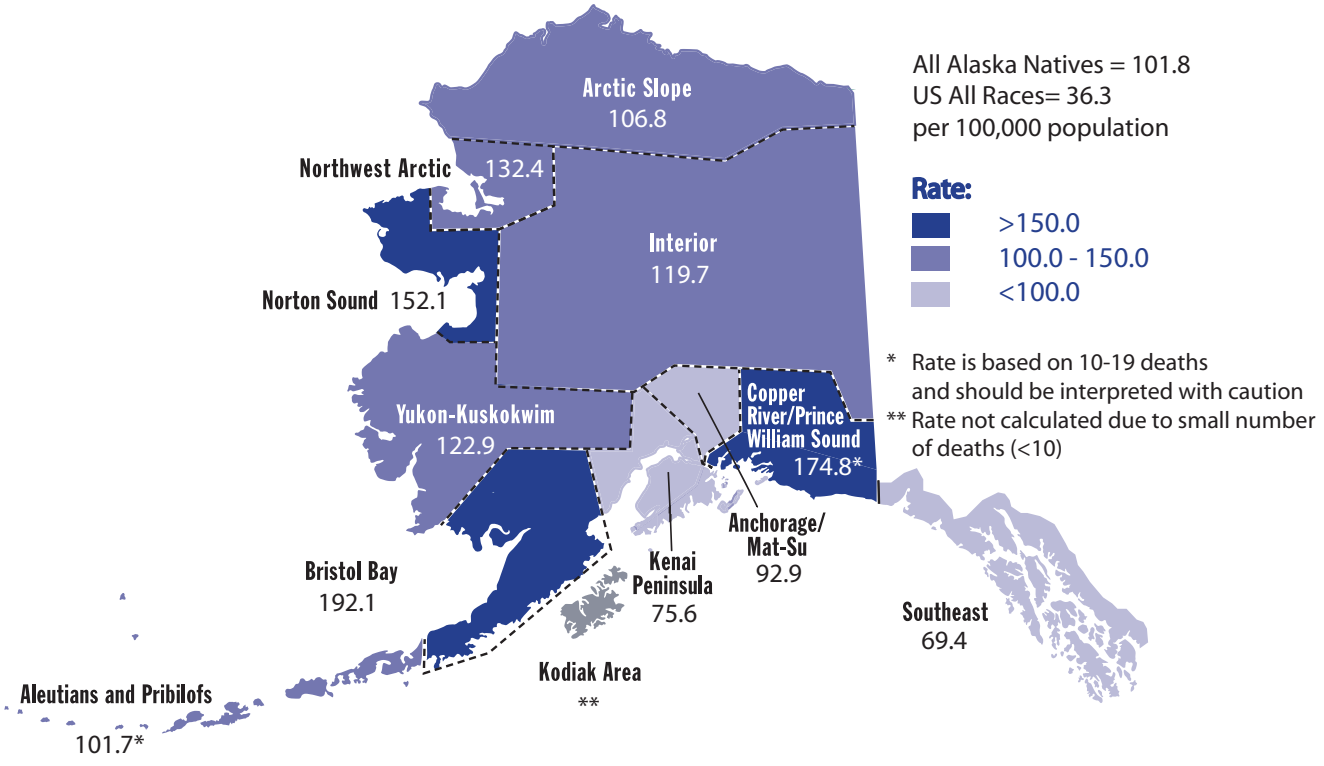


Age-adjusted Injury Death Rate by Year
Alaska Natives, Alaska all races, and U.S. all races, 1999-2005



UNINTENTIONAL INJURIES

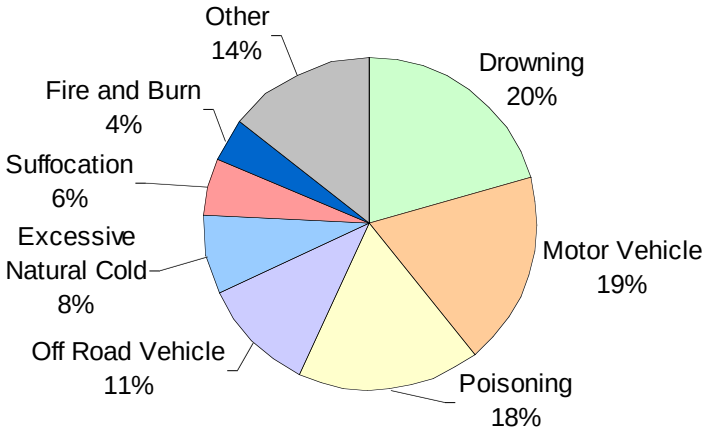
Age-adjusted Unintentional Injury Death Rate by Region, Alaska Natives, Both Genders, All Ages, 1999-2005



Summary – Unintentional Injury Deaths

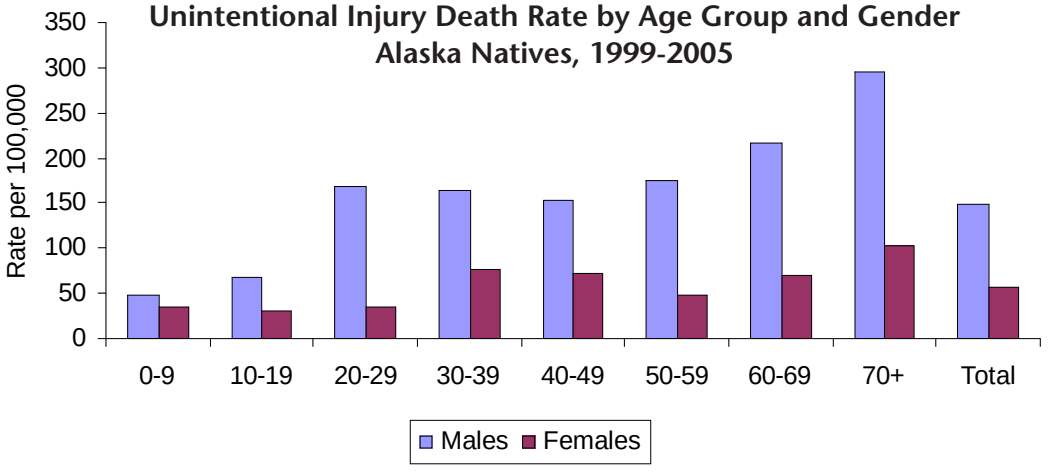
- From 1999-2005, 682 Alaska Natives died of an unintentional injury.
- Of those areas where rates could be calculated, the Southeast region had the lowest unintentional injury death rate.
- Drowning was the leading cause of unintentional injury death, accounting for 20 percent of all deaths.
- Alaska Natives age 70 and over had the highest unintentional injury death rate of any age group (295 per 100,000). The rate for this age group was two times greater than the rate for all ages.
- Males were two and a half times more likely to die of an unintentional injury than females.
- During 1999-2005, Alaska Natives were 2.8 times more likely to die of an unintentional injury as the U.S. population in general (all races) and 1.7 times more likely to die of an unintentional injury as the Alaska, all races, population.
- Between 1999 and 2005, there was a 17 percent decrease in the unintentional injury death rate.

Unintentional Injury Deaths by Cause
Alaska Natives, Both Genders, All Ages, 1999-2005

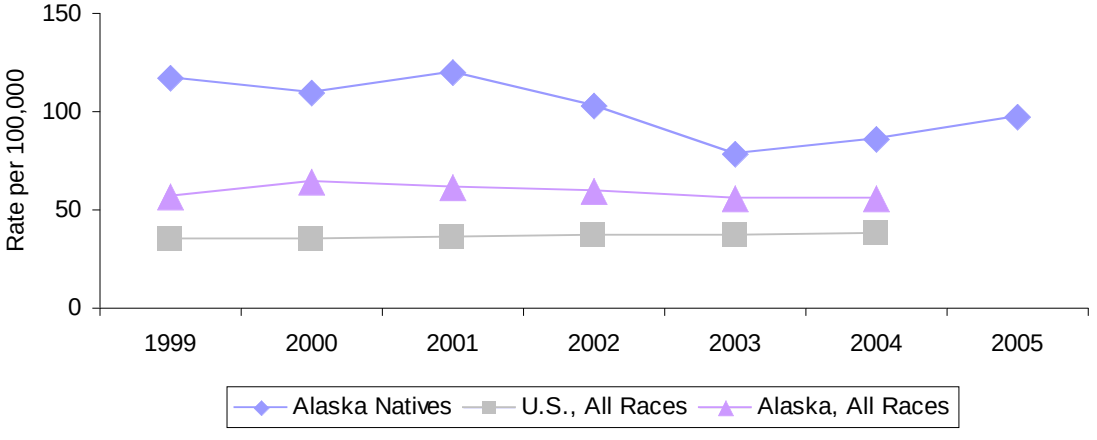


(n=682)

Unintentional Injury Death Rate by Age Group and Gender
Alaska Natives, 1999-2005

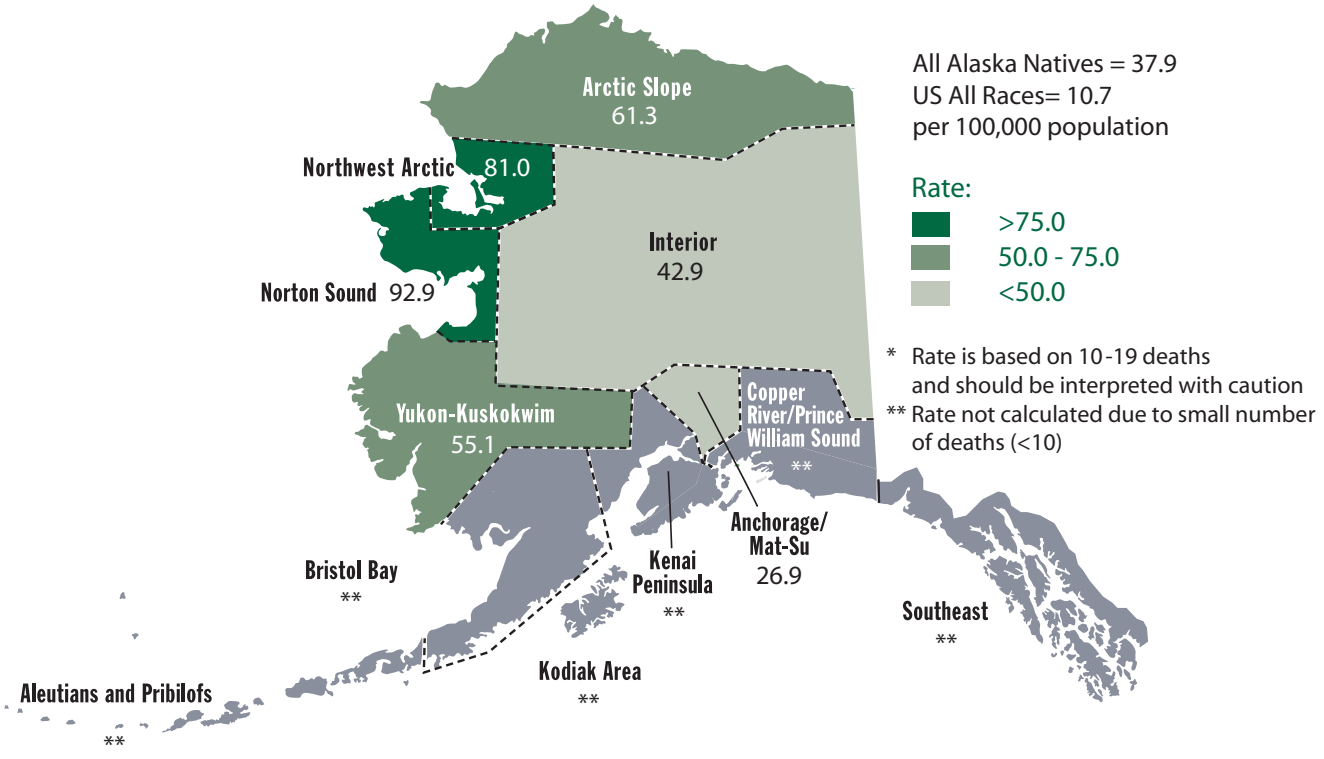


Age-adjusted Unintentional Injury Death Rate by Year
Alaska Natives, Alaska all races, and U.S. all races, 1999-2005



SUICIDE

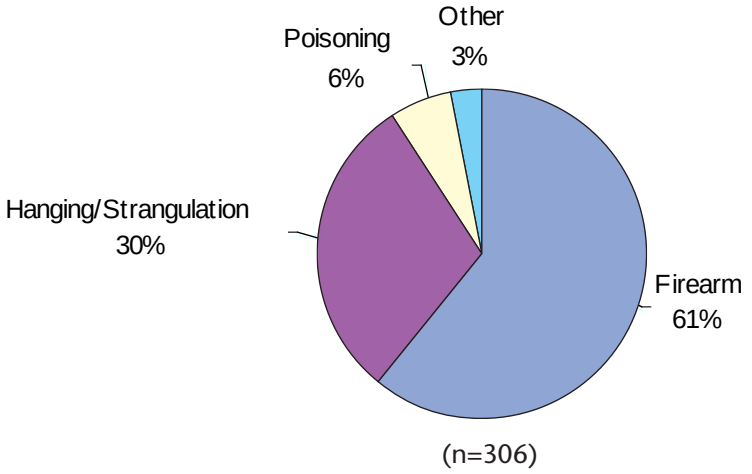
Age-adjusted Suicide Rate by Region
Alaska Natives, Both Genders, All Ages, 1999-2005



Summary – Suicide

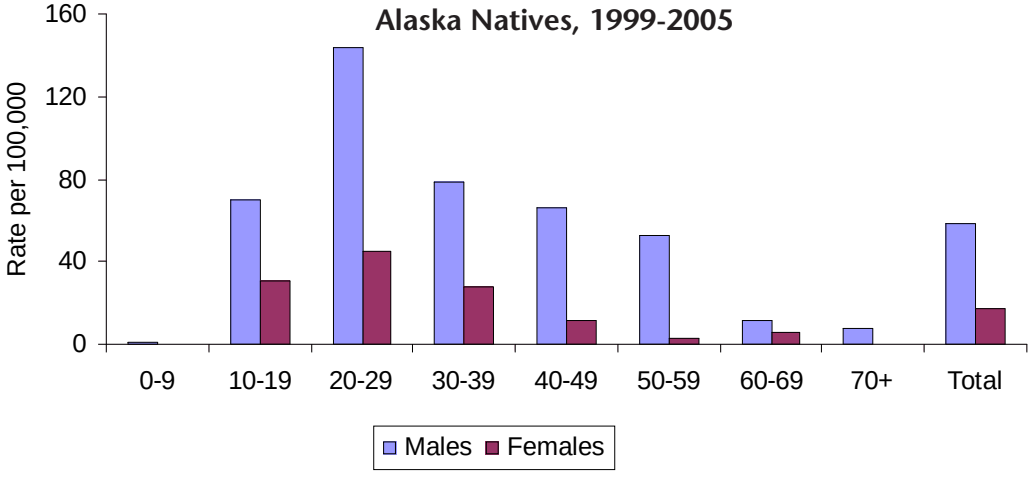
- There were 306 Alaska Native suicide deaths during 1999-2005.
- For those areas where rates could be calculated, Norton Sound and the Northwest Arctic had the highest suicide rates. Anchorage/Mat-Su had the lowest rate.
- A firearm was used in 61 percent of suicides.
- 20-29 year olds had the highest suicide rate of any age group. The rate for this age group was two and a half times greater than the rate for all ages.
- During 1999-2005, the suicide rate among Alaska Natives was 3.5 times that of the U.S. population (all races) and 1.9 times that of the Alaska population (all races).
- Between 1999 and 2005, there was a 41 percent increase in the suicide death rate. However, suicide rates fluctuated throughout this time period.

Suicide by Method Used
Alaska Natives, Both Genders, All Ages, 1999-2005

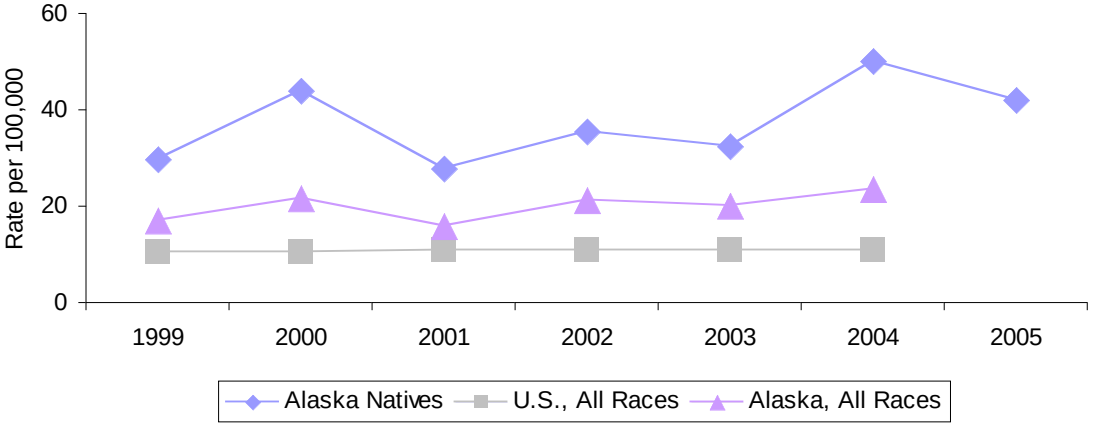


(n=306)

Suicide Rate per 100,000 by Age Group and Gender
Alaska Natives, 1999-2005



Age-adjusted Suicide Rate by Year
Alaska Natives, Alaska all races, and U.S. all races, 1999-2005



Injury Morbidity

Five Leading Causes of Injury Hospitalization by Region
Alaska Natives, Both Genders, All Ages, 1991-2003

	Region												
	Aleutians & Pribilofs	**Anchorage Mat-Su**	**Arctic Slope**	**Bristol Bay**	**Copper River/ Prince William Sound**	**Interior**	**Kenai Peninsula**	**Kodiak Area**	**Northwest Arctic**	**Norton Sound**	**Southeast**	**Yukon-Kuskokwim**	**TOTAL**
Total Injury Hosp.	207	4102	1015	970	261	2477	448	299	1329	1385	2999	3205	18768
1	Falls 88	Falls 1152	Falls 245	Falls 280	Falls 77	Falls 653	Falls 149	Falls 95	Falls 267	Falls 328	Falls 1029	Falls 806	Falls 5185
2	Assault 24	Motor Vehicle 737	Suicide Attempt 149	ATV 115	Motor Vehicle 54	Suicide Attempt 464	Motor Vehicle 85	Suicide Attempt 46	Suicide Attempt 267	Suicide Attempt 292	Suicide Attempt 405	Suicide Attempt 412	Suicide Attempt 2729
3	ATV 15	Assault 695	Assault 121	Suicide Attempt 90	Assault 26	Assault 376	Suicide Attempt 54	Assault 34	Assault 167	Assault 130	Assault 381	Assault 399	Assault 2474
4	Motor Vehicle 13	Suicide Attempt 518	Snow-machine 93	Snow-machine 84	Suicide Attempt 21	Motor Vehicle 245	Assault 38	ATV 27	Snow-machine 163	ATV 125	Motor Vehicle 314	Snow-machine 338	Motor Vehicle 1839
5	Suicide Attempt 6	Struck by Object /Person 131	ATV 90	Assault 78	ATV 14	Snow-machine 169	ATV 13	Motor Vehicle 23	ATV 108	Snow-machine 116	Struck by Object /Person 207	Cut/Piercing 167	Snow-machine 1029

Number of hospitalizations during the 13 year period for each cause is shown in the appropriate box.

Five Leading Causes of Injury Hospitalization by Age Group
Alaska Natives, Both Genders, 1991-2003

	Age Group								
	0-9	**10-19**	**20-29**	**30-39**	**40-49**	**50-59**	**60-69**	**70+**	**TOTAL**
Total Injury Hosp.	2084	3579	3782	3665	2394	1220	902	1140	18768
1	Falls 726	Suicide Attempts 832	Suicide Attempts 848	Assaults 770	Falls 678	Falls 546	Falls 510	Falls 908	Falls 5185
2	Fire/Burn 155	Falls 565	Assaults 709	Falls 762	Assaults 438	Motor Vehicle 116	Motor Vehicle 71	Motor Vehicle 51	Suicide Attempts 2729
3	Motor Vehicle 154	Motor Vehicle 376	Falls 489	Suicide Attempts 628	Suicide Attempts 317	Assaults 114	Assaults 51	Assaults 34	Assaults 2474
4	Struck by Object or Person 121	ATV 341	Motor Vehicle 459	Motor Vehicle 364	Motor Vehicle 248	Suicide Attempts 77	Snow-Machine 41	Snow-machine 22	Motor Vehicle 1839
5	Unintentional Poisoning 117	Assaults 290	Snow-machine 296	Snow-machine 225	Snow-machine 106	Snow-machine 63	Other 34	Struck by Object or Person 21	Snow-machine 1029

Number of hospitalizations during the 13 year period for each cause is shown in the appropriate box.

Five Leading Causes of Injury Hospitalization by Age Group
Alaska Natives, Males, 1991-2003

	Age Group								
	0-9	**10-19**	**20-29**	**30-39**	**40-49**	**50-59**	**60-69**	**70+**	**TOTAL**
Total Injury Hosp.	1272	2177	2459	2285	1436	663	436	395	11125
1	Falls 427	Falls 380	Assaults 529	Assaults 546	Falls 330	Falls 249	Falls 201	Falls 274	Falls 2565
2	Motor Vehicle 101	Suicide Attempts 248	Suicide Attempts 356	Falls 426	Assaults 327	Assaults 83	Motor Vehicle 41	Motor Vehicle 18	Assaults 1795
3	Fire/Burn 97	ATV 223	Falls 277	Suicide Attempts 244	Motor Vehicle 138	Motor Vehicle 57	Assaults 30	Snow-machine 15	Motor Vehicle 1061
4	Struck by Object or Person 73	Motor Vehicle 220	Motor Vehicle 274	Motor Vehicle 212	Suicide Attempts 125	Snow-machine 44	Other 26	Assaults 14	Suicide Attempts 1009
5	Foreign Body 69	Assaults 217	Snow-machine 250	Snow-machine 175	Snow-machine 81	Cut/Piercing 30	Snow-machine 24	ATV 12	Snow-machine 787

Number of hospitalizations during the 13 year period for each cause is shown in the appropriate box.

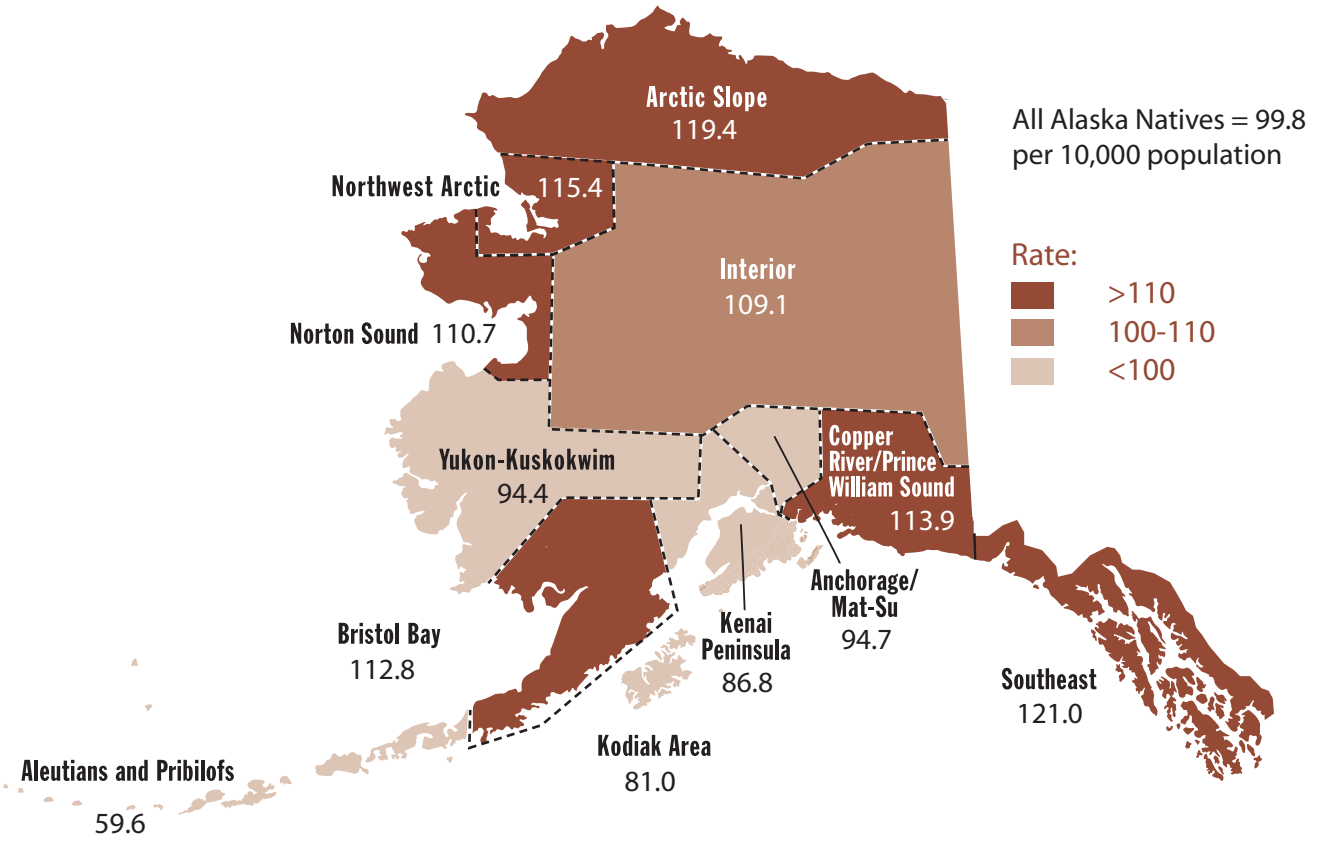
Five Leading Causes of Injury Hospitalization by Age Group
Alaska Natives, Females, 1991-2003

	Age Group								
	0-9	**10-19**	**20-29**	**30-39**	**40-49**	**50-59**	**60-69**	**70+**	**TOTAL**
Total Injury Hosp.	809	1399	1321	1377	958	557	466	744	7631
1	Falls 297	Suicide Attempt 583	Suicide Attempt 492	Suicide Attempt 384	Falls 348	Falls 297	Falls 309	Falls 634	Falls 2618
2	Fire/Burn 58	Falls 185	Falls 212	Falls 336	Suicide Attempt 192	Motor Vehicle 59	Motor Vehicle 30	Motor Vehicle 32	Suicide Attempt 1719
3	Motor Vehicle 52	Motor Vehicle 156	Motor Vehicle 184	Assault 224	Assault 111	Suicide Attempt 52	Assault 21	Assault 20	Motor Vehicle 775
4	Poisoning (Unintentional) 51	ATV 118	Assault 180	Motor Vehicle 152	Motor Vehicle 110	Assault 31	Snow-machine 17	Struck by Object or person 12	Assault 679
5	Struck by Object or Person 48	Assault 73	ATV 47	Snow-machine 50	Struck by Object or Person 27	Snow-machine 19	ATV 15	Over-exertion 8	ATV 272

Number of hospitalizations during the 13 year period for each cause is shown in the appropriate box.

UNINTENTIONAL INJURY HOSPITALIZATION

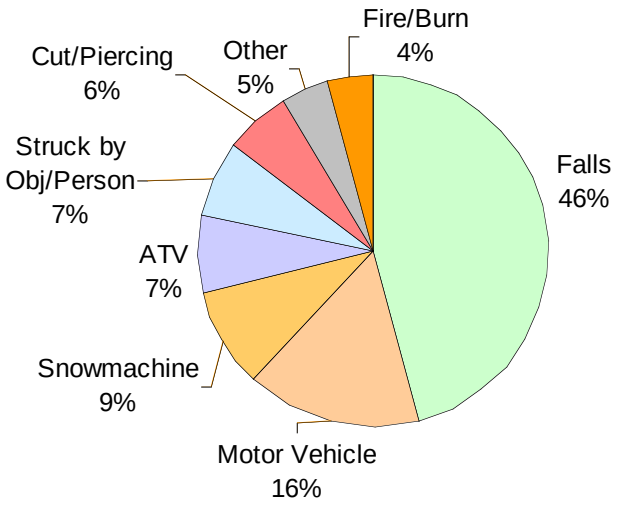
Unintentional Injury Hospitalization Rate by Region
Alaska Natives, Both Genders, All Ages 1991-2003



Summary – Unintentional Injury Hospitalization

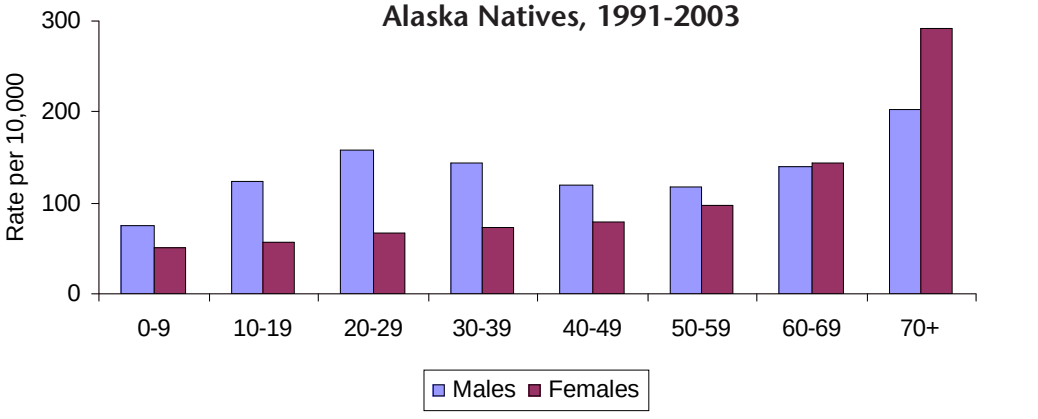
- Unintentional injuries include all types of injury in which the harmful outcome was not intended. Examples of unintentional injuries include: falls, motor vehicle injuries, snowmachine and ATV injuries.
- 71 percent (13,388) of all injury hospitalizations were due to unintentional injuries.
- Falls were the leading cause of unintentional injury hospitalization among Alaska Native people.
- Overall, Alaska Native men were 1.6 times more likely to be hospitalized for an unintentional injury than were women.
- 29 percent of all unintentional injury hospitalizations were recorded as alcohol-related.

Unintentional Injury Hospitalization by Cause
Alaska Natives, Both Genders, All Ages 1991-2003

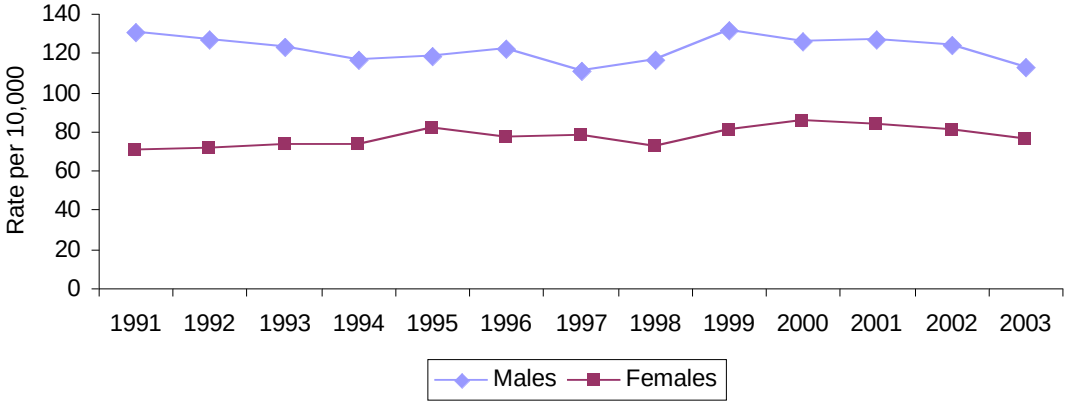


(n=13,388)

Unintentional Injury Hospitalization Rate by Age Group and Gender
Alaska Natives, 1991-2003

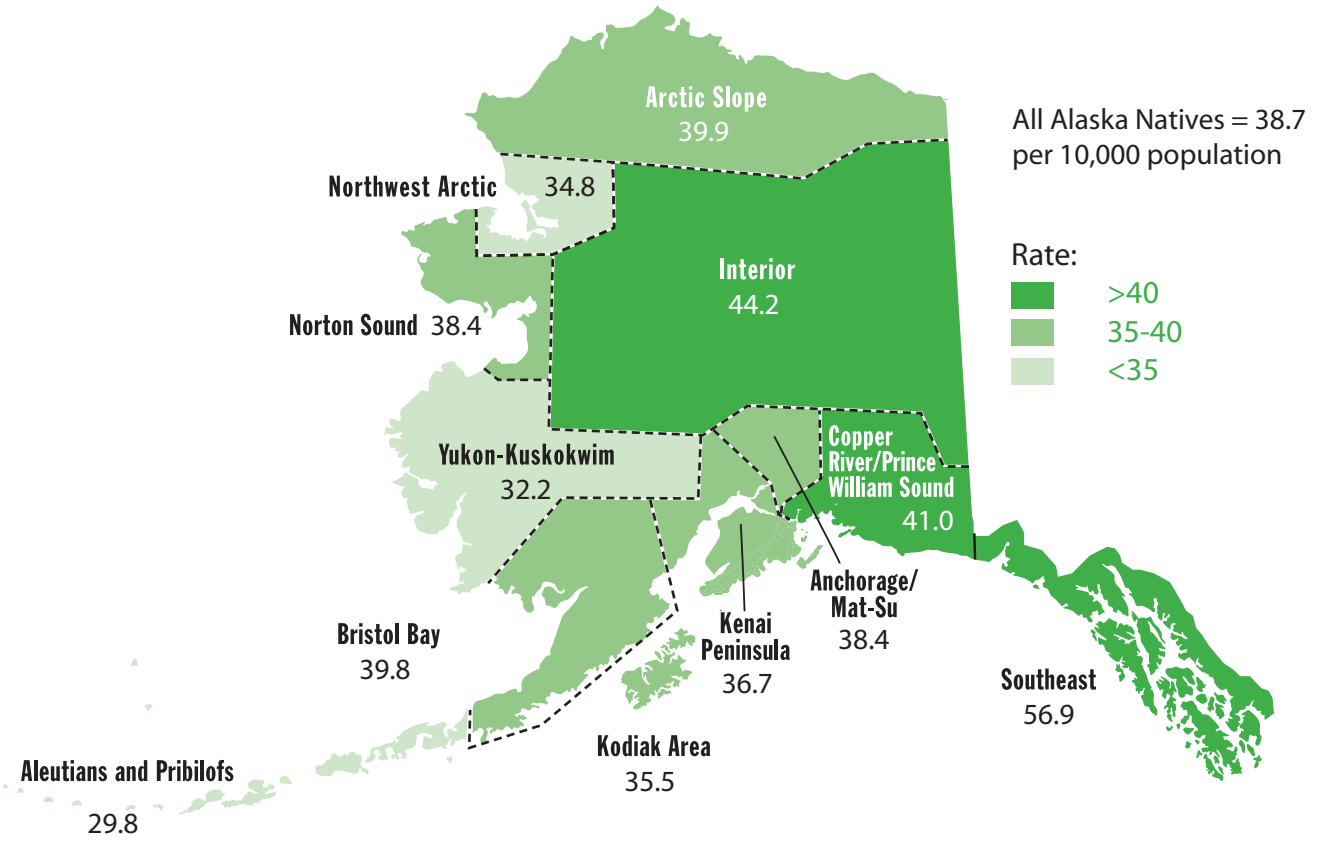


Unintentional Injury Hospitalization Rate by Year and Gender
Alaska Natives, 1991-2003



FALL-RELATED INJURY HOSPITALIZATIONS

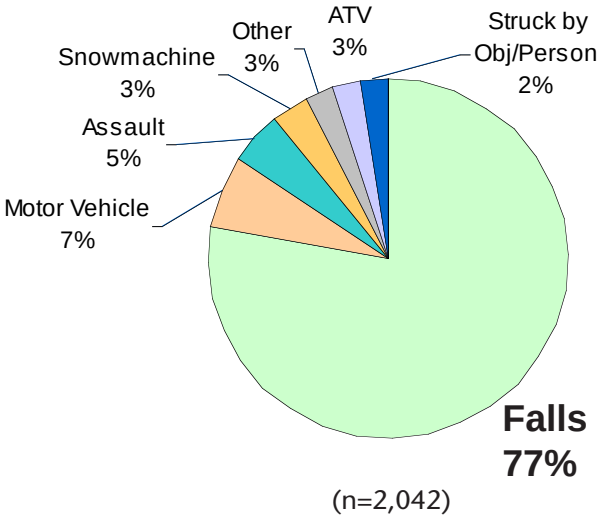
Fall-Related Injury Hospitalization Rate by Region
Alaska Natives, Both Genders, All Ages, 1991-2003



Summary – Fall-Related Injury Hospitalizations

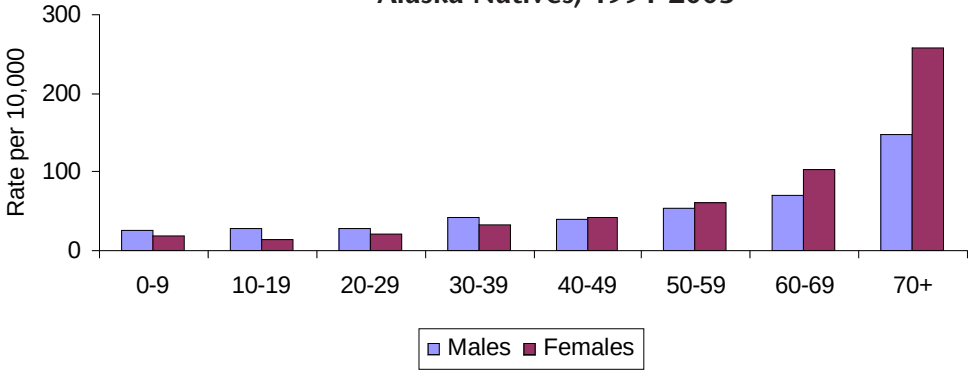
- Falls, the leading cause of injury hospitalization among Alaska Natives, resulted in 5,185 hospitalizations. There were almost twice as many fall-related injuries as the next leading cause of injury hospitalization – suicide attempts.
- 77 percent of all injury hospitalizations among Alaska Natives over 60 years of age are caused by a fall.
- The hospitalization rate for falls was highest among those over 70 years of age; the rate for this age group was 5.4 times greater than the rate for all ages.
- Falls were the leading cause of injury hospitalization for all of Alaska's regions.
- 27 percent of all fall-related injury hospitalizations were recorded as alcohol-related.

Leading Causes of Injury Hospitalization
Alaska Natives Over Age 60, Both Genders, 1991-2003

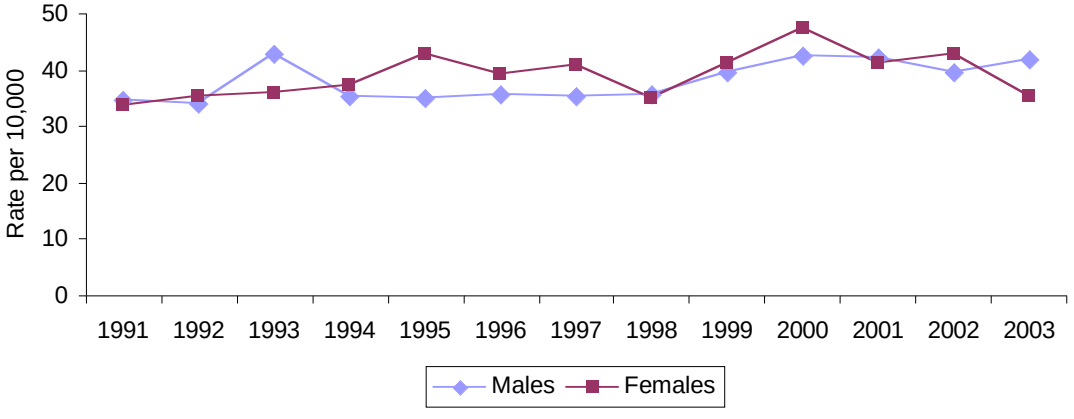


(n=2,042)

Fall-Related Injury Hospitalization Rate by Age Group and Gender
Alaska Natives, 1991-2003

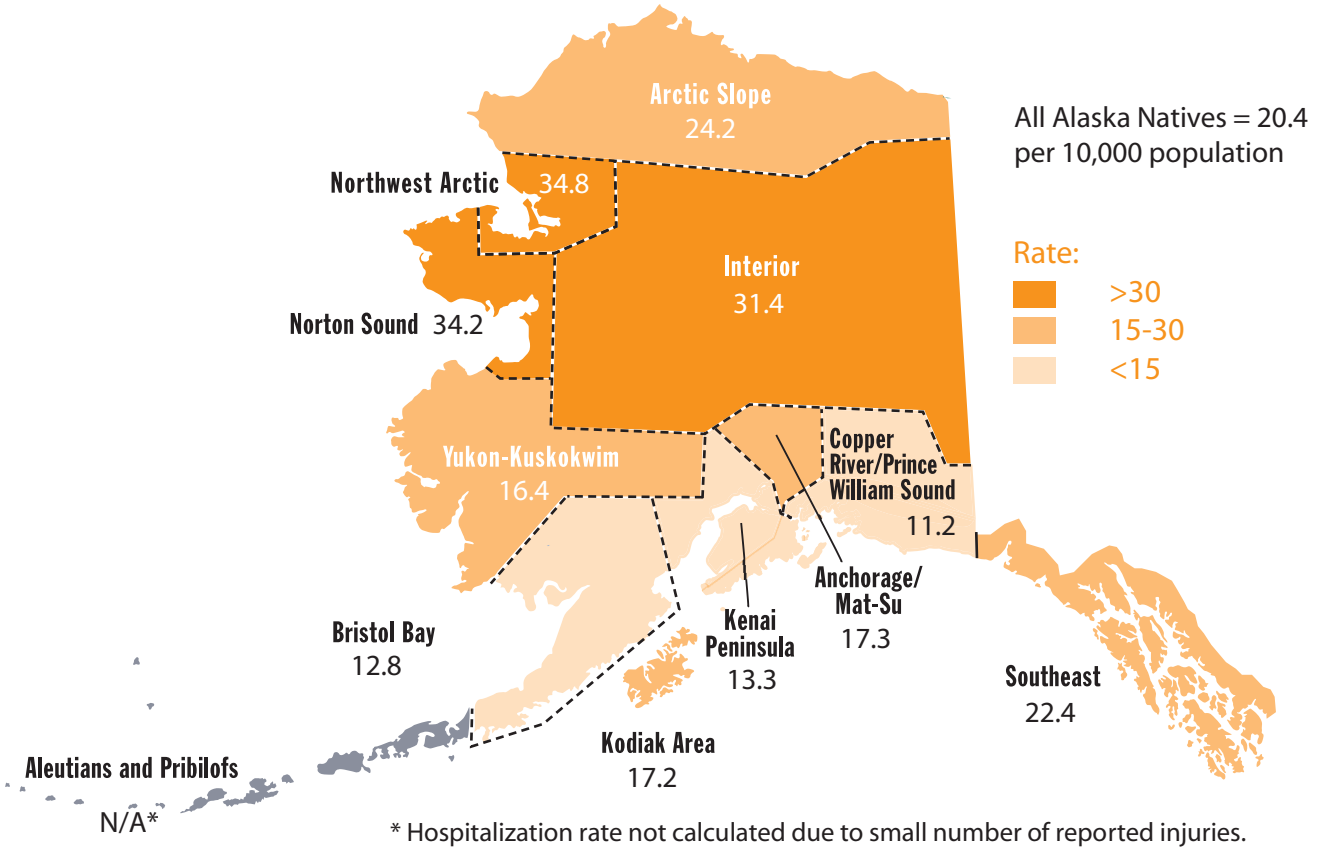


Fall-Related Injury Hospitalization Rate by Year and Gender
Alaska Natives, 1991-2003



SUICIDE ATTEMPT HOSPITALIZATIONS

Suicide Attempt Hospitalization Rate by Region
Alaska Natives, Both Genders, All Ages, 1991-2003

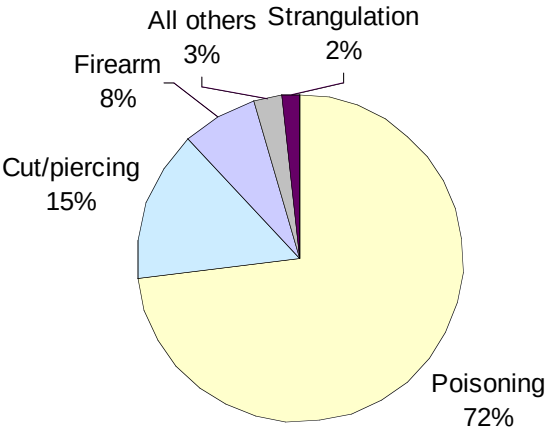


* Hospitalization rate not calculated due to small number of reported injuries.

Summary – Suicide Attempt Hospitalizations

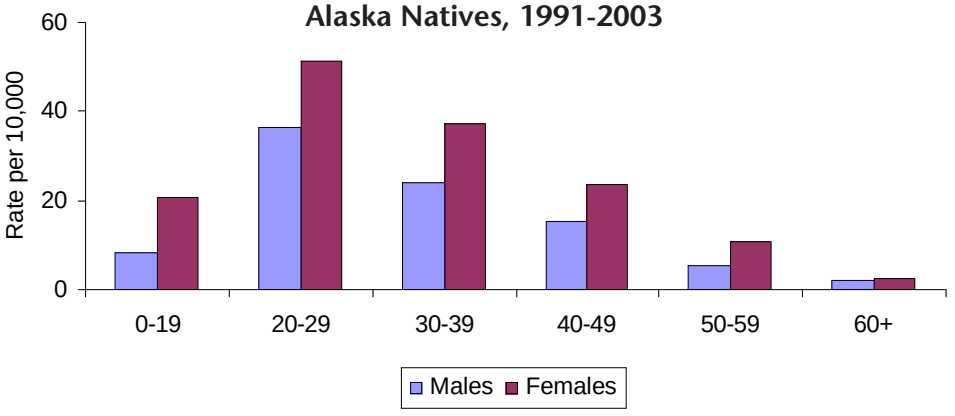
- Suicide attempts were the second leading cause of injury hospitalization among all Alaska Native people, resulting in 2,729 injury hospitalizations.
- Poisoning was the most common method used among those who were hospitalized for a suicide attempt. Almost three out of every four suicide attempts resulted from an overdose of medications.
- Suicide attempts were the leading cause of injury hospitalization among Alaska Natives aged 10-29.
- The injury hospitalization rate for suicide attempts was highest among Alaska Native females aged 20-29 (51.4 per 10,000 population). The rate in this age group was 2.5 times greater than the rate for all Alaska Natives.
- The hospitalization rate for suicide attempts was higher for Alaska Native females than the rate for males. During 1995 to 2003, the hospitalization rate for suicide attempts has remained steady.
- 57 percent of all hospitalized suicide attempts were recorded as alcohol-related.

Suicide Attempts by Method
Alaska Natives, Both Genders, All Ages, 1991-2003

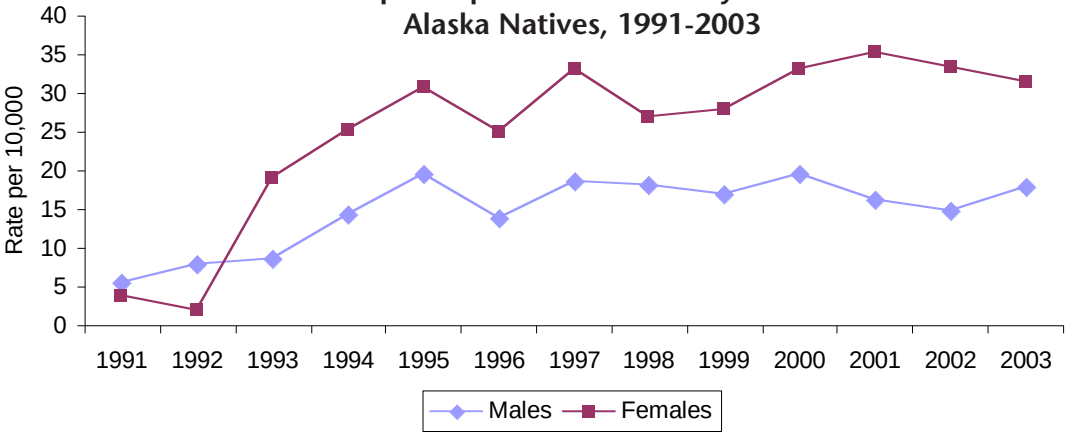


(n=2,729)

Suicide Attempt Hospitalization Rate by Age Group and Gender
Alaska Natives, 1991-2003



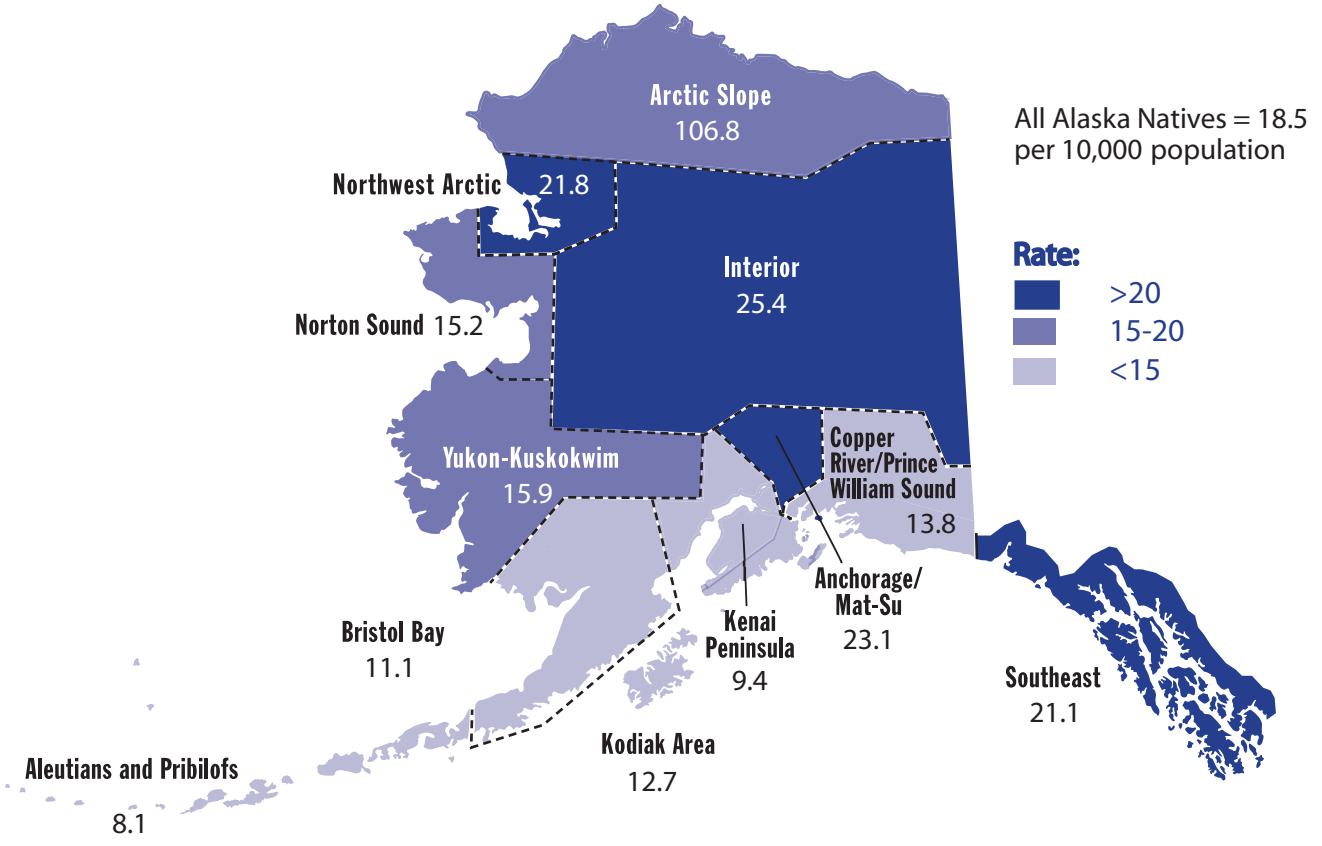
Suicide Attempt Hospitalization Rate by Year and Gender
Alaska Natives, 1991-2003



Note: Suicide attempts were not systematically collected by the Alaska Trauma Registry until 1994/1995.

ASSAULT INJURY HOSPITALIZATIONS

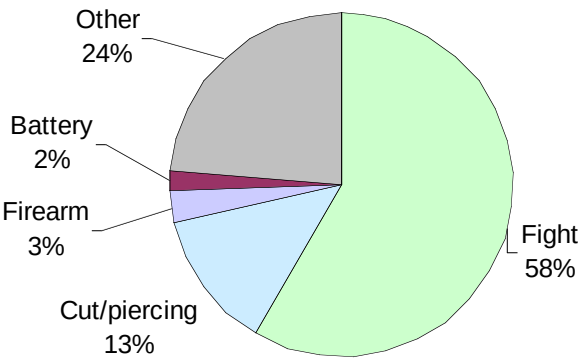
Assault Injury Hospitalization Rate by Region
Alaska Natives, Both Genders, All Ages, 1991-2003



Summary – Assault Injury Hospitalizations

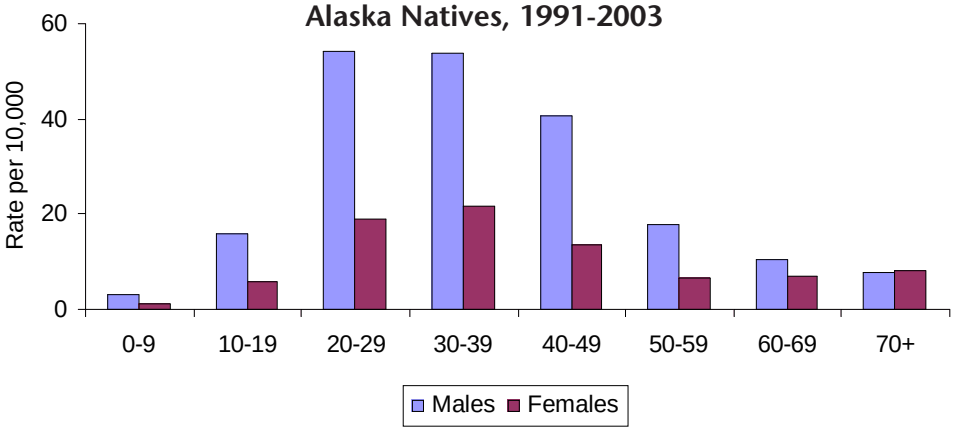
- Assault injuries were the third leading cause of injury hospitalization among all Alaska Natives, resulting in 2,474 injury hospitalizations.
- Assault injuries were the leading cause of injury hospitalization among Alaska Natives aged 30-39.
- 60 percent of all assault-related injury hospitalization occurred to Alaska Natives between the ages of 20 and 39.
- Alaska Native men were 2.6 times more likely than Alaska Native women to be hospitalized for an assault injury.
- Almost 60 percent of all assault injuries were sustained during a fight.
- Nearly 70 percent of all assault injuries were alcohol-related.

Assault Injuries by Method
Alaska Natives, Both Genders, All Ages, 1991-2003

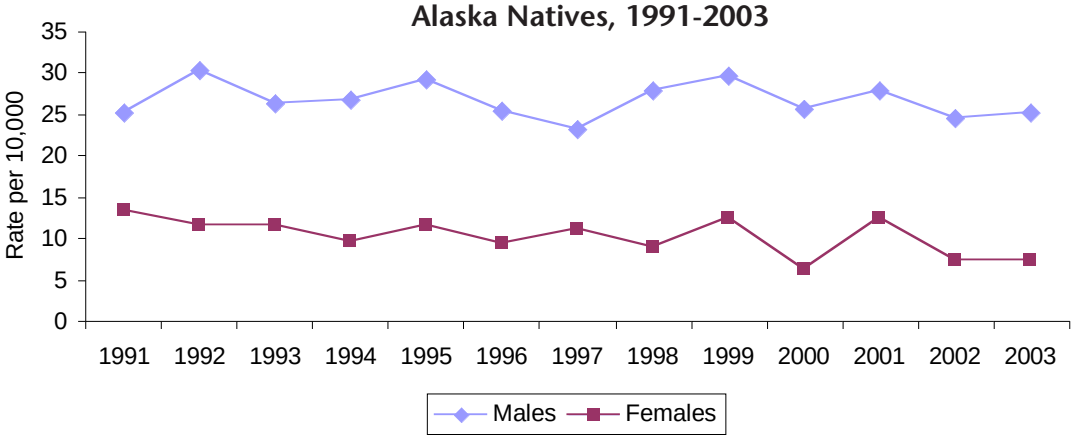


(n=2,474)

Assault Injury Hospitalization Rate by Age Group and Gender
Alaska Natives, 1991-2003

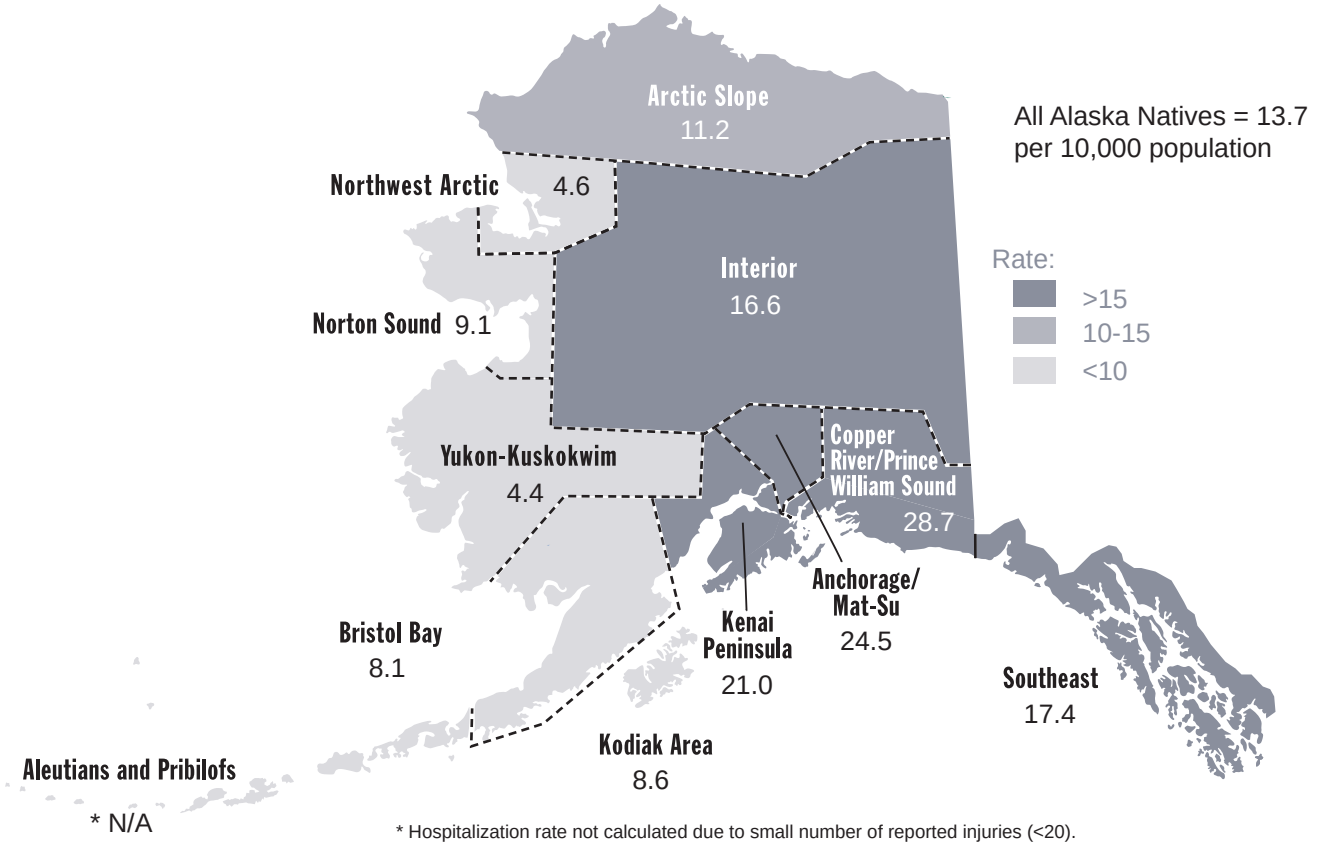


Assault Injury Hospitalization Rate by Year and Gender
Alaska Natives, 1991-2003



MOTOR VEHICLE-RELATED INJURY HOSPITALIZATIONS

Motor-Vehicle Related Injury Hospitalization Rate by Region
Alaska Natives, Both Genders, All Ages, 1991-2003

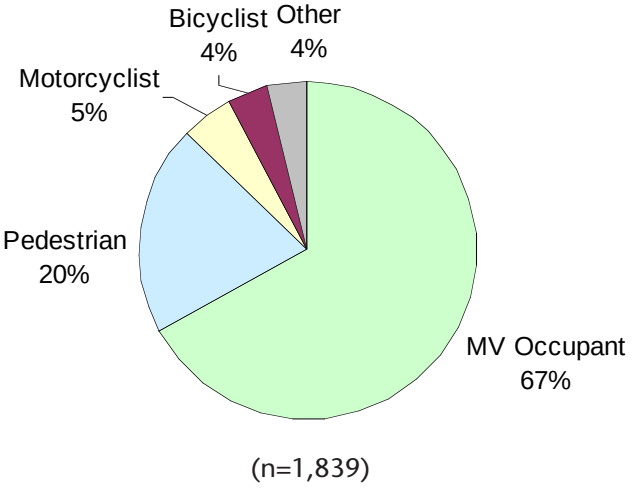


* Hospitalization rate not calculated due to small number of reported injuries (<20).

Summary – Motor Vehicle-Related Injury Hospitalizations

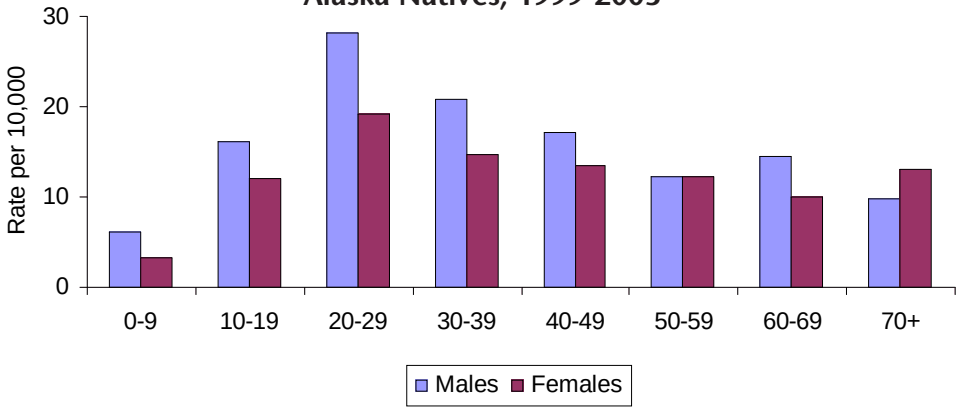
- Motor vehicle injuries were the fourth leading cause of injury hospitalization among Alaska Natives, resulting in 1,839 injury hospitalization.
- Alaska Native men were injured more often than women in motor vehicle crashes. Overall, the motor vehicle-related injury hospitalization rate was 1.4 times greater for men than women.
- The greatest number of motor vehicle-related injury hospitalizations occurred among Alaska Natives aged 20-29.
- The motor vehicle-related injury hospitalization rate declined by 11.4 percent between 1991 and 2003.
- 45 percent of all motor vehicle-related injury hospitalizations were recorded as alcohol-related.

Type of Traveler Injured in Motor Vehicle Crash
Alaska Natives, Both Genders, All Ages, 1999-2003

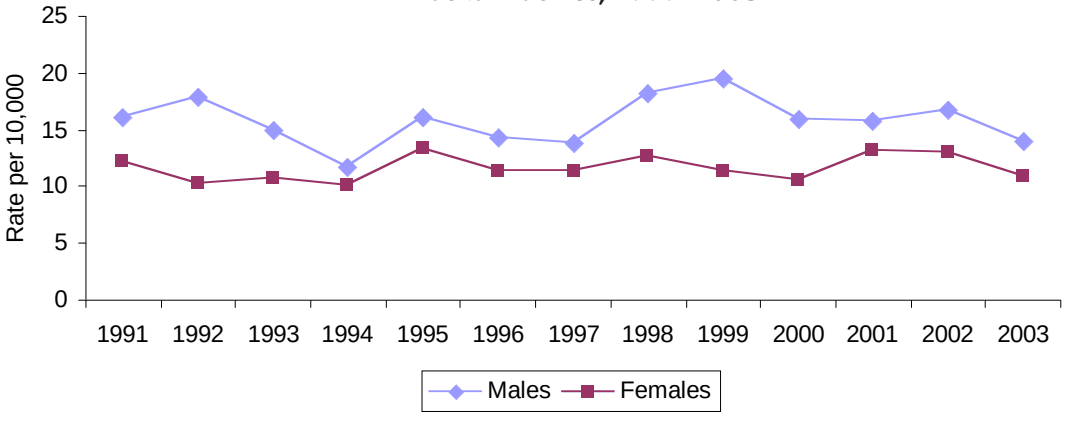


(n=1,839)

Motor-Vehicle Related Injury Hospitalization Rate by Age Group and Gender
Alaska Natives, 1999-2003

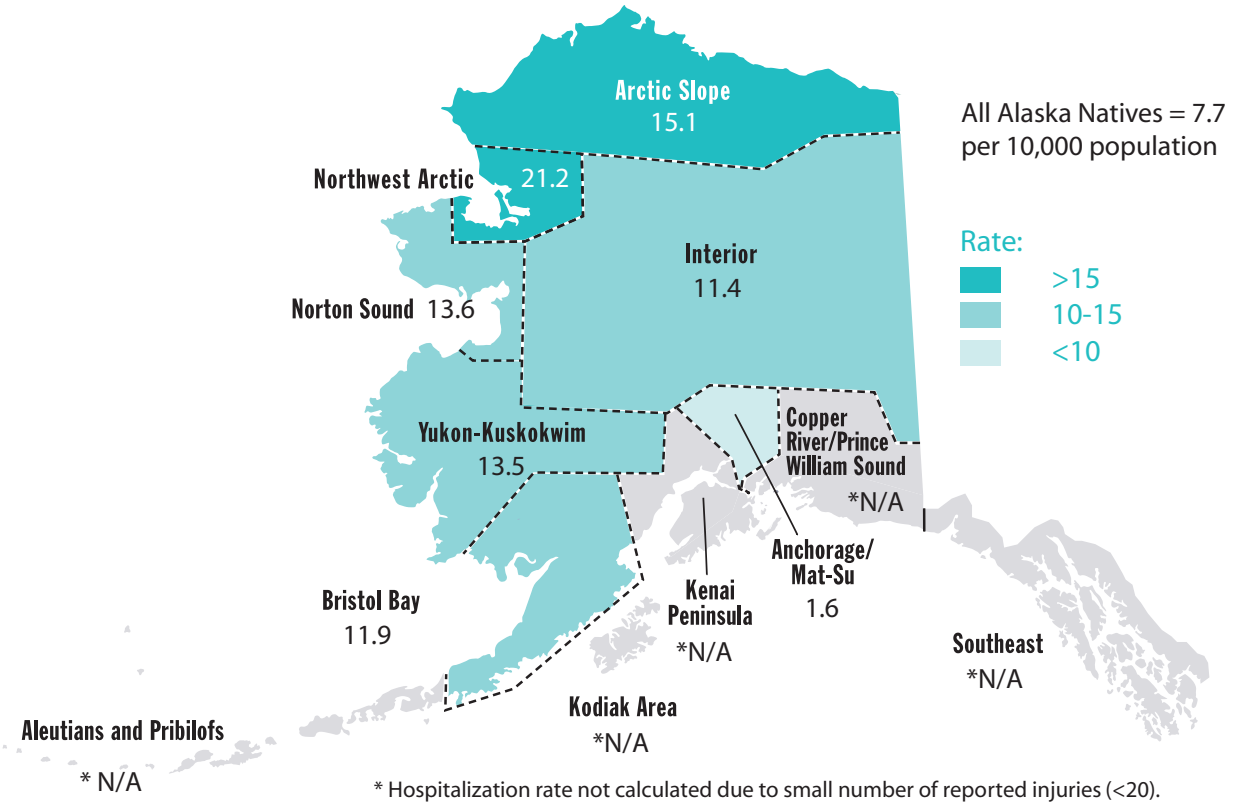


Motor-Vehicle Related Injury Hospitalization Rate by Age Group and Gender
Alaska Natives, 1999-2003



SNOWMACHINE-RELATED INJURY HOSPITALIZATIONS

Snowmachine-Related Injury Hospitalization Rate by Region
Alaska Natives, Both Genders, All Ages, 1991-2003



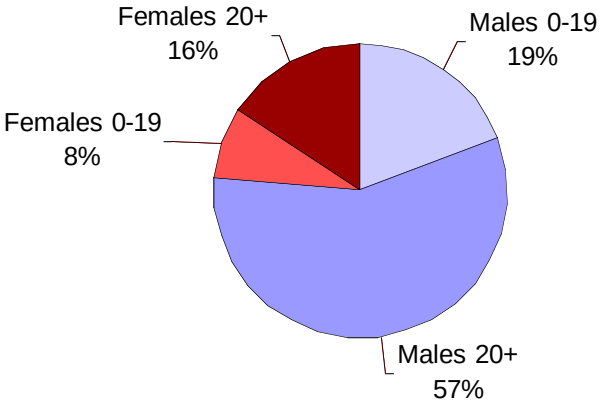
* Hospitalization rate not calculated due to small number of reported injuries (<20).

Summary – Snowmachine-Related Injury Hospitalizations

- Snowmachine crashes resulted in 1,029 injury hospitalizations during 1991 to 2003. Snowmachine crashes were the fifth leading cause of injury hospitalization among Alaska Natives.
- Alaska Native men were injured more often than women in snowmachine crashes. Overall, the snowmachine-related injury hospitalization rate was 3.25 times greater for men than women.
- One-third of all snowmachine-related injury hospitalizations occurred to Alaska Native children (less than 20 years of age). Boys are injured slightly more often than girls.
- 73 percent of all snowmachine-related injury hospitalizations occurred to Alaska Natives between the ages of 10 and 39.
- 40 percent of all snowmachine-related injury hospitalizations were recorded as alcohol-related.
- Snowmachine helmet usage rates were 57 percent in Alaska in 2006. Helmet usage was higher in urban areas (81%) compared to rural areas (47%)[1].

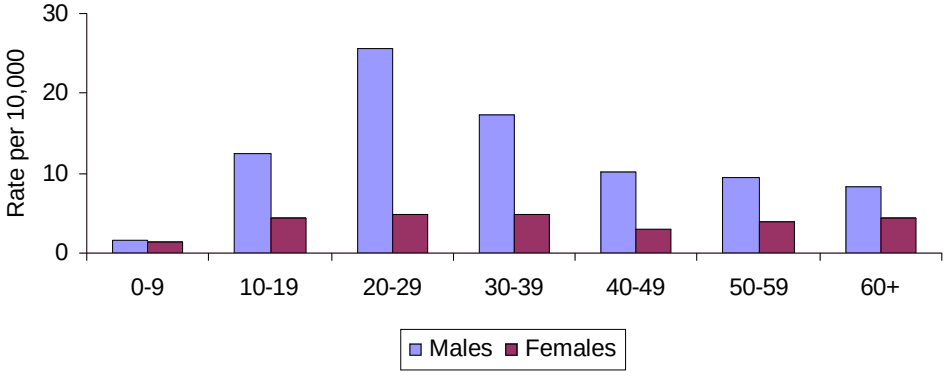
1. Section of Injury Prevention and Emergency Medical Services, Division of Public Health, Alaska Department of Health and Social Services. (2006). Helmet Observation Study. Juneau, AK.

Snowmachine-Related Injury Hospitalizations
Children vs. Adults, Alaska Natives, Both Genders, 1991-2003

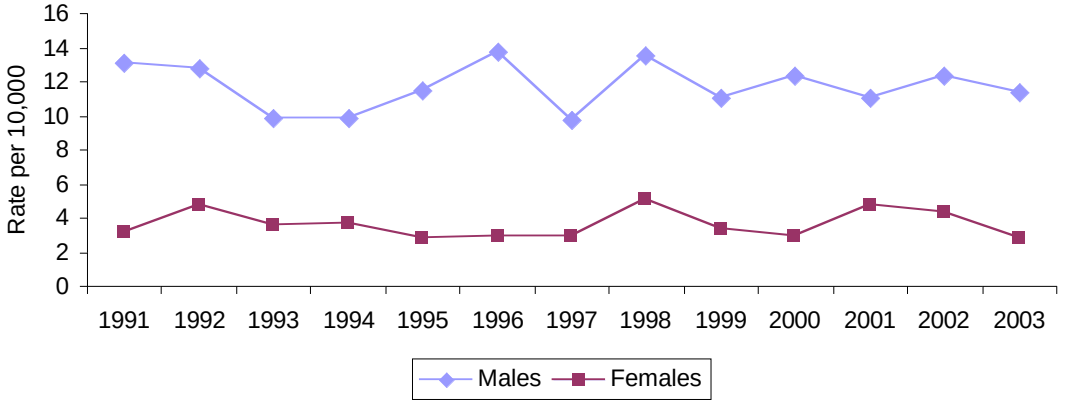


(n=1,029)

Snowmachine-Related Injury Hospitalization Rate
by Age Group and Gender, Alaska Natives, 1991-2003

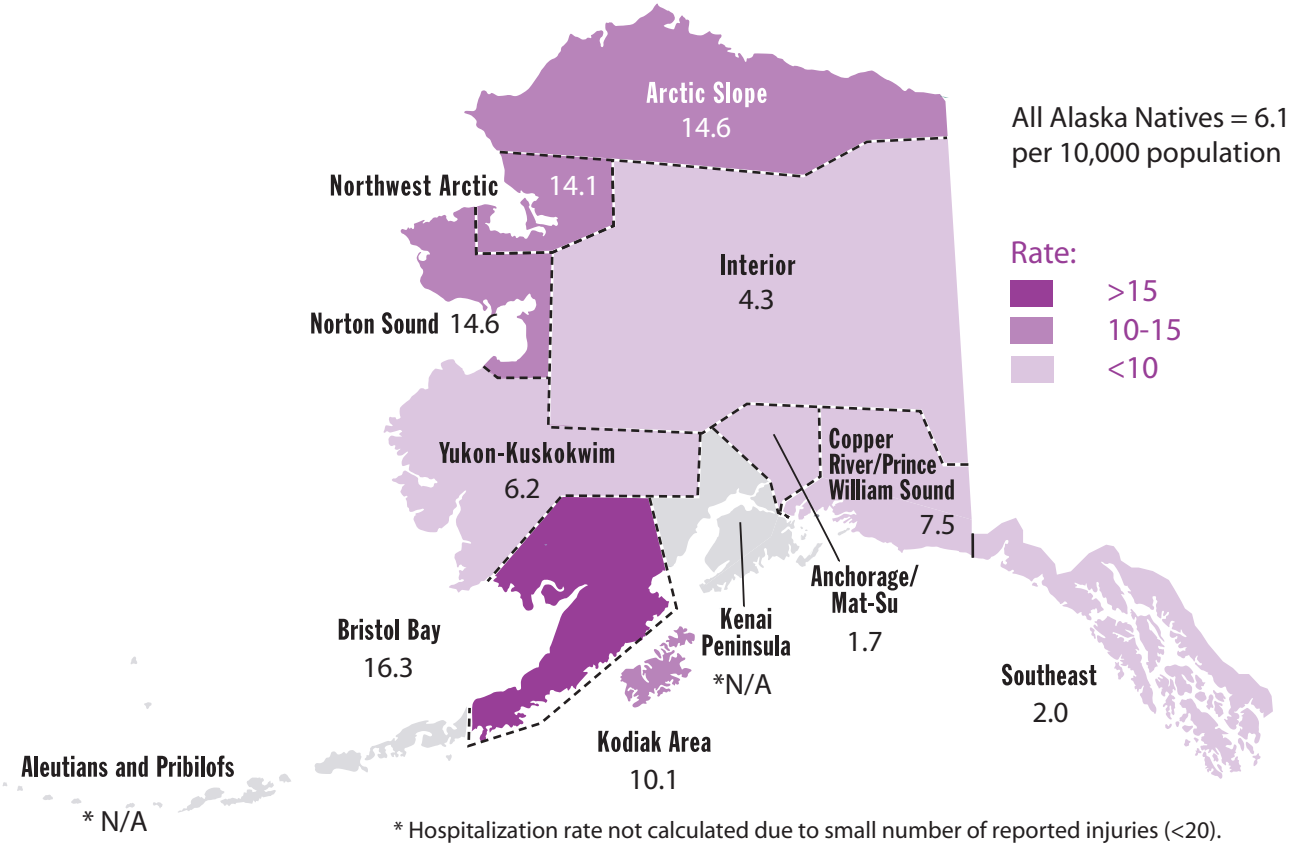


Snowmachine-Related Injury Hospitalization Rate
by Year and Gender, Alaska Natives, 1991-2003



ATV-RELATED INJURY HOSPITALIZATIONS

ATV-Related Injury Hospitalization Rate by Region
Alaska Natives, Both Genders, All Ages, 1991-2003

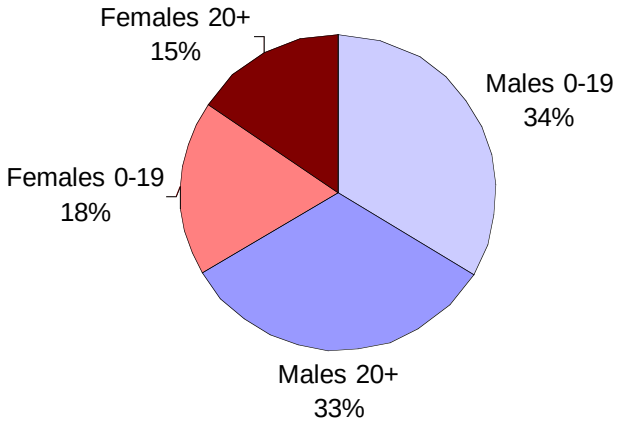


* Hospitalization rate not calculated due to small number of reported injuries (<20).

Summary – ATV-Related Injury Hospitalizations

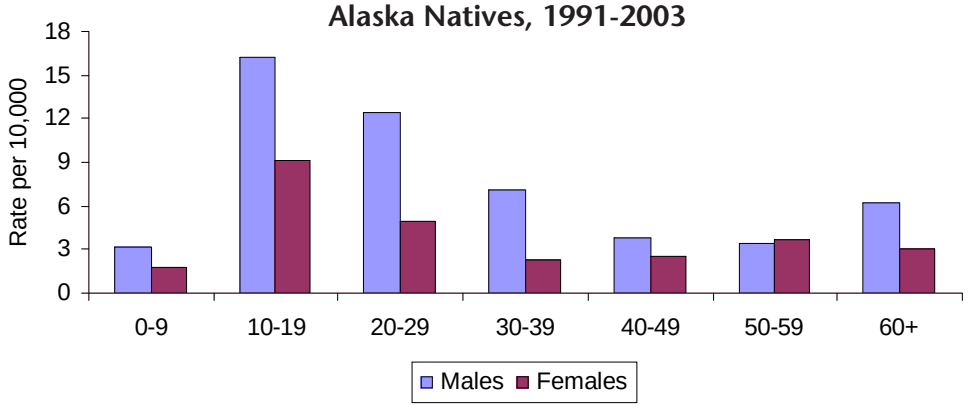
- ATV crashes resulted in 816 injury hospitalizations during 1991 to 2003. ATV crashes were the sixth leading cause of injury hospitalization among Alaska Natives.
- More than one-half of all ATV-related injury hospitalizations occurred to Alaska Native children (less than 20 years of age). Boys are injured almost twice as often as girls.
- Two-thirds of all ATV injuries occurred to Alaska Native males. Of the 816 injuries, 544 (67%) were to men, compared to 272 (33%) among women.
- 62 percent of all ATV-related injury hospitalizations occurred to Alaska Natives between the ages of 10 and 29.
- 30 percent of all ATV-related injury hospitalizations were recorded as alcohol-related.

ATV-Related Injury Hospitalizations
Children vs. Adults, Alaska Natives, Both Genders, 1991-2003

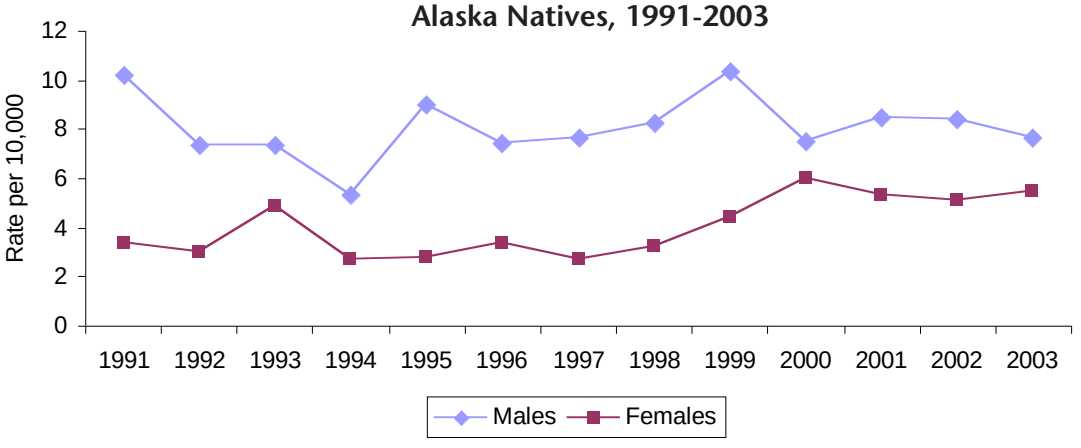


(n=816)

ATV-Related Injury Hospitalization Rate by Age Group and Gender
Alaska Natives, 1991-2003



ATV-Related Injury Hospitalization Rate by Year and Gender
Alaska Natives, 1991-2003



Regional Injury Profiles

ALEUTIANS AND PRIBILOFS

Leading Causes of Injury Hospitalization, 1991-2003

	N	% of Injury Hospitalizations	Rate per 10,000	Rate Ratio[2]: Aleutians and Pribilofs vs. AK Natives
Falls	88	43%	29.8	0.8*
Assault	24	12%	8.1	0.4*
ATV	15	7%	-	-
Motor Vehicle	13	6%	-	-
Suicide Attempt	6	3%	-	-
Other	61	29%		
Total Injury	207	100%	70.1	0.5*
Total Unintentional	176	85%	59.6	0.6*

Leading Causes of Injury Death, 1999-2005

	N	% Total	Rate per 100,000	Rate Ratio[2]: Aleutians and Pribilofs vs. AK Natives
Unintentional Poisoning	7	33%	-	-
Suicide	5	24%	-	-
Other	8	43%		
Total Injury	20	100%	146.4	0.9
Total Unintentional	14	70%	101.7[1]	1.0

(-) Rate not calculated due to small number of deaths (<10) or hospitalizations (<20)
* Statistically significant difference at the p<.05 probability level

[1] Rate is based on 10-19 deaths and should be interpreted with caution.
[2] **Rate Ratio (RR):** A RR less than 1 means that the rate in the population of interest is lower than that of the comparison population. Conversely, a RR greater than 1 means that the rate in the population of interest is higher than in the comparison population.

Summary

- Unintentional injury hospitalization rates for Alaska Natives living in the Aleutians and Pribilofs were 40% lower than for Alaska Natives statewide (p<.05).
- Unintentional injury death rates for the Aleutians and Pribilofs were nearly the same as for Alaska Natives statewide.
- Falls were the leading cause of injury hospitalization and unintentional poisoning was the leading cause of injury death.

ARCTIC SLOPE

Leading Causes of Injury Hospitalization, 1991-2003

	N	% Total	Rate per 10,000	Rate Ratio[2]: Arctic Slope vs. AK Natives
Falls	245	24%	39.9	1.0
Suicide Attempt	149	15%	24.2	1.2
Assault	121	12%	19.7	1.1
Snowmachine	93	9%	15.1	2.0*
ATV	90	9%	14.6	2.4*
Motor Vehicle	69	7%	11.2	0.8
Other	248	24%		
Total Injury	1,015	100%	165.1	1.2*
Total Unintentional	734	72%	119.4	1.2*

Leading Causes of Injury Death, 1999-2005

	N	% Total	Rate per 100,000	Rate Ratio: Arctic Slope vs. AK Natives
Suicide	19	39%	61.3[1]	1.6
Off Road Vehicle	9	18%	-	-
Other	21	43%		
Total Injury	49	100%	188.1	1.2
Total Unintentional	28	57%	106.8	1.1

(-) Rate not calculated due to small number of deaths (<10) or hospitalizations (<20)
* Statistically significant difference at the p<.05 probability level

[1] Rate is based on 10-19 deaths and should be interpreted with caution.
[2] **Rate Ratio (RR):** A RR less than 1 means that the rate in the population of interest is lower than that of the comparison population. Conversely, a RR greater than 1 means that the rate in the population of interest is higher than in the comparison population.

Summary

- The largest disparity between the Arctic Slope's injury hospitalization rate and the rate among Alaska Natives statewide was for ATV related injuries. The ATV injury hospitalization rate for Arctic Slope was 2.4 times greater than the rate for Alaska Natives statewide (p<.05).
- The Arctic Slope's snowmachine injury hospitalization rates were two times greater than that for Alaska Natives statewide (p<.05).
- The Arctic Slope's suicide rate was 1.6 times greater than the rate for Alaska Natives statewide.

ANCHORAGE/MAT-SU

Leading Causes of Injury Hospitalization, 1991-2003

	N	% Total	Rate per 10,000	Rate Ratio[2]: Anchorage/Mat-Su vs. AK Natives
Falls	1,152	28%	38.4	1.0
Motor Vehicle	737	18%	24.5	1.8*
Assault	695	17%	23.1	1.3*
Suicide Attempt	518	13%	17.3	0.9*
ATV	50	1%	1.7	0.3*
Snowmachine	49	1%	1.6	0.2*
Other	901	22%		
Total Injury	4,102	100%	136.6	1.0
Total Unintentional	2,844	69%	94.7	1.0

Leading Causes of Injury Death, 1999-2005

	N	% Total	Rate per 100,000	Rate Ratio[2]: Anchorage/Mat-Su vs. AK Natives
Suicide	56	23%	26.9	0.7*
Unintentional Poisoning	55	22%	28.8	1.6*
Motor Vehicle	49	20%	26.2	1.4
Homicide	27	11%	14.5	1.1
Suffocation	15	6%	8.7[1]	1.6
Excessive Natural Cold	7	3%	-	-
Drowning	6	2%	-	-
Other	33	13%		
Total Injury	248	100%	141.1	0.9
Total Unintentional	139	56%	92.9	0.9

(-) Rate not calculated due to small number of deaths (<10) or hospitalizations (<20)
* Statistically significant difference at the p<.05 probability level

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Summary

- Motor vehicle and assault related injuries resulted in higher hospitalization rates for Alaska Natives in the Anchorage/Mat-Su as compared to Alaska Natives statewide (p<.05).
- Suicide was the leading cause of injury death in the Anchorage/Mat-Su. However, the suicide rate was 30% lower than for Alaska Natives statewide (p<.05).
- The rate of unintentional poisoning death was 1.6 times greater for Alaska Natives residing in the Anchorage/Mat-Su as compared to all Alaska Natives (p<.05).

BRISTOL BAY

Leading Causes of Injury Hospitalization, 1991-2003

	N	% Total	Rate per 10,000	Rate Ratio[2]: Bristol Bay vs. AK Natives
Falls	280	29%	39.8	1.0
ATV	115	12%	16.3	2.7*
Suicide Attempt	90	9%	12.8	0.6*
Snowmachine	84	9%	11.9	1.6*
Assault	78	8%	11.1	0.6*
Motor Vehicle	57	6%	8.1	0.6*
Other	266	27%		
Total Injury	970	100%	137.8	1.0
Total Unintentional	794	82%	112.8	1.1

Leading Causes of Injury Death, 1999-2005

	N	% Total	Rate per 100,000	Rate Ratio[2]: Bristol Bay vs. AK Natives
Drowning	16	20%	47.8[1]	3.7*
Air Transport	13	17%	46.1[1]	11.8*
Off Road Vehicle	11	14%	31.2[1]	3.1
Suicide	9	12%	-	-
Other	29	37%		
Total Injury	78	100%	245.3	1.5
Total Unintentional	59	76%	192.1	1.9

(-) Rate not calculated due to small number of deaths (<10) or hospitalizations (<20)
* Statistically significant difference at the p<.05 probability level

[1] Rate is based on 10-19 deaths and should be interpreted with caution.
[2] **Rate Ratio (RR):** A RR less than 1 means that the rate in the population of interest is lower than that of the comparison population. Conversely, a RR greater than 1 means that the rate in the population of interest is higher than in the comparison population.

Summary

- The Bristol Bay region's ATV-related injury hospitalization rate was 2.7 times greater than the rate for Alaska Natives statewide (p<.05).
- The hospitalization rate for suicide attempts, assaults, and motor vehicle crashes were all 40% lower than for Alaska Natives statewide (p<.05).
- The drowning rate for the Bristol Bay region was 3.7 times greater than the rate for Alaska Natives statewide (p<.05).
- The air transport injury death rate for the Bristol Bay region was almost 12 times greater than the rate for Alaska Natives statewide (p<.05).

COPPER RIVER / PRINCE WILLIAM SOUND

Leading Causes of Injury Hospitalization, 1991-2003

	N	% Total	Rate per 10,000	Rate Ratio[2]: Copper River/Prince William Sound vs. AK Natives
Falls	77	30%	41.0	1.1
Motor Vehicle	54	21%	28.7	2.1*
Assault	26	10%	13.8	0.8
Suicide Attempt	21	8%	11.2	0.6*
ATV	14	5%	-	-
Other	69	26%		
Total Injury	261	100%	138.9	1.0
Total Unintentional	214	82%	113.9	1.1

Leading Causes of Injury Death, 1999-2005

	N	% Total	Rate per 100,000	Rate Ratio[2]: Copper River/Prince William Sound vs. AK Natives
Motor Vehicle	5	28%	-	-
Other	13	72%		
Total Injury	18	100%	220[1]	1.4
Total Unintentional	15	83%	174.8[1]	1.7

(-) Rate not calculated due to small number of deaths (<10) or hospitalizations (<20)
* Statistically significant difference at the p<.05 probability level

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[2] **Rate Ratio (RR):** A RR less than 1 means that the rate in the population of interest is lower than that of the comparison population. Conversely, a RR greater than 1 means that the rate in the population of interest is higher than in the comparison population.

Summary

- Motor vehicle injury hospitalization rates in the Copper River/Prince William Sound region were more than double the rate for all Alaska Natives (p<.05).
- There were 18 injury deaths in the Copper River/Prince William Sound region during 1999-2005; 83% of these deaths were due to unintentional injury.

INTERIOR

Leading Causes of Injury Hospitalization, 1991-2003

	N	% Total	Rate per 10,000	Rate Ratio[2]: Interior vs. AK Natives
Falls	653	26%	44.2	1.1
Suicide Attempt	464	19%	31.4	1.5*
Assault	376	15%	25.4	1.4*
Motor Vehicle	245	10%	16.6	1.2
Snowmachine	169	7%	11.4	1.5*
ATV	63	3%	4.3	0.7*
Other	507	20%		
Total Injury	2,477	100%	167.6	1.2*
Total Unintentional	1,613	65%	109.1	1.1

Leading Causes of Injury Death, 1999-2005

	N	% Total	Rate per 100,000	Rate Ratio[2]: Interior vs. AK Natives
Suicide	40	25%	42.9	1.1
Drowning	20	12%	23.1	1.8
Motor Vehicle	18	11%	23.2[1]	1.3
Unintentional Poisoning	17	11%	20.8[1]	1.2
Homicide	17	11%	19.4[1]	1.4
Fire and Burn	9	6%	-	-
Excessive Natural Cold	8	5%	-	-
Off Road Vehicle	8	5%	-	-
Suffocation	5	3%	-	-
Other	18	11%		
Total Injury	160	100%	189.4	1.2
Total Unintentional	91	57%	119.7	1.2

(-) Rate not calculated due to small number of deaths (<10) or hospitalizations (<20)
* Statistically significant difference at the p<.05 probability level

[1] Rate is based on 10-19 deaths and should be interpreted with caution. [2] **Rate Ratio (RR):** A RR less than 1 means that the rate in the population of interest is lower than that of the comparison population. Conversely, a RR greater than 1 means that the rate in the population of interest is higher than in the comparison population.

Summary

- There were 2,477 injuries resulting in hospitalization in the Interior region. Falls were responsible for one out of every four injury-related hospitalizations.
- The ATV-related injury hospitalization rate was 30% lower than for all Alaska Natives (p<.05).
- There were 20 drowning deaths in the Interior region during 1999-2005. The drowning rate was 1.8 times higher than for Alaska Natives statewide.

KENAI PENINSULA

Leading Causes of Injury Hospitalization, 1991-2003

	N	% Total	Rate per 10,000	Rate Ratio[2]: Kenai Peninsula vs. AK Natives
Falls	149	33%	36.7	1.0
Motor Vehicle	85	19%	21.0	1.5*
Suicide Attempt	54	12%	13.3	0.7*
Assault	38	9%	9.4	0.5*
ATV	13	3%	-	-
Snowmachine	6	1%	-	-
Other	103	23%		
Total Injury	448	100%	110.5	0.8*
Total Unintentional	352	79%	86.8	0.9

Leading Causes of Injury Death, 1999-2005

	N	% Total	Rate per 100,000	Rate Ratio[2]: Kenai Peninsula vs. AK Natives
Motor Vehicle	14	42%	36.9[1]	2.0*
Suicide	5	15%	-	-
Other	14	42%		
Total Injury	33	100%	105	0.7
Total Unintentional	21	64%	75.6	0.7

(-) Rate not calculated due to small number of deaths (<10) or hospitalizations (<20)
* Statistically significant difference at the p<.05 probability level

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[2] **Rate Ratio (RR):** A RR less than 1 means that the rate in the population of interest is lower than that of the comparison population. Conversely, a RR greater than 1 means that the rate in the population of interest is higher than in the comparison population.

Summary

- Motor vehicle-related injury hospitalization rates were 1.5 times greater in the Kenai Peninsula region as compared to Alaska Natives statewide (p<.05).
- Suicide attempt and assault hospitalization rates were 30% and 50% lower than for Alaska Natives statewide (p<.05).
- Fourteen (14) Alaska Natives died in a motor vehicle crash in the Kenai Peninsula region during 1999-2005. The Kenai Peninsula motor vehicle mortality rate was two times greater than the rate for Alaska Natives statewide (p<.05).

KODIAK AREA

Leading Causes of Injury Hospitalization, 1991-2003

	N	% Total	Rate per 10,000	Rate Ratio[2]: Kodiak Area vs. AK Natives
Falls	95	32%	35.5	0.9
Suicide Attempt	46	15%	17.2	0.8
Assault	34	11%	12.7	0.7
ATV	27	9%	10.1	1.7*
Motor Vehicle	23	8%	8.6	0.6
Other	74	25%		
Total Injury	299	100%	111.7	0.8*
Total Unintentional	217	73%	81.0	0.8*

Leading Causes of Injury Death, 1999-2005

	N	% Total	Rate per 100,000	Rate Ratio[2]: Kodiak Area vs. AK Natives
Total Injury	10		75[1]	0.5*
Total Unintentional	6	60%	-	-

(-) Rate not calculated due to small number of deaths (<10) or hospitalizations (<20)
* Statistically significant difference at the p<.05 probability level

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Summary

- The injury hospitalization rate for the Kodiak Area is lower than for Alaska Natives statewide for all causes except for ATV-related injuries. Alaska Natives in the Kodiak Area were 1.7 times more likely to be hospitalized due to an ATV-related injury than Alaska Natives statewide (p<.05).
- The injury death rate for the Kodiak Area is 50% lower than the rate for Alaska Natives statewide (p<.05). There were 10 injury deaths during 1999-2005.

NORTHWEST ARCTIC

Leading Causes of Injury Hospitalization, 1991-2003

	N	% Total	Rate per 10,000	Rate Ratio[2]: NW Arctic vs. AK Natives
Falls	267	20%	34.8	0.9
Suicide Attempt	267	20%	34.8	1.7*
Assault	167	13%	21.8	1.2*
Snowmachine	163	12%	21.2	2.8*
ATV	108	8%	14.1	2.3*
Motor Vehicle	35	3%	4.6	0.3*
Other	322	24%		
Total Injury	1329	100%		
Total Unintentional	885	67%	115.4	1.2*

Leading Causes of Injury Death, 1999-2005

	N	% Total	Rate per 100,000	Rate Ratio[2]: NW Arctic vs. AK Natives
Suicide	31	38%	81	2.1*
Drowning	15	18%	37.1[1]	2.9*
Off Road Vehicle	10	12%	33.3[1]	3.3*
Other	25	31%		
Total Injury	81	100%	243.9	1.5*
Total Unintentional	45	56%	132.4	1.3

* Statistically significant difference at the p<.05 probability level

[1] Rate is based on 10-19 deaths and should be interpreted with caution.
[2] **Rate Ratio (RR):** A RR less than 1 means that the rate in the population of interest is lower than that of the comparison population. Conversely, a RR greater than 1 means that the rate in the population of interest is higher than in the comparison population.

Summary

- Falls were the leading cause of injury hospitalization in the Northwest Arctic region.
- Snowmachine-related injury hospitalization rates were 2.8 times greater than the rate for Alaska Natives statewide (p<.05).
- Offroad vehicle-related injury hospitalization rates were 3.3 times greater than the rate for Alaska Natives statewide (p<.05).
- The drowning death rate in the Northwest Arctic region was nearly three times greater than the rate for Alaska Natives statewide. The suicide rate was double that for Alaska Natives statewide (p<.05).

NORTON SOUND

Leading Causes of Injury Hospitalization, 1991-2003

	N	% Total	Rate per 10,000	Rate Ratio[2]: Norton Sound vs. AK Natives
Falls	328	24%	38.4	1.0
Suicide Attempt	292	21%	34.2	1.7*
Assault	130	9%	15.2	0.8
ATV	125	9%	14.6	2.4*
Snowmachine	116	8%	13.6	1.8*
Motor Vehicle	78	6%	9.1	0.7*
Other	316	23%		
Total Injury	1,385	100%	162.2	1.2*
Total Unintentional	945	68%	110.7	1.1

Leading Causes of Injury Death, 1999-2005

	N	% Total	Rate per 100,000	Rate Ratio[2]: Norton Sound vs. AK Natives
Suicide	49	41%	92.9	2.4*
Unintentional Poisoning	11	9%	33.0[1]	1.9
Motor Vehicle	10	8%	26.0[1]	1.4
Drowning	9	8%	-	-
Off Road Vehicle	9	8%	-	-
Excessive Natural Cold	8	7%	-	-
Homicide	7	6%	-	-
Suffocation	6	5%	-	-
Other	10	12%		
Total Injury	119		263.1	1.7*
Total Unintentional	63	53%	152.1	1.5*

(-) Rate not calculated due to small number of deaths (<10) or hospitalizations (<20)
* Statistically significant difference at the p<.05 probability level

[1] Rate is based on 10-19 deaths and should be interpreted with caution.
[2] **Rate Ratio (RR):** A RR less than 1 means that the rate in the population of interest is lower than that of the comparison population. Conversely, a RR greater than 1 means that the rate in the population of interest is higher than in the comparison population.

Summary

- Injury hospitalization rates resulting from suicide attempts, ATV and snowmachine crashes were greater among Alaska Natives in the Norton Sound region as compared to Alaska Natives statewide (p<.05).
- Suicide was the leading cause of injury death in the Norton Sound region, resulting in 49 deaths between 1999-2005. This is an average of 7 suicides per year.
- The unintentional poisoning death rate was nearly twice the rate for Alaska Natives statewide.

SOUTHEAST

Leading Causes of Injury Hospitalization, 1991-2003

	N	% Total	Rate per 10,000	Rate Ratio[2]: Southeast vs. AK Natives
Falls	1,029	34%	56.9	1.5*
Suicide Attempt	405	14%	22.4	1.1
Assault	381	13%	21.1	1.1
Motor Vehicle	314	10%	17.4	1.3*
ATV	36	1%	2.0	0.3*
Other	834	28%		
Total Injury	2,999	100%	165.8	1.2*
Total Unintentional	2,190	73%	121.0	1.2*

Leading Causes of Injury Death, 1999-2005

	N	% Total	Rate per 100,000	Rate Ratio[2]: Southeast vs. AK Natives
Drowning	17	20%	20.1[1]	1.6
Motor Vehicle	15	18%	16.6[1]	0.9
Homicide	12	14%	14.1[1]	1.0
Suicide	11	13%	11.1[1]	0.3*
Unintentional Poisoning	8	10%	-	-
Other	21	25%		
Total Injury	84	100%	100.3	0.6*
Total Unintentional	55	65%	69.4	0.7*

(-) Rate not calculated due to small number of deaths (<10) or hospitalizations (<20)
* Statistically significant difference at the p<.05 probability level

[1] Rate is based on 10-19 deaths and should be interpreted with caution.
[2] **Rate Ratio (RR):** A RR less than 1 means that the rate in the population of interest is lower than that of the comparison population. Conversely, a RR greater than 1 means that the rate in the population of interest is higher than in the comparison population.

Summary

- Falls were the leading cause of injury hospitalization for the Southeast region. The fall-related hospitalization rate was 1.5 times greater in this region as compared to all Alaska Natives (p<.05).
- Drowning was the leading cause of injury death. The drowning rate was 1.6 times greater in this region as compared to Alaska Natives statewide.
- The suicide rate in the Southeast region was 70% lower than for Alaska Natives statewide (p<.05).

YUKON-KUSKOKWIM

Leading Causes of Injury Hospitalization, 1991-2003

	N	% Total	Rate per 10,000	Rate Ratio[2]: Yukon-Kuskokwim vs. AK Natives
Falls	806	25%	32.2	0.8*
Suicide Attempt	412	13%	16.4	0.8*
Assault	399	12%	15.9	0.9
Snowmachine	338	11%	13.5	1.8*
ATV	156	5%	6.2	1.0
Motor Vehicle	109	3%	4.4	0.3*
Other	985	31%		
Total Injury	3,205	100%	127.9	0.9
Total Unintentional	2,364	74%	94.4	1.0

Leading Causes of Injury Death, 1999-2005

	N	% Total	Rate per 100,000	Rate Ratio[2]: Yukon-Kuskokwim vs. AK Natives
Suicide	75	32%	55.1	1.5*
Drowning	44	19%	32.7	2.5*
Homicide	22	9%	17	1.2
Off Road Vehicle	22	9%	18.7	1.8*
Excessive Natural Cold	17	7%	15.5[1]	1.8*
Unintentional Poisoning	10	4%	8.6[1]	0.5
Fire and Burn	6	3%	-	-
Air Transport	5	2%	-	-
Motor Vehicle	5	2%	-	-
Other	31	13%		
Total Injury	237	100%	197.9	1.2*
Total Unintentional	145	61%	122.9	1.2

(-) Rate not calculated due to small number of deaths (<10) or hospitalizations (<20) * Statistically significant difference at the p<.05 probability level

[1] Rate is based on 10-19 deaths and should be interpreted with caution. [2] **Rate Ratio (RR):** A RR less than 1 means that the rate in the population of interest is lower than that of the comparison population. Conversely, a RR greater than 1 means that the rate in the population of interest is higher than in the comparison population.

Summary

- Only snowmachine-related hospitalization rates were higher for Alaska Natives living in the Yukon-Kuskokwim region as compared to all other Alaska Natives. Yukon-Kuskokwim residents were 1.8 times more likely to be hospitalized due to a snowmachine-injury as compared to all Alaska Natives (p<.05).
- Suicide was the leading cause of injury death for the Yukon-Kuskokwim region, resulting in 75 deaths during 1999-2005.
- Drowning was the leading cause of unintentional injury death. The drowning rate for the Yukon-Kuskokwim region was 2.5 times greater than the rate for all Alaska Natives (p<.05).

Injury Prevention Success Stories

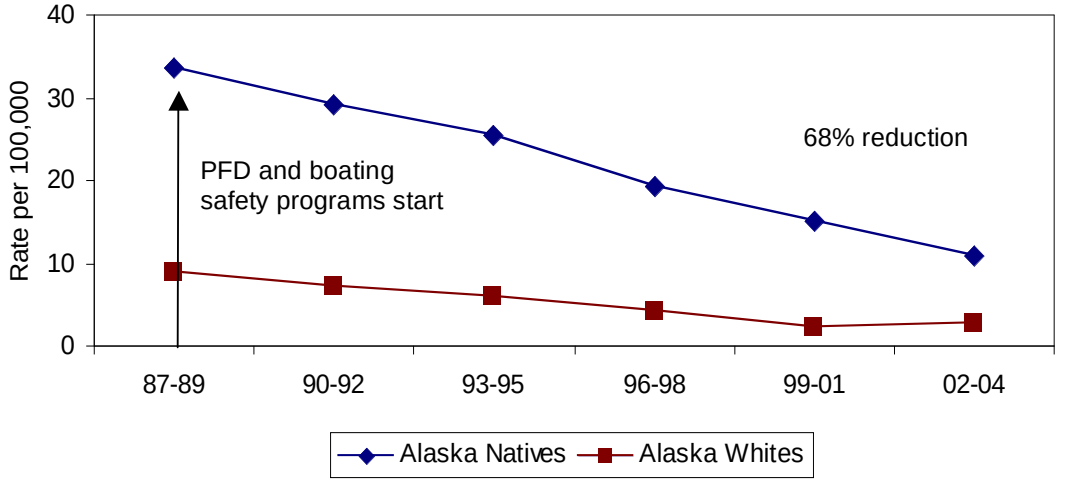
Reducing Drowning Deaths in Rural Alaska:
A Personal Floatation Device and Boating Safety Program

At left, Walter Jack Sr. prepares to go boating by first securely fastening his personal floatation device. Many Alaskans drown each year by not taking these few moments of preparation. Alaska has more than 50% of the entire coastline of the United States and thousands of miles of river. Its vast roadless expanse requires frequent travel on water— whether by boat, snowmachine, or dog sled.

During the 1980s, drowning was the leading cause of injury death in Alaska. Alaska Natives drowned at a rate 18 times greater than the national average, and 3 times greater than the Alaska average — but those rates have been reduced.

An injury prevention program developed by the Yukon-Kuskokwim Health Corporation, in partnership with the Alaska Native Tribal Health Consortium, significantly reduced the incidence of drowning in the YK Delta. The program provides personal flotation devices and boating safety training. Similar programs have been implemented by other tribal health organizations throughout the state. Between 1987 and 2004, the incidence of drowning among Alaska Native people decreased 68%.

Alaska Drowning Rate by Race



Source: CDC, WISQARS, 2007

Declining Fire Fatalities in Alaska Homes:
Two Decades of Progress

Right, due to frequent false alarms, ionizing smoke alarms are disconnected five times more often than photo-electric smoke alarms. This ionizing alarm was hard wired to the home.

A working smoke alarm in your home reduces your risk of dying in a house fire by as much as 75%[1]

Top, a Kwethluk home burns during summer 2002.

Left, Misti May, from Aniak, watches while Cady Agoff tests a smoke alarm in their rural Alaska home. Smoke alarms should be tested monthly. Batteries should be changed twice per year in battery-powered alarms.

Bottom left, the remains of a burnt-out Bethel home.

1. Runyan, C. W., et al. (1992). Risk factors for fatal residential fires. The New England Journal of Medicine, 327, 859-863.

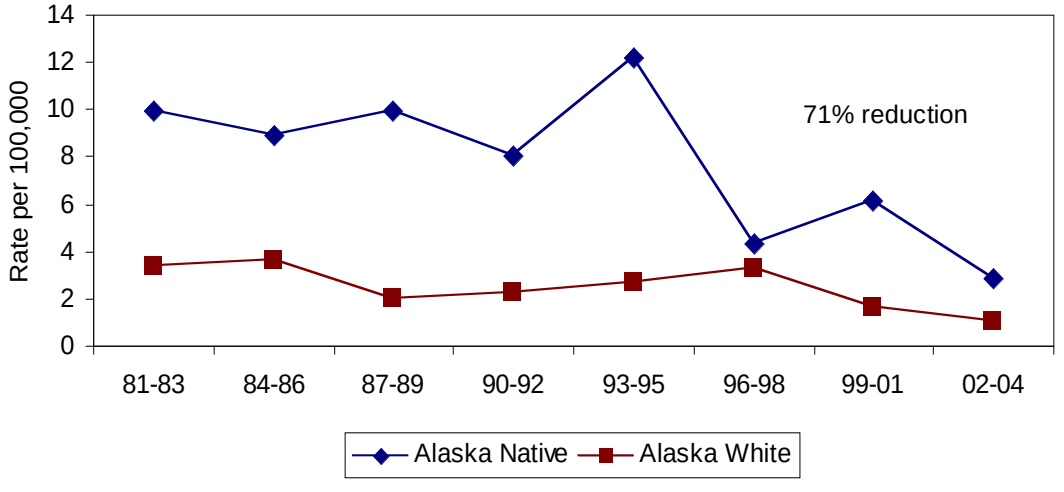
During the past 20 years, the number of fatal Alaska home fires declined significantly. Between 1981 and 2004, the fire mortality rate among Alaska Native people decreased 71%. One reason is the increased availability of fire safety products and education in rural Alaska.

Since 2000, many families in rural villages received smoke alarms and fire safety education through funding by the U.S. Centers for Disease Control and Prevention, and via partnerships between the State of Alaska and Alaska's tribal health organizations.

Before these partnerships, many rural Alaska homes lacked smoke alarms, or residents disconnected them due to false alarms.

Photoelectric smoke alarms cause fewer false alarms and therefore are disconnected less often. To date, 3,800 photoelectric smoke alarms have been installed in 48 rural villages. Twenty lives were saved by these smoke alarms after four homes caught fire.

Alaska Fire Fatality Rate by Race



Source: CDC, WISQARS, 2007

Preventing Dog Bite Injuries to Children in Southwestern Alaska

Upper left, ANTHC Project Manager Devan Currier mushes his team through Anchorage during the ceremonial start of the 2004 Iditarod Trail Sled Dog Race. Currier finished the race in 13 days, 3 hours and 43 minutes, a time that would have won every race prior to 1981.

Above, three girls from Shungnak hold puppies. The girls attended dog bite prevention training conducted at their school.

Middle, dogs lacking proper housing, nutrition and care are more prone to act aggressively to children, and account for the majority of dog bite injuries.

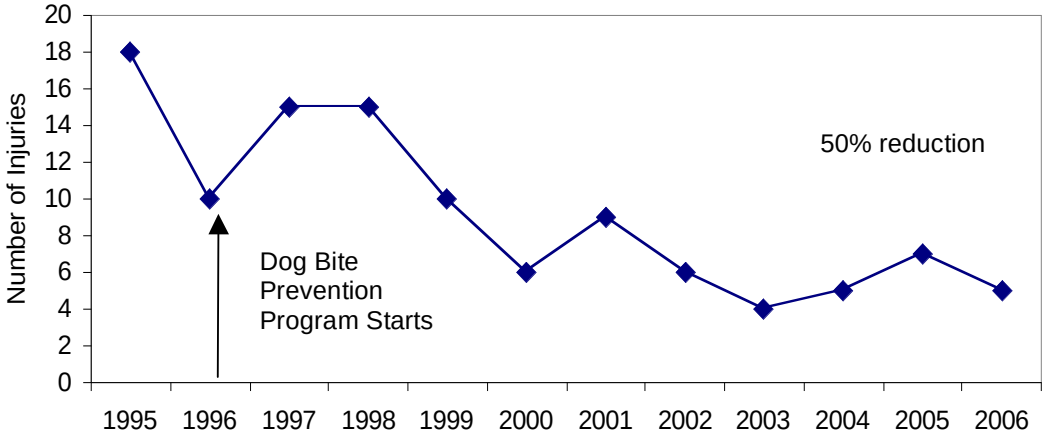
Bottom, dog yard owned by John Hanson of New Stuyahok. This yard was the grand prize winner of Bristol Bay Area Health Corporation's dog yard competition. Hanson moved his dogs out of the village, fenced his dog yard, and constructed an elevated house for each dog.

Dog mushing remains a way of life in much of rural Alaska. Unfortunately dog bite injuries are common in many Alaska villages. In 1996, the Bristol Bay Area Health Corporation began a project to reduce the number of dog bite injuries suffered by Alaska Native children.

In cooperation with the Alaska Native Tribal Health Consortium, this project improved dog care standards, educated children and mushers about dog safety, and increased the safety of dog yards. Project participants included four-time Iditarod Trail Sled Dog Race champion Martin Buser and many southwestern Alaska villages.

Before the project began, the region averaged more than 20 dog bite injuries per year to children — including at least two severe maulings. In 2006, there were only five dog bite injuries to children in the region—a 50% reduction.

Dog Bite Injuries to Children Younger than Eight in Southwestern Alaska



Source: BBAHC Injury Prevention Program, 2007

ALASKA TRIBAL HEALTH SYSTEM INJURY PREVENTION CONTACTS

Alaska Native Tribal Health Consortium
Injury Prevention Program
Office of Community Health
4000 Ambassador Dr., D-CHS
Anchorage, Alaska 99508
Toll free: (800) 478-6661

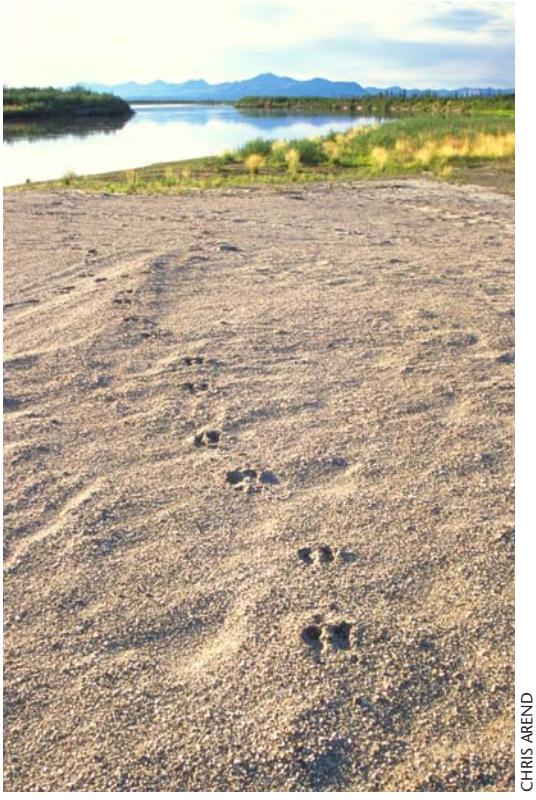
Bristol Bay Area Heath Corporation
Injury Prevention Program
PO Box 130
Dillingham, Alaska 99576
(907) 842-3396
Toll free: (888) 792-2242 in Alaska only

Maniilaq Association
Injury Prevention Program
PO Box 43
Kotzebue, Alaska 99752
(907) 442-7174

Norton Sound Health Corporation
Injury Prevention Program
PO Box 966
Nome, Alaska 99762
(907) 443-4539

Southeast Alaska Regional Health Consortium
Injury Prevention Program
222 Tongass Drive
Sitka, Alaska 99835
(907) 966-8736

Yukon-Kuskokwim Health Corporation
Injury Prevention Program
Office of Environmental Health & Engineering
Injury Control and EMS Dept.
PO Box 528
Bethel, Alaska 99559
(907) 543-6420



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Appendices

APPENDIX A

ICD-10 External Cause of Injury Mortality Matrix						
		Intent				
MECHANISM	**All Injury**	**Unintentional**	**Suicide**	**Homicide**	**Undetermined**	**Other***
All Injury	V01-Y36, Y85-Y87, Y89, *U01-*U03	V01-X59, Y85-Y86	X60-X84, Y87.0, *U03	X85-Y09, Y87.1, *U01-*U02	Y10-Y34, Y87.2, Y89.9	Y35-Y36, Y89 (.0-.1)
1 Cut/Pierce	W25-W29, W45, X78, X99, Y28, Y35.4	W25-W29, W45	X78	X99	Y28	Y35.4
2 Drowning/Submersion	W65-W74, X71, X92, Y21	W65-W74	X71	X92	Y21	-
3 Fall	W00-W19, X80, Y01, Y30	W00-W19	X80	Y01	Y30	-
Fire/Hot Object or Substance						
4 Fire/Flame/Smoke	X00-X09, X76, X97, Y26, Y36.3, *U01.3	X00-X09	X76	X97, *U01.3	Y26	Y36.3
5 Hot Object/Substance, Caustic Substance	X10-X19, X77, X98, Y27	X10-X19	X77	X98	Y27	-
6 Firearm	W32-W34, X72-X74, X93-X95, Y22-Y24, Y35.0, *U01.4	W32-W34	X72-X74	X93-X95, *U01.4	Y22-Y24	Y35.0
7 Machinery	W24, W30-W31	W24, W30-W31	-	-	-	-
All Transport						
Motor Vehicle, Traffic						
	V30-V39 (.4-.9)	V30-V39 (.4-.9)				
	V40-V49 (.4-.9)	V40-V49 (.4-.9)				
	V50-V59 (.4-.9)	V50-V59 (.4-.9)				
	V60-V69 (.4-.9)	V60-V69 (.4-.9)				
	V70-V79 (.4-.9)	V70-V79 (.4-.9)				
8 Occupant Injured	V83-V86 (.0-.3)	V83-V86 (.0-.3)	-	-	-	-
9 Motorcyclist Injured	V20-V28 (.3-.9), V29 (.4-.9)	V20-V28 (.3-.9), V29 (.4-.9)	-	-	-	-
10 Pedal Cyclist Injured	V12-V14 (.3-.9) , V19 (.4-.6)	V12-V14 (.3-.9) , V19 (.4-.6)	-	-	-	-
11 Pedestrian Injured	V02-V04 (.1, .9) V09.2	V02-V04 (.1, .9) V09.2	-	-	-	-
	V80 (.3-.5), V81.1, V82.1 - other	V80 (.3-.5), V81.1, V82.1 - other				
12 Other and Unspecified	V87 (.0-.8), V89.2 - unspecified	V87 (.0-.8), V89.2 - unspecified	-	-	-	-
Motor Vehicle, Non-traffic						
13 Pedal Cyclist, Other	V10-V11, V12-V14 (.0-.2), V15-V18, V19 (.0-.3, .8, .9)	V10-V11, V12-V14 (.0-.2), V15-V18, V19 (.0-.3, .8, .9)	-	-	-	-
14 Pedestrian, Other	V01, V02-V04 (.0), V05, V06, V09 (.0, .1, .3, .9)	V01, V02-V04 (.0), V05, V06, V09 (.0, .1, .3, .9)	-	-	-	-

Appendix A, continued…

Appendix A, continued…

ICD-10 External Cause of Injury Mortality Matrix

		Intent				
MECHANISM	**All Injury**	**Unintentional**	**Suicide**	**Homicide**	**Undetermined**	**Other***
	V20-V28 (.0-.2), V29 (.0-.3)	V20-V28 (.0-.2), V29 (.0-.3)				
	V30-V39 (.0-.3)	V30-V39 (.0-.3)				
	V40-V49 (.0-.3)	V40-V49 (.0-.3)				
	V50-V59 (.0-.3)	V50-V59 (.0-.3)				
	V60-V69 (.0-.3)	V60-V69 (.0-.3)				
	V70-V79 (.0-.3)	V70-V79 (.0-.3)				
	V81-V82 (.0)	V81-V82 (.0)				
	V83-V86 (.4-.9)	V83-V86 (.4-.9)				
15 Other Motor Vehicle	V88 (.0-.8), V89.0	V88 (.0-.8), V89.0	-	-	-	-
16 Other Land Transport	V80 (.0-.2, .6-.9), V81-V82 (.2-.9), V87.9, V88.9, V89 (.1, .3, .9), X82, Y03, Y32	V80 (.0-.2, .6-.9), V81-V82 (.2-.9), V87.9, V88.9, V89 (.1, .3, .9)	X82	Y03	Y32	-
17 Other Transport	V90-V99 , Y36.1, *U01.1	V90-V99	-	*U01.1	-	Y36.1
18 Natural/Environmental	W42, W43, W53-W64, W92-W99, X20-X39, X51-X57	W42, W43, W53-W64, W92-W99, X20-X39, X51-X57	-	-	-	-
19 Overexertion	X50	X50	-	-	-	-
20 Poisoning	X40-X49, X60-X69, X85-X90, Y10-Y19, Y35.2, *U01 (.6-.7)	X40-X49	X60-X69	X85-X90, *U01 (.6-.7)	Y10-Y19	Y35.2
21 Struck By or Against	W20-W22, W50-W52, X79, Y00, Y04, Y29, Y35.3	W20-W22, W50-W52	X79	Y00, Y04	Y29	Y35.3
22 Suffocation	W75-W84, X70, X91, Y20	W75-W84	X70	X91	Y20	-
23 Other Specified and Unspecified	W23, W35-W41, W44, W49 W85-W91, X58-X59, X75, X81, X83-X84, X96, Y02, Y05-Y09, Y25, Y31, Y33-Y34, Y35 (.1, .5-.7) Y36 (.0, .2, .4-.9), Y85-Y87.2, Y89 (.0, .1, .9), *U01 (.0, .2, .5, .8, .9), *U02, *U03 (.0, .9)					
Other Specified, classifiable		W23, W35-W41, W44, W49 W85-W91, Y85	X75, X81, *U03.0	X96, Y02, Y05-Y07, *U01 (.0, .2, .5)	Y25, Y31	Y35 (.1, .5) Y36 (.0, .2, .4-.8)
Other Specified, NEC		X58, Y86	X83, Y87.0	Y08, Y87.1, *U01.8, *U02	Y33, Y87.2	Y35.6, Y89 (.0, .1)
Unspecified		X59	X84, *U03.9	Y09, *U01.9	Y34, Y89.9	Y35.7 Y36.9

*** Other** - Includes legal intervention and operations of war.

APPENDIX B

ICD-9 External Cause of Injury Morbidity Matrix

		Intent				
MECHANISM	**All Injury**	**Unintentional**	**Suicide**	**Homicide**	**Undetermined**	**Other***
All Injury	E800-E869, E880-E929, E950-E978, E980-E998, E979, E999	E800-E869, E880-E929	E950-E959	E960-E969, E979, E999	E980-E989	E970-E978, E990-E998
1 Cut/Pierce	E920, E956, E966, E986, E974	E920	E956	E966	E986	E974
2 Drowning/Submersion	E910, E954, E964, E984	E910	E954	E964	E984	-
3 Fall	E880-E886, E888, E957, E968.1, E987	E880-E886, E888	E957	E968.1	E987	-
Fire/Hot Object or Substance						
4 Fire/Flame/Smoke	E890-E899, E958.1, E968.0, E988.1, E979.3	E890-E899	E958.1	E968.0, E979.3	E988.1	-
5 Hot Object/Substance, Caustic Substance	E924, E958 (.2, .7), E961, E968.3, E988 (.2, .7)	E924	E958 (.2, .7)	E961, E968.3	E988 (.2, .7)	-
6 Firearm	E922 (.0-.3, .8-.9), E955 (.0-.4), E965 (.0-.4), E985 (.0-.4), E970, E979.4	E922 (.0-.3, .8-.9)	E955 (.0-.4)	E965 (.0-.4), E979.4	E985 (.0-.4)	E970
7 Machinery	E919	E919	-	-	-	-
All Transport						
Motor Vehicle, Traffic						
8 Occupant Injured	E810-E819 (.0, .1)	E810-E819 (.0, .1)	-	-	-	-
9 Motorcyclist Injured	E810-E819 (.2, .3)	E810-E819 (.2, .3)	-	-	-	-
10 Pedal Cyclist Injured	E810-E819 (.6)	E810-E819 (.6)	-	-	-	-
11 Pedestrian Injured	E810-E819 (.7)	E810-E819 (.7)	-	-	-	-
12 Other and Unspecified	E810-E819 (.4, .5, .8, .9), E958.5, E968.5, E988.5	E810-E819 (.4, .5, .8, .9)	E958.5	E968.5	E988.5	-
Motor Vehicle, Non-traffic						
13 Pedal Cyclist, Other	E800-E807 (.3), E820-E825 (.6), E826 (.1, .9), E827-E829 (.1)	E800-E807 (.3), E820-E825 (.6), E826 (.1, .9), E827-E829 (.1)	-	-	-	-
14 Pedestrian, Other	E800-E807 (.2), E820-E825 (.7), E826-E829 (.0)	E800-E807 (.2), E820-E825 (.7), E826-E829 (.0)	-	-	-	-
15 Other Motor Vehicle	E820-E825 (.0-.5, .8, .9)	E820-E825 (.0-.5, .8, .9)	-	-	-	-
16 Other Land Transport	E800-E807 (.0, .1, .8, .9) - railway E826 (.2-.8), E827-E829 (.2-.9) - other road vehicle	E800-E807 (.0, .1, .8, .9), E826 (.2-.8), E827-E829 (.2-.9)	-	-	-	-
17 Other Transport	E830-E838 - water E840-E845, E958.6, E988.6, E979.1 - air/space	E830-E838, E840-E845	E958.6	E979.1	E988.6	-
18 Natural/Environmental	E900-E909, E928 (.0-.2), E958.3, E988.3	E900-E909, E928 (.0-.2)	E958.3	-	E988.3	-

Appendix B, continued…

Appendix B, continued…

ICD-9 External Cause of Injury Morbidity Matrix

			Intent				
MECHANISM		**All Injury**	**Unintentional**	**Suicide**	**Homicide**	**Undetermined**	**Other***
19	Overexertion	E927	E927	-	-	-	-
20	Poisoning	E850-E869, E950-E952, E962, E980-E982, E972, E979 (.6-.7)	E850-E869	E950-E952	E962, E979 (.6-.7)	E980-E982	E972
21	Struck By or Against	E916-E917, E960.0, E968.2, E973, E975	E916-E917	-	E960.0, E968.2	-	E973, E975
22	Suffocation	E911-E913, E953, E963, E983	E911-E913	E953	E963	E983	-
23	Other Specified and Unspecified	E846-E848, E887, E914-E915, E918, E921, E922.4, E923, E925-E926, E928 (.3, .8-.9), E929 (.0-.5, .8-.9), E955 (.5-.6, .9), E958 (.0, .4, .8-.9), E959, E960.1, E965 (.5-.9), E967, E968 (.4, .6-.9), E969, E971, E976-E978, E985 (.5-.6), E988 (.0, .4, .8-.9), E989-E996, E997 (.0-.2, .8-.9), E998, E979 (.0, .2, .5), E979 (.8-.9), E999					
	Other Specified, classifiable		E846-E848, E914-E915, E918, E921, E922.4, E923, E925-E926, E928.3, E929 (.0-.5)	E955 (.5-.6, .9), E958 (.0, .4)	E960.1, E965 (.5-.9), E967, E968 (.4, .6-.7), E979 (.0, .2, .5)	E985 (.5-.6), E988 (.0, .4)	E971, E978, E990-E994, E996, E997 (.0-.2)
	Other Specified, NEC		E928.8, E929.8	E958.8, E959	E968.8, E969, E979 (.8-.9), E999	E988.8, E989	E977, E995, E997.8, E998
	Unspecified		E887, E928.9, E929.9	E958.9	E968.9	E988.9	E976, E997.9

*** Other** - Includes legal intervention (E970-E978) and operations of war (E990-E998).

APPENDIX C

Region by Census Areas/Borough and Tribal Health Organization

Because many tribal health organization service areas are small, the numbers of injury deaths and hospitalizations are also small. As a result, several tribal health organization service areas were combined to get a large enough population size to calculate rates. A couple of service areas were adjusted to "fit" census area/borough boundaries.

Region on Map	Census Area/Borough included in Region	THOs in Region	Exceptions to THO Villages
Aleutians and Pribilofs	Aleutians East Borough, Aleutians West Borough	APIA, Eastern Aleutian Tribes, St. George Traditional Council	
Anchorage/Mat-Su	Anchorage Municipality, Matanuska-Susitna Borough	SCF, Chickaloon Village, Eklutna Native Village, Knik Tribe	
Arctic Slope	North Slope Borough	ASNA, North Slope Borough, Ukpeagvik Inupiat Corporation	
Bristol Bay	Dillingham, Lake and Peninsula Borough, Bristol Bay Borough	BBAHC	BBAHC: Goodnews Bay and Platinum were included in YK-Delta
Copper River/Prince William Sound	Valdez/Cordova	Chugachmiut (part), Chitna Traditional Village Council, Copper River Native Association, Mt. Sanford Tribal Consortium, Valdez Native Tribe	Chugachmuit: Port Graham, Nanwalek, Seward were included in Kenai Peninsula; Copper River: Cantwell was included in Interior
Interior	Denali Borough, Fairbanks North Star Borough, Southeast Fairbanks, Yukon-Koyukuk	TCC, Council of Athabascan Tribal Governments, Fairbanks Native Assoc., Tanana Tribal Council	Interior: Anaktuvak Pass was included in Arctic Slope
Kenai Peninsula	Kenai Peninsula Borough	Chugachmiut (part), Kenaitze Indian Tribe, Ninilchik Traditional Council, Seldovia Village Tribe, Tyonek Native Village	Chugachmiut: Chenega Bay, Tatitlek, Valdez and Cordova were included in Copper River/Prince William Sound
Kodiak Area	Kodiak Island Borough	KANA, Karluk Tribal Council	
Northwest Arctic	Northwest Arctic Borough	Maniilaq	Maniilaq: Point Hope was included in Arctic Slope
Norton Sound	Nome	NSHC, Native Village of Diomede	
Southeast	Yakutat Borough, Skagway-Hoonah-Angoon, Haines Borough, Juneau Borough, Sitka Borough, Wrangell-Petersburg, Prince of Wales/Outer Ketchikan, Ketchikan-Gateway Borough, Yakutat Borough	SEARHC, Hoonah Indian Association, Ketchikan Indian Association, Metlakatla Indian Community, Yakutat Tlingit Tribe	
Yukon-Kuskokwim	Bethel, Wade Hampton	Akiachak Native Village, Native Village of Kwinhagak, YKHC	YKHC: Anvik, Grayling, Holy Cross, and Shageluk were included in Interior

APPENDIX D

Region with Corresponding Villages

Region on Map	**Villages** (adjusted to "fit" census/borough boundaries)
Aleutians and Pribilofs	Adak, Akutan, Atka, Attu, Cold Bay, False Pass, King Cove, Nelson Lagoon, Nikolski, St. George, St. Paul, Sand Point, Unalaska
Anchorage/Mat-Su	Anchorage, Big Lake, Butte, Chase, Chickaloon, Farm Loop, Fishhook, Gateway, Glacier View, Houston, Knik River, Knik-Fairview, Lake Louise, Lazy Mountain, Meadow Lakes, Palmer, Petersville, Point MacKenzie, Skwentna, Susitna, Sutton-Alpine, Talkeetna, Tanaina, Trapper Creek, Wasilla, Willow
Arctic Slope	Alpine, Anaktuvak Pass, Atqasuk, Barrow, Deadhorse, Kaktovik, Lonely, Nuiqsut, Point Hope, Point Lay, Prudhoe Bay, Wainwright
Bristol Bay	Aleknagik, Chignik, Chignik Lagoon, Chignik Lake, Clark's Point, Dillingham, Egegik, Ekwok, Igiugig, Iliamna, Ivanof Bay, King Salmon, Kokhanok, Koliganek, Levelok, Manokotak, Naknek, New Stuyahok, Newhalen, Nondalton, Pedro Bay, Perryville, Pilot Point, Port Alsworth, Port Heiden, South Naknek, Togiak, Twin Hills, Ugashik
Copper River/Prince William Sound	Chenega, Chisana, Chistochina, Chitina, Copper Center, Copperville, Cordova, Gakona, Glennallen, Gulkana, Kenny Lake, McCarthy, Mendeltna, Mentasta Lake, Nelchina, Paxson, Silver Springs, Slana, Tatitlek, Tazlina, Tolsona, Tonsina, Valdez, Whittier, Willow Creek
Interior	Allakaket, Alatna, Anderson, Anvik, Arctic Village, Beaver, Bettles, Big Delta, Birch Creek, Cantwell, Central, Chalkyitsik, Chicken, Circle, Clear, Coldfoot, College, Delta Junction, Deltana, Dot Lake, Dry Creek, Eagle, Eielson AFB, Ester, Evansville, Fairbanks, Ferry, Fort Greely, Fort Yukon, Fox, Galena, Grayling, Harding Lake, Healy, Healy Lake, Holy Cross, Hughes, Huslia, Kaltag, Koyukuk, Lake Minchumina, Lignite, Livengood, Manley Hot Springs, McGrath, McKinley Park, Minto, Nikolai, Nenana, North Pole, Northway, Northway Village, Northway Junction, Nulato, Rampart, Ruby, Salcha, Shageluk, Stevens Village, Takotna, Tanacross, Tanana, Telida, Tetlin, Tok, Two Rivers, Venetie, Wiseman
Kenai Peninsula	Anchor Point, Clam Gulch, Cooper Landing, Fritz Creek, Happy Valley, Homer, Hope, Kasilof, Kachemak, Kalifornsky, Kenai, Miller Landing, Moose Pass, Nanwalek, Nikiski, Ninilchik, Port Graham, Seldovia, Seward, Soldotna, Sterling, Tyonek,
Kodiak Area	Akhiok, Kodiak, Karluk, Larsen Bay, Old Harbor, Ouzinkie, Port Lions
Northwest Arctic	Ambler, Buckland, Deering, Kiana, Kivalina, Kobuk, Kotzebue, Noatak, Noorvik, Selawik, Shungnak
Norton Sound	Brevig Mission, Council, Diomede, Elim, Gambell, Golovin, Koyuk, Nome, Point Clarence, St. Michael, Savoonga, Shaktoolik, Shishmaref, Solomon, Stebbins, Teller, Unalakleet, Wales, White Mountain
Southeast	Angoon, Coffman Cove, Craig, Douglas, Edna Bay, Gustavus, Haines, Hobart Bay, Hollis, Hoonah, Hydaburg, Hyder, Juneau, Kake, Kasaan, Ketchikan, Klawock, Klukwan, Kupreanof, Metlakatla, Pelican, Petersburg, Point Baker, Port Alexander, Port Protection, Saxman, Sitka, Skagway, Tenakee Springs, Thorne Bay, Whale Pass, Wrangell, Yakutat
Yukon-Kuskokwim	Aniak, Akiak, Akiachak, Alakanak, Atmautluak, Bethel, Chefornak, Chevak, Chuathbaluk, Crooked Creek, Eek, Emmonak, Goodnews Bay, Hooper Bay, Kasigluk, Kipnuk, Kongiganak, Kotlik, Kwethluk, Kwigillingok, Lower Kalskag, Lime Village, Marshall, Mekoryuk, Mt. Village, Napakiak, Napaskiak, Newtok, Nightmute, Nunapitchuk, Oscarville, Pilot Station, Pitka's Point, Platinum, Quinhagak, Red Devil, Russian Mission, St Marys, Scammon Bay, Sheldon Point, Sleetmute, Stony River, Toksook Bay, Tuluksak, Tuntutuliak, Tununak, Upper Kalskag

For additional information concerning injuries among Alaska Natives, request additional copies, or for questions about this report, please contact:

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