

8. Injury Prevention



Goal:
Reduce injuries, disabilities, and deaths due to unintentional injuries.

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Health Goal for the Year 2010: Reduce injuries, disabilities, and deaths due to unintentional injuries.					
	Indicator	Alaska Data Source	U.S. Baseline	Alaska Baseline	Alaska Target Year 2010
	All Unintentional Injuries				
1	Reduce deaths caused by unintentional injury (per 100,000 population).	ABVS	35.7 (1999)	56.1 (1999)	31
	Alaska Native	ABVS		119.9 (1999)	31
1a	Reduce deaths caused by unintentional injury for children aged 0-19 years (per 100,000 population).	ABVS	16.2 (1999)	15.1 (1999)	9.9
	Alaska Native	ABVS		36.1 (1999)	9.9
2	Reduce hospitalizations due to nonfatal unintentional injuries (per 100,000 population)	ATR	612 (1996) NHDS	635 (1998)	570
2a	Reduce hospitalizations due to nonfatal unintentional injuries for children aged 0-19 years (per 100,000 population).	ATR		440.2 (1999)	350
	Motor Vehicle Crash Injuries				
3	Reduce deaths caused by motor vehicle crashes (per 100,000 population).	ABVS	15.0 (1999)	14.7 (1999)	7
	Alaska Native	ABVS		27.6 (1999)	7
4	Reduce motor vehicle crash deaths per 100 million vehicle miles traveled.	DOT&PF	1.6 (1998) FARS	1.7 (1999)	0.9
5	Reduce the percent of motor vehicle fatalities that are alcohol related (percent of fatalities).	DOT&PF	38% (1999) FARS	44% (1999)	38%
6	Reduce non-fatal injuries caused by motor vehicle crashes (per 100,000 population).	DOT&PF	1,187 (1999) DOT, NHTSA	978 (1999)	770
7	Reduce the number of pedestrians injured in traffic crashes (nonfatal injuries - rate per 100,000).	DOT&PF	28 (2000) NHTSA	21.4 (1999)	20
8	Reduce the number of bicyclists injured in traffic crashes (nonfatal injuries - rate per 100,000).	DOT&PF	186 (2000) NHTSA	21.4 (1999)	20
9	Increase use of safety belts by drivers and passengers.	BRFSS	69% (1998)	65% (1997)	80%
10	Increase use of appropriate restraint by children less than 16 years of age when riding in a car.	BRFSS	85% (1997)	83% (1997)	90%
11	Increase the percent of car seat use for newborn infants (percent of mothers of newborns).	PRAMS		91.2% (1998)	100%
12	Increase the percent of motorcycle operators and passengers using helmets.	Alaska data not available	67% (1998)	Developmental	
13	Increase the percent of children aged 5-15 years old who use bicycle helmets when riding a bicycle.	BRFSS	33% (1999)	43% (1999)	50%
14	Increase the percent of operators and passengers of snow machines (SM) and all-terrain vehicles (ATV) using helmets.	AIPC		ATV 13% SM 46%	ATV 45% SM 70%
	Firearm Deaths and Injuries				
15	Reduce firearm-related deaths (per 100,000 people).	ABVS	10.6 (1999)	16.2 (1999)	9
	Alaska Native			28.9 (1999)	9

Health Goal for the Year 2010: Reduce injuries, disabilities, and deaths due to unintentional injuries.					
	Indicator	Alaska Data Source	U.S. Baseline	Alaska Baseline	Alaska Target Year 2010
16	Reduce the prevalence of Alaskan adults reporting firearms in or around the house and at least one firearm is kept loaded and unlocked.	BRFSS	19% (1998) NHIS ¹	12% (1996)	10%
Head and Spinal Cord Injuries					
17	Reduce hospitalizations for nonfatal head injuries (per 100,000 population).	ATR	64.1 (1999) NHDS	80.7 (1998)	58
18	Reduce hospitalizations for nonfatal spinal cord injuries (per 100,000 population).	ATR	4.2 (1999) NHDS	6.3 (1998)	3.4
Drowning					
19	Reduce deaths from drowning (per 100,000 population).	ABVS	1.5 (1999)	7 (1999)	1.5
	Alaska Native	ABVS		20.8 (1999)	1.5
20	Increase use of personal flotation devices.	DHSS		Developmental	
21	Increase compliance with boating safety equipment requirements (percent of boardings).	Coast Guard Boarding Database		42% (1999)	60%
Residential Fire Deaths and Injuries					
22	Reduce residential fire deaths (per 100,000 population).	ABVS	1.2 (1999)	2.9 (1995-1999)	1.2
	Alaska Native	ABVS		5.8 (1995-1999)	1.2
23	Reduce the percent of households that do NOT have a working smoke alarm (percent of mothers of newborns).	PRAMS		5.7% (1998)	0
Falls					
24	Reduce deaths from falls (per 100,000 population).	ABVS	4.8 (1999)	5.1 (1995-1999)	2.6
	Alaska Native	ABVS		4.6 (1995-1999)	2.6
Dog Bite Injuries					
25	Reduce hospital admissions for nonfatal dog bite injuries (per 100,000 population).	ATR		4.2 (1998)	3

¹Reduce the proportion of persons living in homes with firearms that are loaded and unlocked

ABVS - Alaska Bureau of Vital Statistics

ATR -Alaska Trauma Registry; rates are age-adjusted to US 2000 population, only one hospitalization per injury

DOT&PF -Alaska Department of Transportation and Public Facilities; 1999 Alaska Traffic Accidents; rates reported from this source are crude rates

AIPC - Alaska Injury Prevention Center Observation Study

PRAMS - Alaska Pregnancy Risk Assessment Monitoring System

NHDS - National Hospital Discharge Survey

FARS - Fatality Analysis Reporting System

DOT, NHTSA - Department of Transportation, National Highway Traffic Safety Administration

DHSS - Alaska Department of Health and Social Services

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Overview

Injuries are defined as “any unintentional or intentional damage to the body resulting from acute exposure to thermal, mechanical, electrical, or chemical energy or from the absence of such essentials as heat or oxygen.”

The risk of injury is so great that most persons sustain a significant injury at some time during their lives. Generally, the public believes that injuries happen by chance and are the result of unpreventable “accidents.” In fact, many injuries are not “accidents” or random, uncontrollable acts of fate; rather, most injuries are predictable and preventable. The term “accident” is replaced by “unintentional injury” or “motor vehicle crash” to emphasize the possibility of preventing such incidents.

Injuries are a significant public health and social services problem because of the prevalence of injuries, the toll of injuries on the young, and the high cost in terms of resources and suffering.

Issues and Trends in Alaska

Alaska has one of the highest injury rates in the nation. Both the intrinsic hazards of the Alaska environment and low rates of protective behavior contribute to injuries and injury deaths.

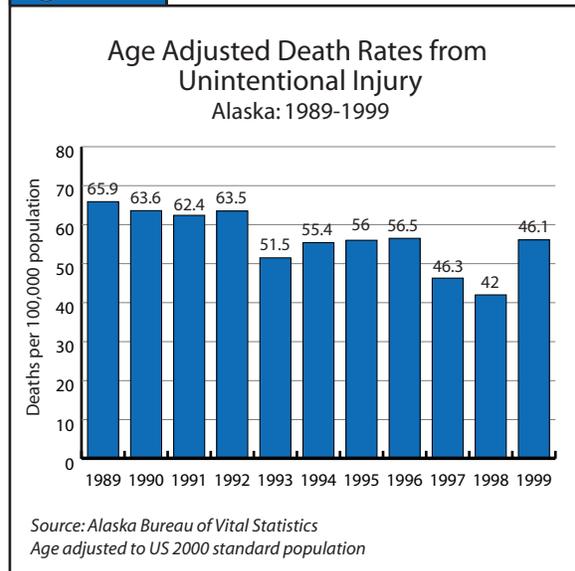
The Alaska population is also relatively young, with a mean age of 32 in the 2000 census compared to a national median age of 35. Several of the youngest census areas in the United States are in Alaska, including Wade-Hampton (20), Northwest Arctic Borough (24), and Bethel (25). Injuries are the major cause of death among people aged one to 34 years nationally and among Alaskans aged one to 44.

Alaska is a land of abundant waters, rugged terrain, and extreme climates. Alaskans rely on a variety of vehicles – boats, small planes, snowmobiles, and all terrain vehicles – to travel vast distances. Cold, darkness, and ice contribute to travel risk. Access to medical care is limited in rural areas. The need for home heating devices increases the risk of fire and inhalation injuries. Recreational and subsistence hunting mean that firearms are readily available, increasing the risk of unintentional injuries as well as homicide and suicide. Many Alaskans work in the most hazardous of occupations, such as commercial fishing, lumbering, and mining (see *Chapter 9: Occupational Safety and Health*).

Injury Mortality Rates

Unintentional injury death rates in Alaska declined 36.3 percent from 1989 to 1998 (Figure 8-1), but when age-adjusted were still 51 percent higher than the United States rate in 1998. Firearm death rates in Alaska are almost twice the national rate, and for Alaska Natives more than four times the national rate. Residential fire death rates in Alaska are three times the national rate. The drowning rate in Alaska is over five times the national rate.

Figure 8-1



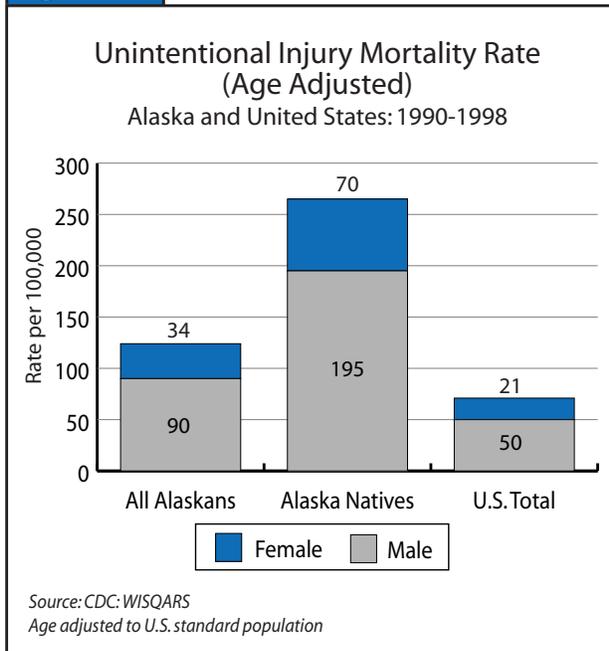
Unintentional injuries were the third leading cause of death in Alaska in 1998. Unlike heart disease and cancer, which are the leading causes of death among the elderly, injuries are the leading cause of death in children and young adults. Years of Life Lost (YLL), the number of years before the 65th birthday a death occurs, provides a measure of the societal impact of premature deaths. When YLL is calculated by cause of death for 1998, unintentional injuries are responsible for the greatest number of YLL in Alaska.

External causes of death (non-intentional injuries, homicide, suicide, and violent deaths in which the intent is unknown) accounted for 17 percent of all deaths in Alaska in 1998 and 54 percent of the deaths from birth to age 44. Suicide was the second leading cause of death among people 15 to 34, after unintentional injuries.³ Suicide is addressed in *Chapter 5: Mental Health* and homicide is addressed in *Chapter 9: Violence and Abuse*.

Disparities

Injury mortality is greater in males than females in all age groups, in Alaska and nationally. Alaska Native injury mortality rates are double those for all Alaskans (Figure 8-2).

Figure 8-2



Trauma Registry Data

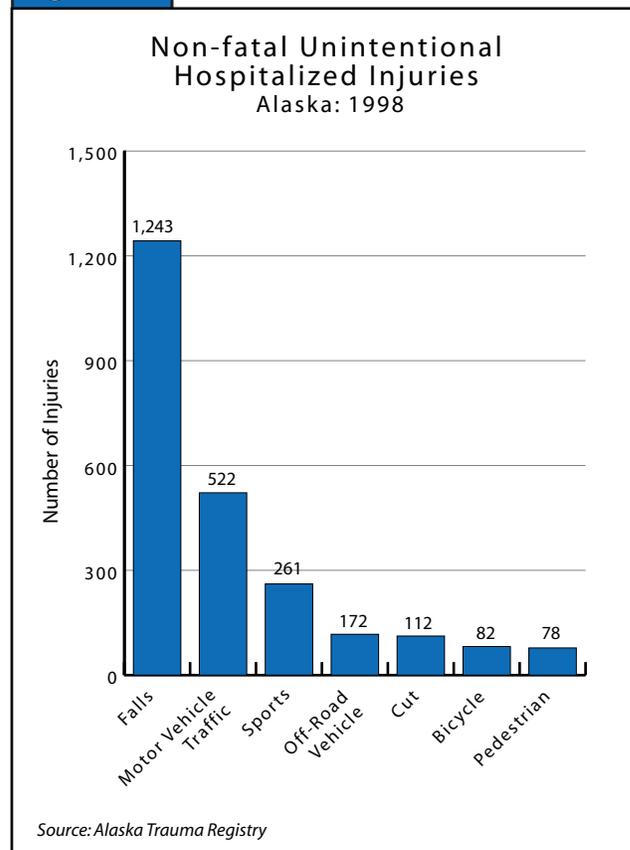
National statistics are available only on injuries that cause death. Most of the health costs of injuries – in medical and hospital care, time lost from work, hospitalization, and disability – result from non-fatal injuries. In Alaska, hospitalizations caused by injuries are reported to the Trauma Registry.

In 1998, there were 3,180 Alaskan residents with non-fatal unintentional injuries requiring hospitalization. This was a rate of 515 per 100,000 population. Falls comprised 39 percent of the hospitalized injuries, followed by injuries to occupants of motor vehicles on the highway, and injuries to riders of off-road vehicles (Figure 8-3). Injuries from falls, cuts, and sports are prevalent in hospital discharge data, while uncommon in mortality data.

Alcohol and Injuries

The high rate of alcohol abuse in Alaska (see *Chapter 4: Substance Abuse*) contributes to the toll of injuries and violent deaths. Alaska has the second highest per

Figure 8-3



capita alcohol consumption in the United States. The Alaska Division of Alcoholism and Drug Abuse estimates that 14 percent of the Alaska population abuses alcohol or is dependent on alcohol, compared to 7 percent of the United States population.

Over 100 communities in Alaska ban the sale, importation, or possession of alcohol. Alcohol-related injury deaths are highest in “wet” Alaska villages, those without laws restricting the sale and importation of alcohol. Deaths due to motor vehicle injury, homicide, and hypothermia declined in villages that restricted alcohol.

Protective Behaviors

Observation studies show that 61 percent of Alaskan used seat belts, compared to 74 percent nationally. A helmet use observation study by the Alaska Injury Prevention Center, completed in May 2001, puts helmet use by bicyclists in Alaska at an average rate of 31 percent, much lower than the 82 percent seen nationally. Snow machine and all-terrain vehicle wear rates were 46 percent and 13 percent respectively. Helmet use rates were lowest in rural areas compared with urban areas.

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Alaska has mandatory seat belt and child restraint laws (AS 28.05.095). Police officers cannot issue citations for violations unless they have another reason to stop the vehicle. Alaska does not require helmet use on motorcycles, snowmobiles, all terrain vehicles, or bicycles.

Current Strategies and Resources

The Injury Surveillance and Prevention Program (ISAPP), within the Division of Public Health's Section of Community Health and Emergency Medical Services (CHEMS), has adopted the Safe States model developed by the State and Territorial Injury Prevention Directors' Association (STIPDA). The components of this model are: 1) data collection and analysis; 2) program design, implementation, and evaluation; 3) coordination and collaboration; 4) technical support and training; and 5) public policy.

It is the strategy of ISAPP that injury prevention projects are data-driven -- efforts are focused on those regions and populations that are of greatest risk as quantified by mortality and hospital injury data. Injuries targeted for prevention are chosen not only by prevalence, but also on their "preventability" (i.e., the likelihood of success of an injury prevention method and public acceptance of and compliance with that method). Program design and implementation activities are based on well-established principles in injury prevention, with evaluation being an important component. Experience demonstrates that successful injury prevention programs are community-based, even when originating from state or national initiatives. The degree to which they can be replicated is a predictor of the statewide success of a program. The CHEMS injury prevention program largely emphasizes three activities: the distribution and correct use of safety devices; the passage and enforcement of public policy (including statutes, ordinances, and regulations); and injury prevention education, especially clinically-based and anticipatory guidance.

The Section of Maternal, Child, and Family Health (MCFH) collaborates with the Alaska SAFE KIDS Coalition, Medicaid, and CHEMS in childhood injury prevention. Their focus is child passenger safety, including training for certified child passenger seat technicians and providing child passenger seats to low-income families.

The Alaska Native Tribal Health Consortium identifies injury prevention as a priority for health promotion programs. Injury prevention programs for Alaska Natives are in place at the Alaska Native Medical Center, Tanana Chiefs Conference, Maniilaq Association, Norton Sound Health Corporation, Southeast Alaska Regional Health Consortium, Bristol Bay Area Health Corporation, Kodiak Area Native association, Mt. Sanford Tribal Consortium, Southcentral Foundation, and the Yukon-Kuskokwim Health Corporation.

The Alaska Marine Safety Education Association and the Alaska Vocational Technical Center teach courses in marine survival and cold weather safety and prepare instructors for schools and commercial fishing vessels. The Coast Guard has a recreational boating safety program and safety education for fishers. American Red Cross chapters throughout the state provide water safety instructor training.

Alaska's Boating Safety Law took effect January 1, 2001. The law established a Boating Safety Advisory Committee to provide input on safety issues and promote boating safety education throughout the state. Boat registration funds and federal funds are used for boating safety and education programs.

The Department of Public Safety (DPS) provides a variety of fire prevention courses through the Fire Marshall's Office. "Learn not to Burn" is a school based fire and burn injury prevention program for preschool through grade 6. "Firestoppers" teaches parents and professionals to prevent arson by juveniles. The DPS also provides the "Preventor" injury prevention program in partnership with the Alaska State Troopers, Alaska's ABC affiliates, and Headstart-Americorps, and "RiskWatch," a school based injury prevention program for preschool through grade 8.

The Alaska Injury Prevention Center (APIC) is a statewide, non-profit corporation. The Center is developing plans for prevention of home and leisure injuries, workplace injuries, and intentional injuries. Elder's safety and children's safety plans will also be developed.

The Alaska Native Tribal Health Consortium (ANTHC) identified injury prevention as a priority area in its 2000-2005 Strategic Plan. ANTHC participates in the national Indian Health Service Injury Control Initiative, the Alaska Boating Safety Advisory Council, and the Alaska Injury Prevention Center. ANTHC's Department of Environmental Health and Engineering advises tribal health organizations

on the development of injury prevention programs. Regional tribal health organizations present a wide variety of community programs, such as the Yukon-Kuskokwim Health Corporations annual Bike Safety Rodeo.

Data Issues and Needs

Injury surveillance is the ongoing process of tracking and monitoring incidence rates, causes, and circumstances resulting in fatal and non-fatal injuries. Analysis and dissemination of the data is utilized in injury prevention efforts to assess the need for new policies or programs and to evaluate the effectiveness of existing policies and programs.

Population-based surveillance is the preferred method of monitoring the occurrence of injuries, because rates of injuries and injury risk factors can be calculated and generalized to the population. The Planning Comprehensive Injury Surveillance in State Health Departments Working Group of the State and Territorial Injury Prevention Directors' Association (STIPDA) has endorsed 14 injuries and injury risk factors and 11 data sets for core surveillance. The injuries and risk factors are: motor vehicle injuries, alcohol involvement in motor vehicle deaths, self-reported seat belt and safety seat use, homicide, suicide, suicide attempts, firearm injuries, traumatic brain injuries, fire and burn injuries, smoke alarm use, submersion injuries, traumatic spinal cord injuries, fall injuries, and poisoning.

The data sets recommended for injury surveillance are: vital records, hospital discharge data, Fatality Analysis Reporting System (FARS) data, Behavioral Risk Factor Surveillance System (BRFSS) data, Youth Risk Behavior Surveillance System data, emergency department data, medical examiner system, child death review data, National Occupant Protection Use Survey (NOPUS) data, Uniform Crime Reporting (UCR) System data, and emergency medical services (EMS) data.

Alaska now uses all of these data sets except for emergency department and emergency medical services data, which are now being developed. The Youth Risk Behavior Surveillance System (YRBSS) has been used intermittently in Alaska. Regular and widespread use of YRBSS would provide important data on risk factors for injuries in adolescents.

Alaska is committed to the principles set forth for injury surveillance by STIPDA including standardized reporting, data linkage, protection of the confidentiality of the public, and the use of injury data to support program development and evaluation.

Related Focus Areas

A variety of objectives in other *Healthy Alaskans* chapters are linked to objectives in *Injury Prevention*.

- *Substance Abuse*
- *Mental Health*
- *Violence and Abuse Prevention*
- *Occupational Safety and Health*
- *Maternal, Infant, and Child Health*
- *Arthritis and Osteoporosis*
- *Disability*

In *Substance Abuse*, deaths caused by alcohol-related motor vehicle crashes, reports of alcohol-related child abuse, and adolescents reporting riding with a driver who has been drinking are all indicators that are linked to *Injury Prevention*. For example, decreasing the amount of driving under the influence of alcohol will reduce the number of people injured and killed. In *Mental Health*, decreasing suicide and suicide attempts will result in fewer firearms deaths and injuries and fewer head and spinal cord injuries. Reducing maltreatment of children, partner abuse, and physical fighting by adolescents, indicators in *Violence and Abuse Prevention*, will reduce injuries. *Occupational Safety and Health* focuses on work-related injuries and deaths, and if reduced will decrease the total number of unintentional injuries to Alaskans. Child and adolescent deaths are important indicators in the *Maternal, Child and Infant* chapter. *Disability and Injury Prevention* are related, as reducing injuries will reduce the number of people with disabilities. Finally, if osteoporosis cases decrease there will be a reduction of hip fractures to women aged 65 or older.

8. Injury Prevention

References and Sources

Alaska

Alaska Injury Prevention Center

www.alaska-ipc.org

Department of Public Safety

www.dps.state.ak.us/ast/safetybear/index.htm

State Troopers: Safety Bear

DNR: Office of Boating Safety

www.dnr.state.ak.us/parks/boating/index.htm

DNR: Division of Parks
and Outdoor Recreation

www.dnr.state.ak.us/parks/safety/index.htm

Kids Don't Float

www.chems.alaska.gov/kids_don't_float.htm

National

Consumer Product Safety Commission

www.cpsc.gov/

Harborview Injury Prevention and
Research Center

www.depts.washington.edu/hiprc/

Indian Health Services:
Injury Prevention

[www.ihs.gov/MedicalPrograms/InjuryPrevention/
index1.asp](http://www.ihs.gov/MedicalPrograms/InjuryPrevention/index1.asp)

National Program for Playground Safety

www.uni.edu/playground/home.html

National Center for
Injury Prevention and Control

www.cdc.gov/ncipc/ncipchm.htm

National Highway Transportation
Safety Association

www.nhtsa.dot.gov/

SAFE KIDS

www.safekids.org

State and Territorial Injury Prevention
Directors' Association

www.stipda.org/