

# Chapter 3: Injury

Unintentional injury (formerly called accidents) and intentional self-harm (suicide) have been among the leading causes of death in the NSB for many years. Moreover, they are consistently the top causes of premature death among North Slope residents, robbing families and communities of young lives that are the hope for the future. Injuries that do not result in death can lead to lost productivity, suffering, healthcare costs, and sometimes, long-term disability. Intentional injury of others (assaults), and particularly intimate partner violence and sexual assault, also have tremendous impacts on community health. Injury is a major area of health disparity for the NSB.

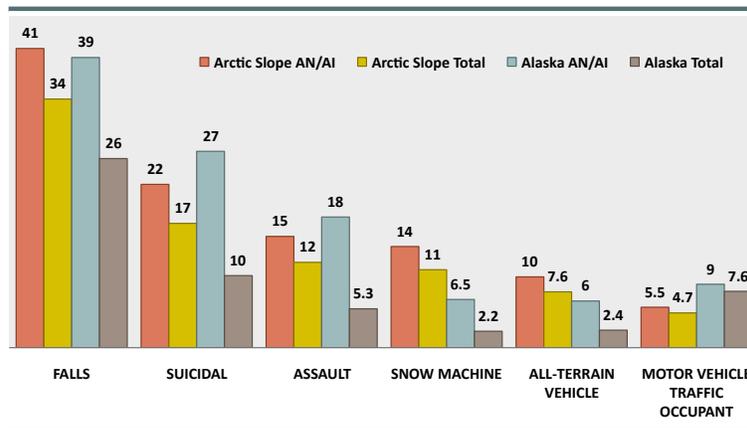
## 3.1. Injury Statistics

### 3.1.1. Non-Fatal Injury Hospitalization

#### 3.1.1.1. Injury Hospitalization Rates, by Cause of Injury

From 1999 to 2008, there were 736 non-fatal injury hospitalizations among North Slope (referred to as Arctic Slope in the source material) residents. During this 10-year period, the leading causes of injury hospitalization were falls, followed by suicide attempts, assault, and snowmachine related injury hospitalization. Non-fatal injury hospitalization rates were highest in the elderly, due to falls. With the exception of motor vehicle traffic-related injury hospitalizations, rates in the NSB were higher than statewide rates for the leading causes of injury hospitalization. In particular, the snowmachine-related injury hospitalization rate among NSB residents was five times the statewide rate, and among Alaska Native/American Indian (AN/AI) residents only, the NSB rate was more than twice the statewide rate. These rate disparities were similar for all-terrain vehicles (ATVs), or 4-wheelers.<sup>1</sup>

**Figure 3.1: Non-Fatal Injury Hospitalization Rates, by Cause of Injury:**  
Hospitalizations per 10,000 persons, 1999–2008

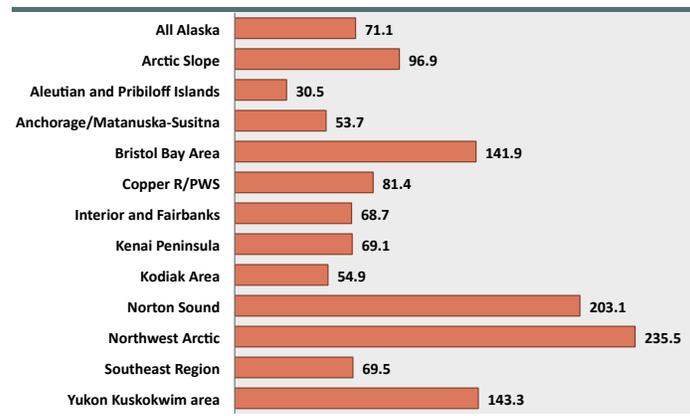


Data source: Alaska Native Tribal Health Consortium Injury Prevention Program.  
Rates displayed above are for the individual causes of injury with at least 20 occurrences during the 10-year time period.  
Data are reported by residential region of the patient, not by region where the injury occurred. The Arctic Slope region includes all NSB villages, plus Deadhorse, Prudhoe Bay, and Alpine; however, only one patient listed their residence as in an oil industry village (Prudhoe Bay). Among Arctic Slope residents, 8% of injury hospitalizations occurred outside of the region.  
All rates are per 10,000 residents, not adjusted for age.

#### 3.1.1.2. Regional Injury Hospitalization Rate

Non-fatal injury hospitalization rates vary widely across the state. In 2004–2008, the Northwest Arctic and Norton Sound regions had the highest rates in the state—notably higher than the neighboring Arctic Slope, as seen in Figure 3.2.

**Figure 3.2: Total Non-Fatal Injury Hospitalization Rates, by Region: Hospitalizations per 10,000 persons, 2004–2008**

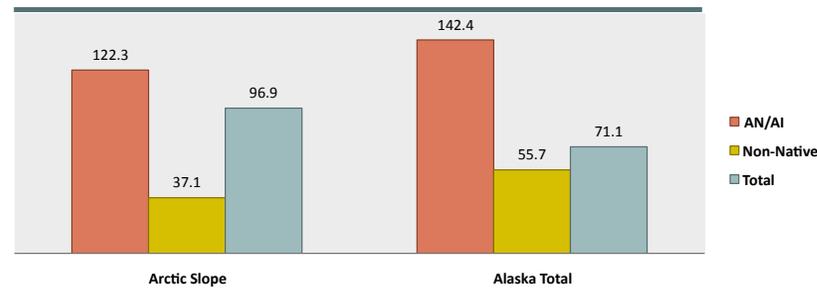


Data source: Alaska Native Tribal Health Consortium Injury Prevention Program.  
 Data are reported by residential region of the patient, not by region where the injury occurred. The Arctic Slope region includes all NSB villages, plus Deadhorse, Prudhoe Bay, and Alpine; however, only one patient listed their residence as in an oil industry village (Prudhoe Bay). Among Arctic Slope residents, 8% of injury hospitalizations occurred outside of the region.  
 All rates are per 10,000 residents, not adjusted for age.

### 3.1.1.3. Injury Hospitalization Rates, by Race

Injury is an area of considerable racial disparity, both in Alaska and in the NSB. In 2004–2008, the non-fatal injury hospitalization rate for Alaska Native/American Indian residents of the North Slope was more than three times that of non-Native residents. This racial disparity is similar to that seen at the state level.<sup>1</sup>

**Figure 3.3: Non-Fatal Injury Hospitalization Rates, By Race: Hospitalizations per 10,000 persons, 2004–2008**

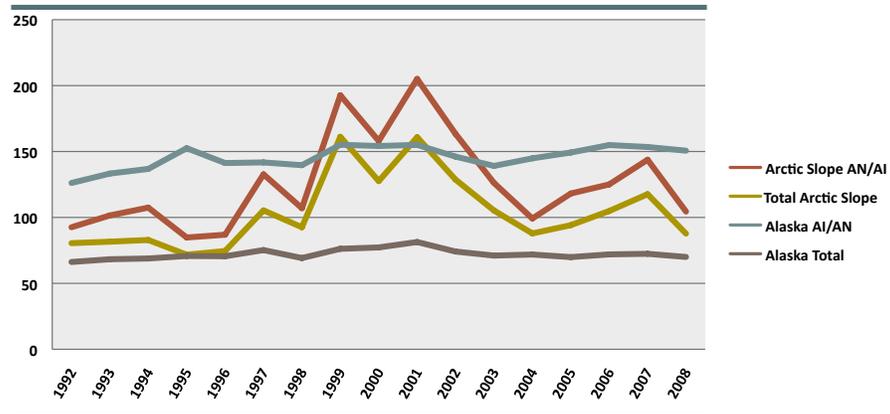


Data source: Alaska Native Tribal Health Consortium Injury Prevention Program.  
 Data are reported by residential region of the patient, not by region where the injury occurred. The Arctic Slope region includes all NSB villages, plus Deadhorse, Prudhoe Bay, and Alpine; however, only one patient listed their residence as in an oil industry village (Prudhoe Bay). Among Arctic Slope residents, 8% of injury hospitalizations occurred outside of the region.  
 All rates are per 10,000 residents, not adjusted for age.

### 3.1.1.4. Injury Hospitalization Rate Trends

Annual non-fatal injury hospitalization rates have fluctuated quite widely in the NSB since 1992. Between 1992 and 2008, the number of injury hospitalizations per year among NSB residents varied from a low of 43 hospitalizations in 1995 to a high of 106 hospitalizations in 2001.

**Figure 3.4: Annual Non-Fatal Injury Hospitalization Rates for Arctic Slope and Alaska Residents: Hospitalizations per 10,000 persons, 1992–2008**



Data source: Alaska Native Tribal Health Consortium Injury Prevention Program.  
Data are reported by residential region of the patient, not by region where the injury occurred. The Arctic Slope region includes all NSB villages, plus Deadhorse, Prudhoe Bay, and Alpine; however, only one patient listed their residence as in an oil industry village (Prudhoe Bay). Among Arctic Slope residents, 8% of injury hospitalizations occurred outside of the region.  
All rates are per 10,000 residents, not adjusted for age.

### 3.1.1.5. Traumatic Brain Injury Hospitalizations

Traumatic brain injury (TBI) refers to damage to the brain resulting from an injury, usually caused by a blow or jolt to the head. Survivors of TBI can experience immediate symptoms such as headache and confusion as well as long-term cognitive, emotional, and behavioral effects. According to Alaska Trauma Registry data, between 2004 and 2008, 51 North Slope residents were hospitalized with TBI.<sup>1</sup> Of these, 14 hospitalizations were the result of falls, 13 were caused by snowmachine or all-terrain vehicles, and 5 were the result of traffic accidents.<sup>1</sup>

The incidence rate of TBI in Alaska is 28% higher than the national rate. Rural regions typically have the highest rates; Alaska Natives have significantly higher rates than other racial groups. Males of all ages have higher rates than females, and males ages 15–24 years are at the highest risk.<sup>3</sup>

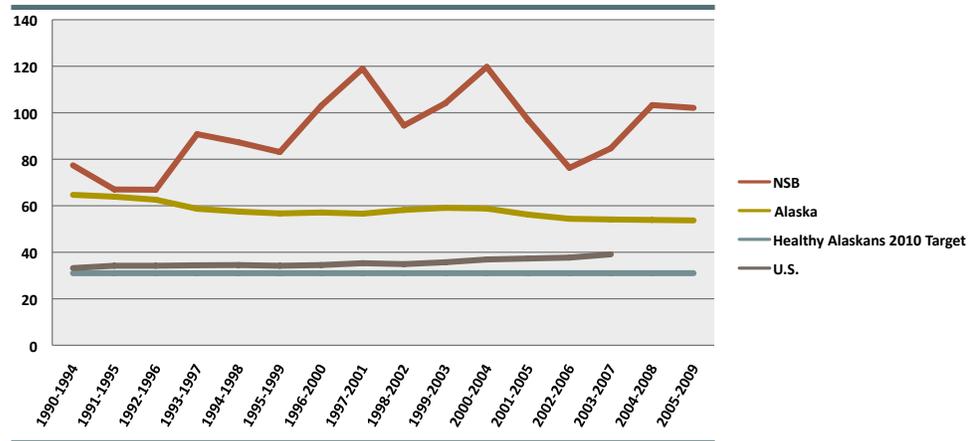
## 3.1.2. Unintentional Injury

Unintentional injuries include all injuries for which the harmful outcome was not intended. Some examples include motor vehicle injuries and falls. At times, it is difficult to determine whether an injury was truly unintentional, particularly when the injury results in death of the victim.

### 3.1.2.1. Unintentional Injury Mortality

Whereas rates have declined since the 1970s, death rates from unintentional injury remain higher in the NSB than statewide and national rates and Healthy Alaskans 2010 targets.<sup>6</sup> Unintentional injury is the leading cause of premature death in the NSB<sup>6</sup> and the leading cause of death among Alaska Native children statewide.<sup>2</sup>

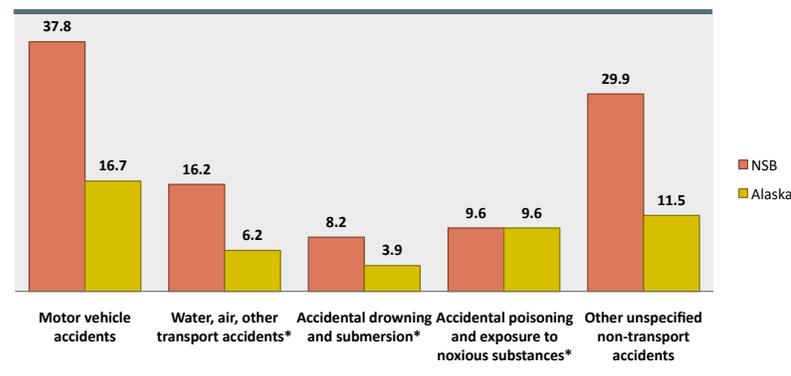
**Figure 3.5: Unintentional Injury Mortality Rates: Average annual number of deaths per 100,000 population, 1990–2009**



NSB and Alaska data source: Alaska Bureau of Vital Statistics.  
 U.S. data source: National Center for Health Statistics, *Health, United States 2008*, and *Health, United States, 2007, with Chartbook on Trends in the Health of Americans*.  
 All rates are age-adjusted to 2000 U.S. standard population.  
 U.S. rates are for the single, midpoint of the five-year period noted.

The largest single cause of unintentional injury death in the NSB is motor vehicle accidents, including both on- and off-road, and the mortality rate from motor vehicle accidents is more than twice the statewide rate.<sup>6</sup>

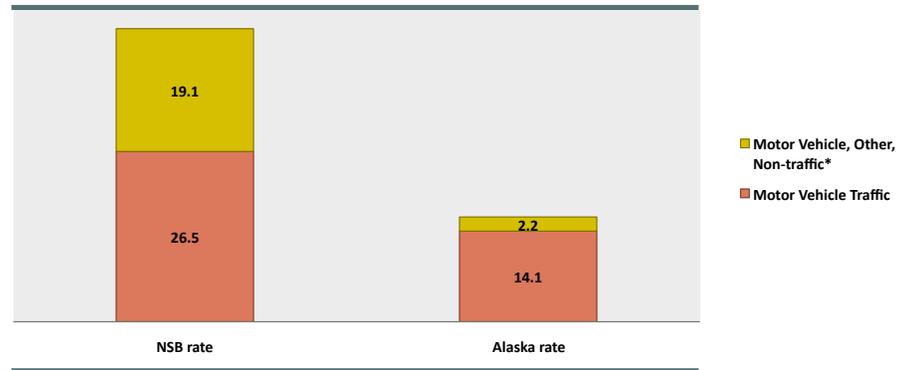
**Figure 3.6: Unintentional Injury Death Rates, by Cause: Deaths per 100,000 population, 1994–2008**



Data source: Alaska Bureau of Vital Statistics.  
 \*Rates for NSB are based on fewer than 20 events and should be used with caution.  
 Motor vehicle accidents includes both on- and off-road accidents. Rates for the following were based on fewer than 6 events and are not reported: accidental discharge of firearms, accidental exposure to smoke, fire, and flames. There were no deaths reported in the NSB during this time period from falls.

ATV and snowmachine injuries may be categorized as “traffic” or “non-traffic,” depending on the location of the accident. From 1999 through 2008, there were 16 deaths in the NSB from off-road vehicles, with five ATV-related deaths, and 11 snowmachine-related deaths. During this period, non-traffic motor vehicle accidents occurred at almost 10 times the statewide rate.<sup>6</sup>

**Figure 3.7: Motor Vehicle Accidental Death Rates: Average annual number of deaths per 100,000 population, 1999–2008**



\*Motor Vehicle, Other, non-traffic are accidents occurring away from the highway and include snowmachines and ATVs (4-wheelers). A minority of snowmachine- and ATV-related deaths are also categorized as "Motor Vehicle Traffic" if they occurred on the highway.

Data source: Alaska Bureau of Vital Statistics.

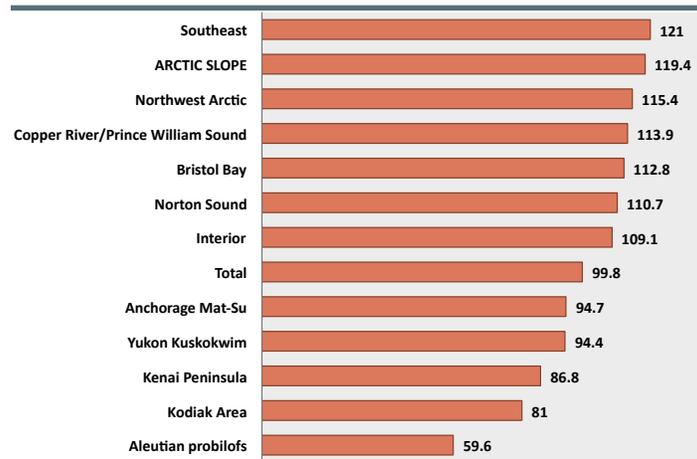
Rates are age-adjusted to 2000 U.S. standard population.

NSB rates are based on fewer than 20 occurrences and should be interpreted with caution.

### 3.1.2.2. Unintentional Injury Hospitalization

Between 1991 and 2003, the North Slope (referred to in the source report as Arctic Slope) had the second highest rates of unintentional injury hospitalization of all Alaska Native Health Service regions.<sup>2</sup>

**Figure 3.8: Alaska Native Unintentional Injury Hospitalization Rate, by Region: Hospitalizations per 10,000 persons, 1991–2003**



\*Data include Alaska Native only, and include all NSB villages, including Anaktuvuk Pass and Point Hope.

Data source: *Alaska Native Injury Atlas of Mortality and Morbidity*, January 2008.

Unintentional Injury Hospitalization Among Children: In 2001–2006, the North Slope had the third highest regional rate of unintentional injury hospitalization for children in the state. The rate in the North Slope was twice the statewide rate (82/10,000 vs. 41/10,000).<sup>4</sup> Between 1991 and 2003, the leading causes of unintentional injury hospitalization among Alaska Native children in the North Slope were falls, ATV, snowmachine, other motor vehicle, and poisoning.<sup>5</sup>

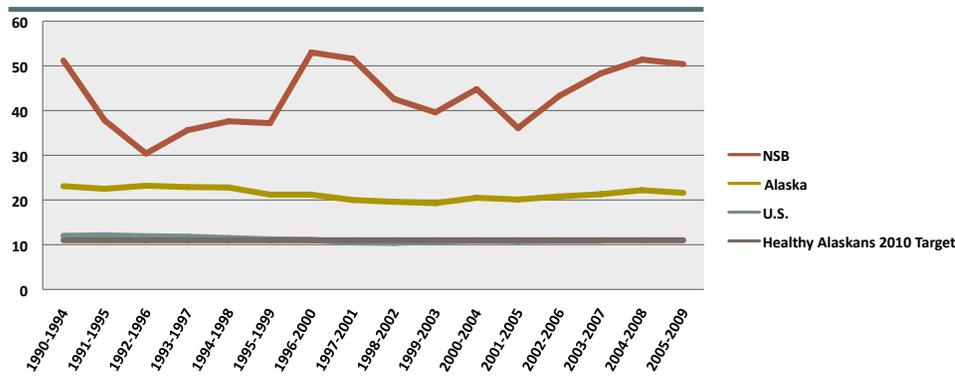
### 3.1.3. Intentional Self-Harm: Suicide

#### 3.1.3.1. Suicide Mortality

##### Suicide Rate Trends

Suicide was the fourth leading cause of death in the NSB in 2006–2008. After a period of increasing rates through the 1980s, suicide rates appear to have roughly leveled off (although they fluctuate from year to year) in the NSB. They have remained a leading cause of death in the NSB for over two decades. Since 1990, age-adjusted suicide mortality rates in the NSB have averaged twice the statewide average and four times the national average. More than two-thirds of the completed suicides occurring on the North Slope since 2000 have been by use of firearms.<sup>6</sup>

**Figure 3.9: Suicide Mortality Rates: Average annual number of deaths per 100,000 population, 1990–2009**



\*NSB rates are based on fewer than 20 occurrences per time period and must be interpreted with caution.

All rates are age-adjusted to the 2000 U.S. standard population.

U.S. rates are for the single, midpoint year of the five-year period noted.

NSB and Alaska data source: Alaska Bureau of Vital Statistics.

U.S. data source: National Center for Health Statistics: *Health, United States 2007, with Chartbook on Trends in the Health of Americans* and *Health, United States 2008*.

##### Suicide Rates: Regional Comparison

Suicide rates vary considerably among different regions in Alaska. From 1990 through 2006, the northern and western regions of the state had the highest suicide rates, while the Aleutians and southeastern regions had the lowest.<sup>7</sup> In 2007–2009, the average suicide rate in the NSB was the 6th highest among Alaskan boroughs and/or census areas.<sup>6</sup> Specific rankings must be viewed with caution, however, because of the small number of events, from a statistical standpoint.

**Table 3.1: Age-Adjusted Suicide Rates, by Borough and/or Census Area, 2007–2009**

Northwest Arctic	67.5
Wade Hampton	62.8*
Bethel	61.6
Yukon-Koyukuk	60.2*
Nome	53.8
North Slope	43.6
Dillingham	42.4*
Ketchikan Gateway	33.5*
Sitka	24.7*
Matanuska-Susitna	23.2
Kodiak Island	23.1
Kenai Peninsula	22.8

Table 3.1, continued

ALASKA, all census areas	22.7
Fairbanks North Star	21.7
Juneau	21.5*
Valdez-Cordova	20.9*
Anchorage	16.2

Data source: Alaska Bureau of Vital Statistics.

All rates are per 100,000 population, age-adjusted to 2000 U.S. standard population.

\*Rates based on fewer than 20 occurrences are statistically unreliable and should be used with caution.

Rates are not reported for boroughs and/or census areas with fewer than 6 occurrences in this time period: These areas included Aleutians East, Aleutians West, Bristol Bay, Denali, Haines, Lake and Peninsula, Prince of Wales-Outer Ketchikan, Skagway-Hoonah-Angoon, Southeast Fairbanks, Wrangell-Petersburg, and Yakutat.

### 3.1.3.2. Suicide Attempts and Suicidal Thoughts

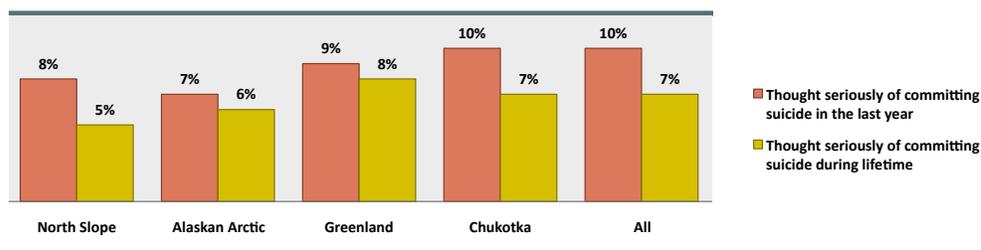
#### Suicide Attempt Hospitalization Rates

Between 1999 and 2008, 113 NSB residents were hospitalized for intentional self-harm and/or suicide attempts. Suicide attempt was the second leading cause of non-fatal injury hospitalization. As shown in Figure 3.1, the suicide hospitalization rate for NSB residents overall was higher than the Alaska rate (17 vs. 10 per 10,000, respectively), but among AI/AN, the NSB rate was lower than that of AI/AN residents statewide (22 vs. 27 per 10,000, respectively).<sup>1</sup> The average number of suicide attempt hospitalizations among AI/AN residents of the NSB—approximately 11 hospitalizations per year—was similar during the periods 1991–2003 and 1999–2008.<sup>1,5</sup>

#### Suicidal Thoughts Among NSB Adults

The Survey of Living Conditions in the Arctic survey collected some data on suicidal thoughts among indigenous residents of circumpolar regions, all of which suffer from high rates of suicide. Compared with the other arctic indigenous regions surveyed, Iñupiat adults in the NSB had a similar likelihood of reporting a history of serious suicidal thoughts, both in the past year and during their lifetimes.<sup>8</sup>

Figure 3.10: Suicidal Thoughts Among Circumpolar Indigenous Populations



Data source: Poppel, 2007, SLICA results (includes Iñupiat/arctic indigenous residents aged 16 years and older).

Data were not available for Canada for this question.

According to study authors, differences of 10 percentage points or more between groups are likely to be significant.

#### Self-Reported Suicidal Thoughts and Suicide Attempts Among NSB Youth

Adolescents and young adults, particularly Alaska Natives, are at the highest risk of dying from suicide in Alaska. Between 1991 and 2003, suicide attempt was the third leading cause of nonfatal injury hospitalization of North Slope Alaska Natives aged 0–19 years.<sup>5</sup>

According to 2005 Youth Risk Behavior Surveillance (YRBS) survey data, 16% of NSB high school students had seriously considered attempting suicide in the past 12 months. They were not, however, more likely to report seriously considering suicide than were their counterparts statewide or nationally.<sup>9</sup>

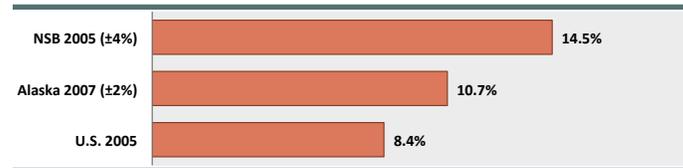
**Figure 3.11: Percent of High School Students Who Seriously Considered Attempting Suicide During the Past 12 Months**



Data source: 2005 and 2007 YRBS

NSB high school students were, however, significantly more likely to have actually attempted suicide one or more times during the past year than were high school students in the nationwide sample.<sup>9</sup>

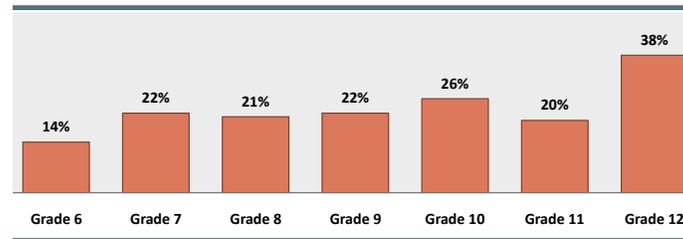
**Figure 3.12: Percent of Students Who Actually Attempted Suicide One or More Times During the Past 12 Months**



Data source: 2005 and 2007 YRBS

Among youth, suicidal thoughts and attempts are common. In a 2004 student survey, more than one in three NSB 12th graders reported having attempted suicide at least once in their lifetimes.<sup>10</sup>

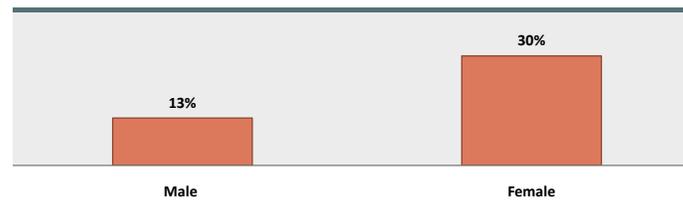
**Figure 3.13: History of Suicide Attempts Among NSB Students, by Grade Level: Percent of students who report ever having attempted suicide**



Data source: 2004 NSB Developmental Youth Assets Survey.

Although males are more likely to complete suicides, suicide attempts are more common among female students.<sup>10</sup> This pattern is seen throughout the U.S.

**Figure 3.14: History of Suicide Attempt Among NSB Students, by Gender: Percent of students who report ever having attempted suicide**



Data source: NSB Developmental Youth Assets Survey

### 3.1.3.3. Suicide in the NSB, in Context

Suicide is a complicated phenomenon and one with devastating effects on families and communities. In 2004, the suicide rate in Alaska was more than double that of the rate in the U.S., giving it the highest rates in the U.S.,<sup>7</sup> and rates have not declined in the last decade.<sup>11</sup> The northern and western rural regions of the state are most severely impacted.<sup>11</sup> The age distribution of suicides in Alaska is also quite different than the national age distribution. In Alaska, young people aged 15–24 years have the highest risk of suicide. In 2009, the suicide rate for young men aged 15–24 years was 56 per 100,000, compared with an overall rate of 20 per 100,000.<sup>11</sup> The suicide rate among young men is more than three times that of young women. By contrast, in the U.S. overall, older persons are disproportionately more likely to die of suicide.<sup>12</sup>

Suicide is also an area of significant racial disparity. Suicide rates among Alaska Native peoples are higher than for any other ethnicity in the state and roughly twice the rate among white Alaskans.<sup>11</sup> This disparity is especially evident among Alaska Native males in the 15- to 24-year-old age group, who have a staggering suicide rate of 142 per 100,000.<sup>11</sup> According to one study, Alaska Native males have the highest documented suicide rates in the world.<sup>13</sup> This racial disparity in suicide rates appears to have developed in the second half of the 20th century.<sup>14</sup> In the 1950s, Alaska Natives had a suicide rate that was considerably lower than that of non-native Alaskans.<sup>15</sup> Since 1960, the incidence of suicide among Alaska Natives has increased 500%, almost tripling in the 1960s and 1970s,<sup>16</sup> then essentially leveling off at roughly twice statewide and four times national rates. Similar but even more dramatic increases in suicide have occurred among other circumpolar indigenous populations in the past 20–30 years, again reflecting an epidemic rise in suicide among northern indigenous youth.<sup>14</sup>

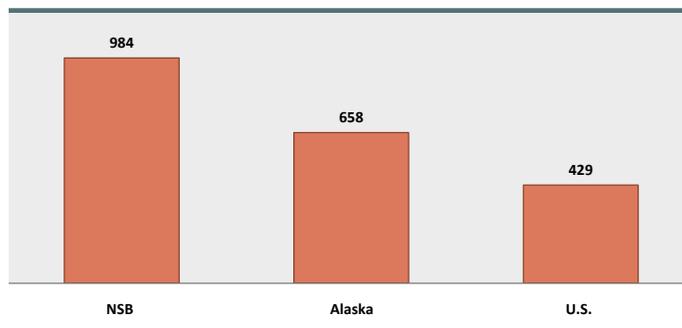
## 3.1.4. Intentional Harm to Others: Assault, Homicide, Sexual Assault, and Domestic Violence

### 3.1.4.1. Assault, Homicide and Violent Crime Overall

Assault is the most common offense reported to local law enforcement in the NSB. Between 2000 and 2009, there were 2525 assaults, including both simple and aggravated assault, reported to the NSB Police Department. The rate of assaults in reported in the NSB has not changed appreciably since 2000. Between 2000 and 2008, there were six deaths caused by homicide in the NSB.<sup>6</sup> Half of these homicides were by the use of firearms.<sup>6</sup>

During 2006–2009, the average annual violent crime rate in the NSB (including murder and non-negligent manslaughter, robbery, forcible rape, and aggravated assault) was higher than both the Alaska and U.S. rates.<sup>17</sup> *Crime rate comparisons must be made with extreme caution, however, because of the many factors that influence crime rates, such as the age composition of the population and local law enforcement and reporting practices.*

**Figure 3.15: Violent Crime:\*** Average violent crime rate per 100,000 inhabitants, 2006–2009



\*Includes murder and non-negligent manslaughter, robbery, forcible rape, and aggravated assault (an unlawful attack by one person upon another for the purpose of inflicting severe or aggravated bodily injury).  
Data source: FBI Uniform Crime Reports

### 3.1.4.2. Sexual Assault

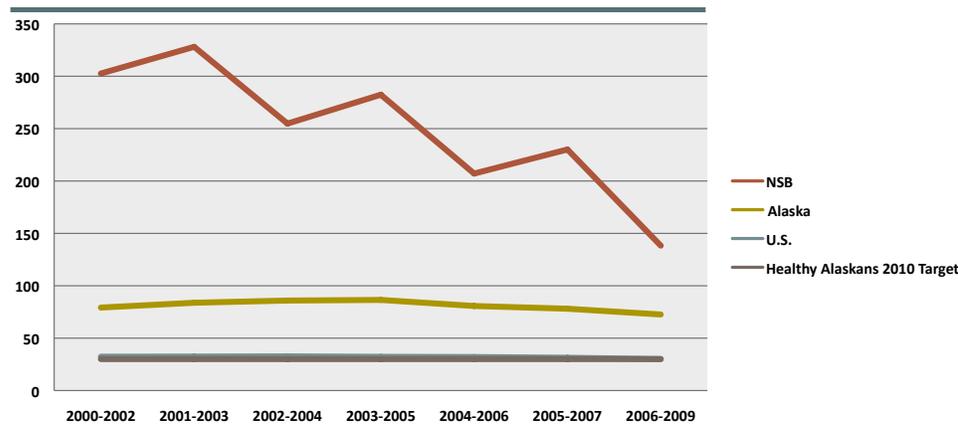
Sexual assault is defined as any sexual contact without consent. Official crime statistics collected at the state and national level include primarily rape and attempted rape by force. Whereas these statistics are important, they underestimate the actual number of cases of sexual assault significantly, as many incidents of sexual assault do not meet the strict this strict case definition. Statutory rape (without force) and other sex offenses are not included in rape rates. Moreover, many victims who have experienced a sexual assault do not report the incident to authorities, particularly when alcohol or drugs have impaired one’s ability to give consent or recall details of the event.

Alaska has the highest rate of forcible rape in the country and has for much of the last three decades.<sup>17</sup> The Alaska rape rate is 2.5 times the national average.<sup>17</sup> In a 2010 telephone survey of English-speaking adult Alaskan women, 37% of women reported experiencing sexual violence and 26% reported experiencing forcible sexual assault in their lifetime. In the same survey, 4.3% of women reported experiencing sexual violence and 2.5% reported experiencing forcible sexual assault in the past year.<sup>18</sup> These past-year estimates are 10- to 20-fold higher than the official annual forcible rape rate for Alaska based on crime reports, highlighting both the problem of underreporting and the scope of sexual violence in Alaska. Sexual assault is also an area of racial disparity. Alaska Native and Native American women are 2.5 times as likely to be raped or sexually assaulted as are other women in the U.S.<sup>19</sup>

#### Forcible Rape: Data from the Uniform Crime Reporting System

According to the Uniform Crime Reporting surveillance system, between 2000 and 2009, the number of rapes reported to the NSB Police Department has ranged from one to 29 per year, averaging 16.5 cases/year for this time period. Multi-year average rates have decreased over this decade but remain higher than state and national rates.<sup>17,20</sup>

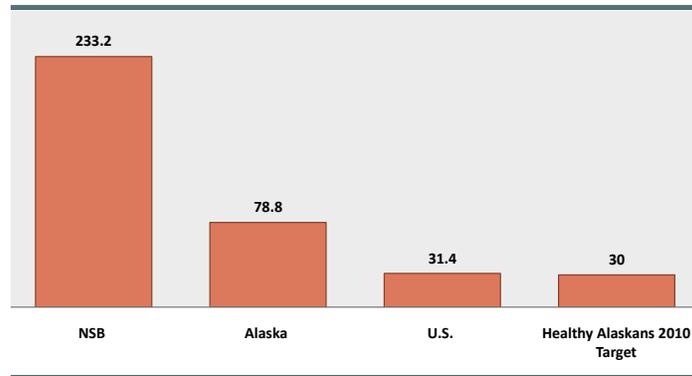
**Figure 3.16: Rates of Forcible Rapes Known to Local Law Enforcement: Number of offenses reported per 100,000 inhabitants, 2000–2009**



Data sources: Uniform Crime Reporting Program, U.S. Department of Justice and Federal Bureau of Investigation, and Public Safety Statewide Services, *Crime Reported in Alaska, Annual Reports*.  
 Forcible rape includes rape by force and attempted rape by force.  
 Rates are per 100,000 total population, not age-adjusted.  
 The 2000–2009 rates for the NSB were calculated using the Alaska Department of Labor and Workforce Development total population estimates for the NSB.

According to statistics collected by the Uniform Crime Reporting surveillance system, the average rate of forcible rape in the NSB between 2000 and 2009 was roughly three times the Alaska rate and more than seven times the U.S. rate for the same period. Such rate comparisons must be made with caution, particularly given the small population of the NSB.<sup>17</sup> Although many variables affect crime and reporting rates in a community—including such factors as the demographic composition of the population, local law enforcement resources, economic and cultural factors, and citizen reporting practices—the data clearly suggest a disproportionate burden of sexual assault in the NSB, compared with state and national populations.

**Figure 3.17: Forcible Rape: 10-year average rate per 100,000 inhabitants, 2000–2009**



Uniform Crime Reporting Program, U.S. Department of Justice and Federal Bureau of Investigation and Public Safety Statewide Services, *Crime Reported in Alaska, Annual Reports*.

Forcible rape includes rape by force and attempted rape by force.

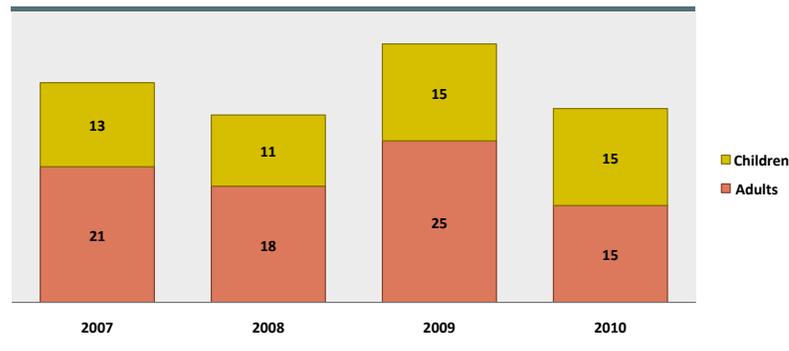
Rates are not age-adjusted.

The 2000–2009 average rate for the NSB was calculated using the Alaska Department of Labor and Workforce Development total population estimates for the NSB.

### Sexual Assault Statistics from the NSB Police Department

The NSB Police Department has provided information from their records on the total number of sexual assault cases reported annually in the NSB since 2007, both for adults and children. These statistics emphasize the large proportion of cases in the NSB that involve children.

**Figure 3.18: Number of Sexual Assault Cases Reported to NSB Police Department, 2007–2010**



Data source: NSB Police Department.

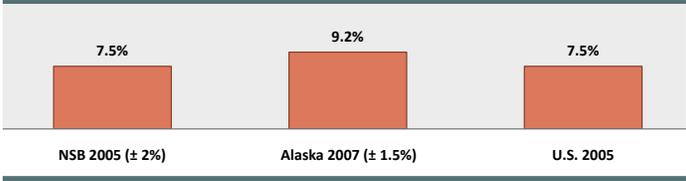
### Sexual Assault Experience Among Adults: Data from BRFSS

In 2004–2006, the most recent years for which local data were available for this report, 9.3% (C.I. 4.0–20.1%) of the 73 adult NSB residents surveyed (including both men and women) reported that they had, at some time in their lives, been made to take part in sexual activity when they did not want to.<sup>24</sup>

### Youth Sexual Assault Rate Estimates: Data from the 2005 YRBS Survey

In 2005, 7.5% of NSB high school students reported having been forced to have sex when they didn't want to at some point in their lives. The percentage of NSB students reporting forced sexual intercourse was not significantly different from state and national estimates.<sup>9</sup>

**Figure 3.19: Sexual Assault Among NSB High School Students:**  
*Percentage of students who have ever been forced to have sexual intercourse when they did not want to*



Data source: 2005 and 2007 YRBS

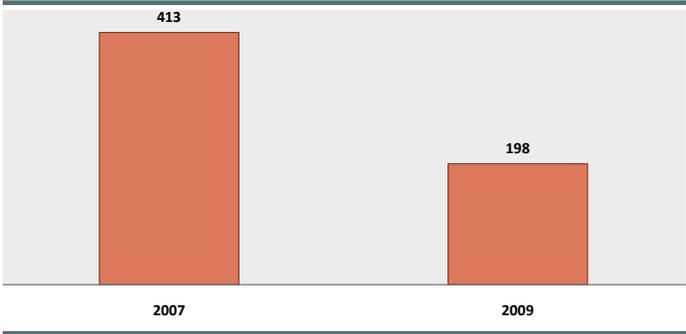
### 3.1.4.3. Domestic Violence

Domestic violence, also referred to as intimate partner violence, is the greatest single cause of injury to women nationwide. In a 2010 telephone survey of English-speaking Alaskan adult women, 47.8% of women reported having experienced intimate partner violence (including both threats and physical violence) in their lifetimes, and 9.4% reported experiencing intimate partner violence in the past year.<sup>18</sup> Domestic violence is also an area of racial health disparity, with Alaska Natives reporting experiencing higher rates of lifetime intimate partner violence than white Alaskans.<sup>22</sup>

#### Domestic Violence Reported to Local Law Enforcement Agencies

Alaska does not currently collect standardized data on domestic violence incidents reported to local law enforcement agencies. According to information provided by the NSB Police Department for this report, the number of domestic violence calls to which the department responds can vary quite dramatically from year to year. Moreover, these statistics are not systematically tracked, and the wide variation in the two years of data provided raise questions about the reliability of this data.

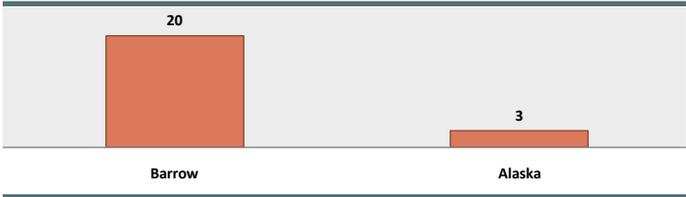
**Figure 3.20: Number of Domestic Violence Calls Responded to by the NSB Police Department,\* 2007–2009**



\*Numbers for other years were not available for this report.  
Data source: NSB Police Department.

In a 2003 analysis of domestic violence in the NSB, rates of reports of domestic violence to Barrow police were found to be more than six times the rate of reports made to Alaska state troopers statewide.<sup>23</sup> Again, these reports represent only a fraction of domestic violence occurrences, however, as many victims do not report their victimization to authorities.

**Figure 3.21: Reports of Domestic Violence to Local Law Enforcement Agencies: Reports per 1000 persons, 2003**



Data source: Domestic Violence Impact and Needs in North Slope Borough Communities Report 2003

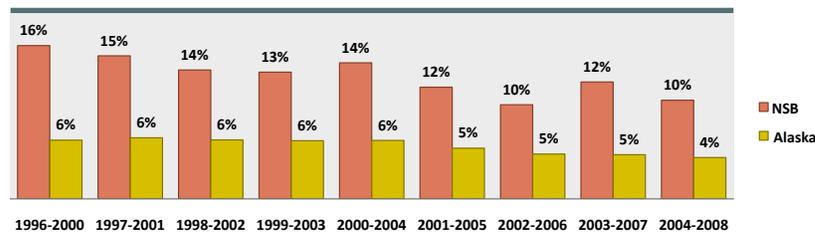
## Self-Reported Experience of Domestic Violence: Data from BRFSS

In 2004–2006, the most recent years for which local data were available for this report, 29% (C.I. 15.6–47.2%) of the 72 adults NSB residents surveyed (including both men and women) reported having been hit, hurt, or threatened by an intimate partner at some time in their lives. During 2004–2006, 9.4% of NSB survey respondents also reported fearing for their safety or being physically hurt by a current or former intimate partner within the past five years.<sup>24</sup>

## Pre-Pregnancy and Prenatal Physical Abuse

In an ongoing survey sampling women who have recently delivered infants, the Pregnancy Risk Assessment Monitoring System (PRAMS), women in the NSB were more than twice as likely as women state-wide to report physical abuse by a husband or partner during the 12 months before pregnancy.<sup>25</sup> Women in the northern region (including NSB, Northwest Arctic Borough, and Nome census areas) experienced the highest prevalence of pre-pregnancy physical abuse of all the regions studied. Women in the northern region were also the most likely to report having a controlling partner or one that made her feel unsafe.<sup>26</sup>

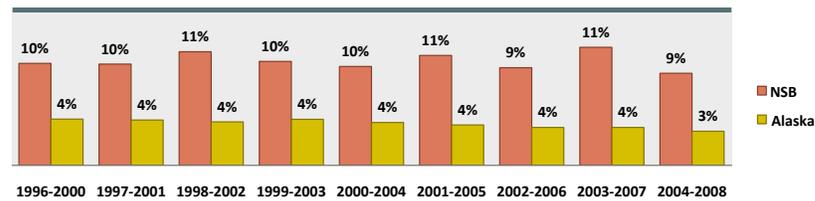
**Figure 3.22: Pre-Pregnancy Physical Abuse by Husband or Partner:** Percent of women delivering live infants who reported abuse during the 12 months before pregnancy, 1996–2008



Each five-year time period represents data from between 50 and 200 PRAMS survey respondents in the NSB. Data source: Alaska Pregnancy Risk Assessment Monitoring System (PRAMS), analysis and NSB data provided Alaska Department of Health and Social Services, Division of Public Health, Section of Women's, Children's and Family Health.

Women who are abused during pregnancy are at greater risk for poor pregnancy outcomes.<sup>26</sup> Women in the NSB experienced rates of prenatal physical abuse that were more than double rates in Alaska overall. During the period of 1996–2008, roughly one in 10 women in the NSB who delivered live births reported experiencing physical abuse by their husband or partner during pregnancy.<sup>25</sup>

**Figure 3.23: Prenatal Physical Abuse by Husband or Partner:** Percent of women delivering live infants who reported abuse during pregnancy, 1996–2008

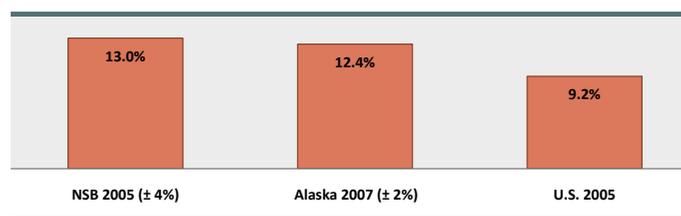


Each five-year time period represents data from between 50 and 200 PRAMS survey respondents in the NSB. Data source: Alaska Pregnancy Risk Assessment Monitoring System (PRAMS), analysis and NSB data provided Alaska Department of Health and Social Services, Division of Public Health, Section of Women's, Children's and Family Health.

## Intimate Partner Violence Among Youth: Data from the 2005 YRBS Survey

In the 2005 YRBS survey, 13% of NSB high school students reported intimate partner violence in the past 12 months, compared to 9% of students nationwide. This difference was of borderline statistical significance.<sup>9</sup>

**Figure 3.24: Intimate Partner Violence Among High School Students:** *Percent of students who were ever hit, slapped, or physically hurt on purpose by their boyfriend or girlfriend in the past 12 months*



Data source: 2005 and 2007 YRBS

## 3.2. Determinants of Injury

Accidental injury, suicide, intimate partner violence, rape, and other types of assault occur in the context of specific sociocultural and physical environments that shape human behavior. Although they are separate phenomena, these different types of injury share a number of behavioral and environmental risk factors.

### 3.2.1. Alcohol and Substance Abuse

**Alcohol and drugs** play major roles in unintentional injury, suicide, intimate partner violence, and sexual and other types of assault. Alcohol and drug use statistics for the NSB are presented in Chapter 7: Mental and Behavioral Health, section 7.14.

- Among North Slope residents, 34% of all injury hospitalizations were recorded as alcohol-related,<sup>1</sup> and 63% of assault injuries were documented to be alcohol-related (among Alaska Natives).<sup>5</sup> Among Alaska Natives statewide, 40% of snowmachine-related, 45% of motor vehicle, and 30% of all ATV-related injury hospitalizations were recorded as alcohol-related.<sup>2</sup> Among Alaska Natives statewide, 57% of all hospitalized suicide attempts were recorded as alcohol-related.<sup>2</sup> These estimates are based on documentation of a positive blood alcohol test or breathalyzer result, and it is believed that they underestimate the true number of alcohol-related injuries.
- Alcohol is estimated to contribute to 85% of domestic violence cases and 80% of reported sexual assault cases statewide among Alaska Natives.<sup>27</sup>
- Among 325 suicide cases statewide where investigating officers noted the presence or absence of alcohol or drug use, 61% of the cases involved drugs or alcohol. Among the 31% of cases where toxicology testing was performed, 72% of suicide victims tested positive for alcohol or drugs. This proportion was the same among Alaska Natives and non-Natives.<sup>7</sup>
- According to the NSB Police Department, of the 11 suicides occurring in Barrow between 2004 and 2009, four were documented to be alcohol-related.<sup>21</sup>
- In a 2007 study, suicide victims were found to be 22 times more likely than controls to have been treated for an alcohol-related visit in the 12 months prior to suicide, and most of these involved treatment for another injury.<sup>28</sup>
- Among Alaska Natives statewide, alcohol was involved in 59% of domestic violence incidents reported to troopers in 2004.<sup>29</sup>

Evidence from multiple studies suggests that more restrictive alcohol policies in Alaskan communities are associated with lower rates of alcohol-related injuries.<sup>30-34</sup> While causation cannot be determined from the injury hospitalization trends shown in Figure 3.4, it is notable that, between 1991 and 2008, the lowest number of injury hospitalizations among NSB residents occurred in 1995, during the brief period that alcohol importation was banned in Barrow.

### 3.2.2. Economic, Social, and Cultural Factors

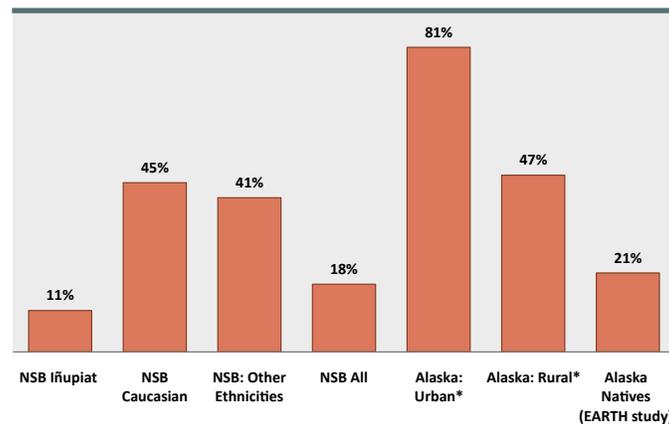
Sociocultural environment has a powerful effect on injury risk. Stress, lack of social support, cultural shifts, traumatic experiences, poverty, discrimination, and disempowerment all contribute to the environments in which suicide, accidents, and intentional harm to others are more likely to occur.<sup>15</sup> Many of these economic, social and cultural factors in the NSB are discussed in Chapter 1. Social norms around safety practices, alcohol and drug consumption, the treatment of women, parenting and child supervision, suicide, and violence can also influence how people behave and influence the risk of injury.

- Early childhood environment: As injury is the leading cause of child death in Alaska, the early childhood environment is crucial in preventing these events. Moreover, negative experiences in early childhood—such as neglect, abuse, alcohol or drug problems in the home, experiences of discrimination—increase the risk of suicide.<sup>35</sup> Persons who have witnessed intimate partner violence of a parent or guardian are also more likely to experience domestic violence themselves.<sup>36</sup>
- Income and education: Those with an educational level of high school graduate or less are significantly more likely to experience intimate partner violence in their lifetime than is a college graduate. Being poor or “near poor” (<200% of poverty level) is also a risk factor for domestic violence.<sup>36</sup>
- Subsistence way of life: Subsistence activities carry inherent risks, injury foremost among them. Hunting and whaling accidents have been known to Iñupiat for many generations. These risks are mitigated, however, through the use of traditional knowledge and the passing on of traditional skills to each generation.

### 3.2.3. Safety Practices

- Access to loaded firearms: Firearms are the most common mechanism used in completed suicides in Alaska, followed by suffocation (including hanging or strangulation), and poisoning. This was true for both Alaska Natives and non-Natives.<sup>7</sup> In 2005–2007, 4.2% of adults surveyed in the NSB stated that there were loaded, unlocked firearms in the house.<sup>24</sup>
- Helmet use: Helmets have been shown prevent a significant proportion of traumatic brain injuries from off-road vehicle accidents.<sup>37</sup> In the 2010 NSB Census, only 18% of NSB household heads reported wearing a helmet when riding a snowmachine or four-wheeler,<sup>38</sup> compared to 57% of adults state-wide (snowmachine helmets only, as measured in a separate helmet observation study),<sup>38</sup> and 21% of Alaska Natives surveyed in other regions.<sup>39</sup> Iñupiat household heads were significantly less likely to report helmet use than were Caucasians or those of other ethnicities, and this association was statistically significant in all age groups except for 65+, where the number of non-Iñupiat riders was very small.<sup>39</sup>

**Figure 3.25: Percent of Adults Who Wear a Helmet When Riding a Snowmachine or Four-Wheeler**



\*Observed snowmachine helmet use.

NSB data source: 2010 NSB Census.

Alaska data source: Alaska Department of Health and Social Services. Snow Machine Rider Helmet Observation Study. (2006).

Alaska Native data source: Redwood, D.G., K.D. Hagan, R.D. Perkins, H.B. Stafford, L. J. Orell, and A.P. Lanier. Safety behaviors among Alaska Native and American Indian people living in Alaska. *Injury Prevention* 15, no. 1 (2009): 30–35.

- **Seatbelt use:** Seatbelts have been shown to reduce injury and death from motor vehicle accidents. In the 2005 YRBS survey, 63% of NSB high school students surveyed stated that they never or rarely wore a seatbelt when riding in a car driven by someone else, compared with only 10% in national (2005) and 7% in statewide (2007) samples.<sup>9</sup> In the early to mid-1990s, the most recent years for which adult data are available, roughly one-third of NSB adults reported never or seldom using a seatbelt.<sup>24</sup>
- **Other safety practices:** Other safety practices impacting injury rates include the use of personal flotation devices and boating safety practices, use of smoke and carbon monoxide detectors, and workplace safety monitoring and enforcement. The NSB Fire Department has been actively involved in fire prevention and improving home safety in the NSB.

### 3.2.4. Physical Environment

- The physical environment in northern Alaska is harsh, and cold-related injuries such as frostbite and hypothermia are an ever-present risk in the arctic winter.
- Climate change may increase injury risk through impacts on sea and ice stability and decreased predictability of weather patterns.
- Industrial activity has the potential to increase injury risk through displacement of subsistence species to areas farther from villages, resulting in longer travel distances for subsistence hunting.
- Some have theorized that the long, dark winters play a role in suicides in Alaska, however, an analysis of suicide death data showed no seasonal or monthly pattern emerging over a 17-year period.<sup>7</sup>

### 3.2.5. Availability of Local Law Enforcement, Public Safety, Criminal Justice Services, and Tribal Courts

Effective local law enforcement can enhance community safety and help prevent both unintentional and intentional injury.<sup>32</sup> Municipal and borough police departments exist only in those communities with the economic resources to support them. Many villages in rural Alaska rely on Village Public Safety Officers (VPSO), typically local residents who engage in crime prevention and basic law enforcement under Alaska State Trooper oversight after a minimum of six weeks of training. A number of rural Alaska villages are either periodically or regularly without any local law enforcement personnel.<sup>41</sup>

- The NSB Police Department is the second largest municipal law enforcement agency in Alaska, providing services to over 12,000 people, including the oil industrial complex at Prudhoe Bay.<sup>41</sup> The NSB Police Department provides officers, on a rotating basis, to all the communities of the NSB.<sup>42</sup>
- The Native Village of Barrow established a Tribal Court in 2001. Among other issues, the Tribal Court seeks to address drug and alcohol abuse among juveniles utilizing traditional cultural values.<sup>43</sup>

## Chapter 3 Endnotes

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