Women's, Children's, & Family Health

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Child and Adolescent Mortality and Injury in Alaska

In Alaska and in the United States, the leading manner of death among children, regardless of age or sex, is unintentional injury. The most common causes of unintentional injury deaths among children are motor vehicle crashes, drowning, and fires. Over the last decade, child mortality rates for unintentional injury declined in Alaska and in the nation. With over one-half of all child mortality attributable to unintentional injury, the majority of deaths to Alaskan children could be prevented.

Teenagers in Alaska and the nation have higher unintentional injury mortality rates than any other age group. Nationally, unintentional injury accounts for 52% of deaths among teens ages 15 - 19 years with the leading cause of death being motor vehicle crashes.

Seriousness

Healthy People 2010 Targets and National Data

Indicator	Alaska 2001-03†	Nation 2002^	Healthy People 2010 Goal*
Overall Mortality			
Child mortality, ages 1-4 years rate per 100,000 population	41.7	31.2	18.6
Child mortality, ages 5-9 years rate per 100,000 population	16.6	15.2	12.3
Adolescent mortality, ages 10-14 years rate per 100,000 population	41.7	19.5	16.8
Teen mortality, ages 15-19 years rate per 100,000 population	100	67.8	39.8

- Alaska's mortality rate for children ages 1-4 years is 34% higher than the national rate and almost 2 times the Healthy People 2010 (HP2010) target.
- Alaska's mortality rate for children ages 5-9 years is 9% higher than the national rate and almost 1.3 times the HP2010 target.
- Alaska's adolescent mortality rate is more than 2 times the national rate and almost 2.5 times the HP2010 target.
- Alaska's teen mortality is 47% higher than the national rate and 2.5 times the HP2010 target.

Indicator	Alaska 2001-03†	Nation 2002^
Unintentional Injury		
Child mortality, ages 1-4 years, due to unintentional injury rate per 100,000 population	18.0	10.5
Child mortality, ages 5-9 years, due to unintentional injury rate per 100,000 population	7.7	5.9
Adolescent mortality, ages 10-14 years, due to unintentional injury rate per 100,000 population	19.1	7.3
Teen mortality, ages 15-19 years, due to unintentional injury rate per 100,000 population	39.2	35.0

- Alaska's unintentional injury mortality rates are 71% higher among 1-4 year-olds and 31% higher among 5-9 year-olds compared to national rates.
- Among adolescents, Alaska's unintentional injury mortality rate is 2.6 times the national rate.
- Rates of unintentional injury mortality among teens are similar in Alaska and the Nation.

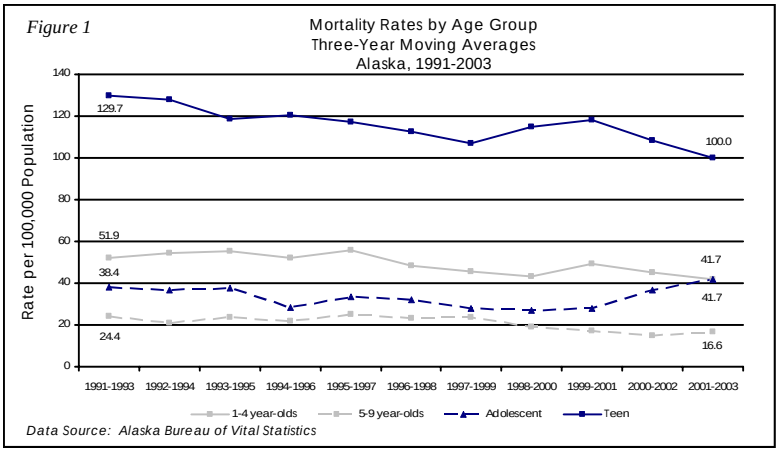
Severity

Falls are a leading cause of traumatic brain injury (TBI) among infants and children. Degree of disability resulting from a TBI can vary depending on force of impact and area of the brain that has been injured. A TBI may result in slight learning disabilities, retinal damage that causes loss of vision, mental retardation, cerebral palsy, or death.[1]

According to the CDC, more than 40% of children that receive emergency room care for non-fatal submersion require hospitalization and are at risk of brain damage which can result in long-term disabilities ranging from memory problems and learning disabilities to the permanent loss of basic functioning.[2]

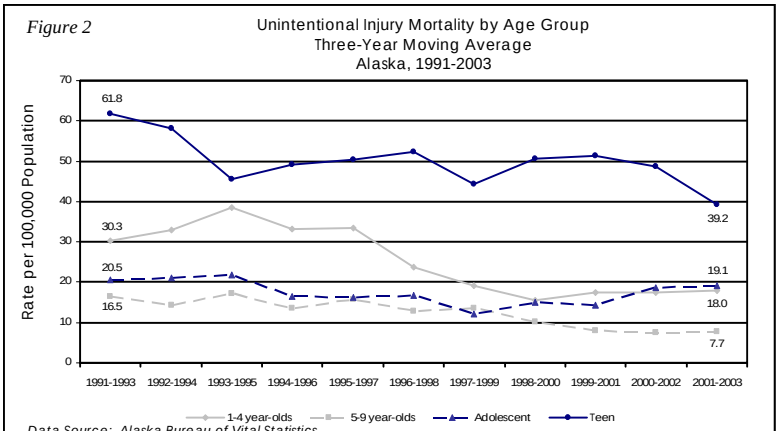
During 2001-2003, 49 Alaskan teens ages 15-19 committed suicide – a rate of 31 per 100,000 population. Suicide attempts were the most common cause of non-fatal hospitalizations among Alaskan teens (ages 15-19 years).[3]

Figure 1



Data Source: Alaska Bureau of Vital Statistics

Figure 2



Data Source: Alaska Bureau of Vital Statistics

Urgency

Children

- The leading manner of death for Alaskan children is unintentional injury, which accounted for 49.5% of deaths to children ages 1-4 years and 56.8% of deaths to children ages 5-9 years over the last decade.[4]

- After unintentional injury, the second leading manner of death for Alaskan children over the last decade was homicide.[4]

- During 1994-2003, the most common cause of unintentional injury mortality among Alaskan children was motor vehicle accidents. The second and third most common causes of unintentional injury mortality for Alaskan children were drowning and exposure to smoke, fire and flames.[4]

- During 1997-2001, falls were the leading cause of non-fatal hospitalizations among 1-4 year olds and 5-9 year olds in Alaska.[3]

Adolescents

- The leading manner of death among Alaskan adolescents over the last decade was unintentional injury, accounting for 50% of adolescent deaths. The second leading manner of death was suicide, which accounted for nearly 10% of adolescent mortality.[4]

- The leading cause of unintentional injury deaths to Alaskan adolescents over the last decade was motor vehicle crashes, accounting for 42% of unintentional injury deaths among adolescents. The second leading cause of adolescent mortality due to unintentional injury was drowning, accounting for 15% of deaths among Alaskan adolescents.[4]

- During 1997-2001, falls were the leading cause of non-fatal hospitalizations among 10-14 year olds in Alaska.[3]

Teens

- In 2001-2003, Alaska's unintentional injury mortality rates were 52.6 and 24.9 per 100,000 population for males and females in the 15 - 19 age group, respectively.[4]

- The leading cause of unintentional injury deaths to Alaskan teens over the last decade was motor vehicle crashes, accounting for more than one-half of all unintentional injury deaths and nearly one-fourth of overall deaths among teens ages 15 - 19 years. The second leading cause was drowning.[4]

- After unintentional injury, suicide and homicide are the most frequent manner of death for Alaskans ages 15 - 19 years. Alaska's suicide rate among teenagers is the highest in the Nation and has remained unchanged over the last decade.[4]

- The leading manner of death among Alaskan teens over the last decade was unintentional injury, accounting for 42% of deaths to teens ages 15-19 years. The second leading manner of death was suicide, accounting for 32% of deaths.[4]

- Teen homicide rates declined by over 50% over the last decade in Alaska. In 1998 - 2000, Alaska's homicide rate for ages 15-19 years was 1.7 times lower than the national rate for 2000.[5]

Disparities

Children

- During 1994-2003, Alaskan children ages 1-4 were 2.4 times as likely as children ages 5-9 to die due to assault.[4]

- During this 10-year period, Alaskan children ages 1-4 years were more likely to die from the following cause-specific unintentional in mortality compared to children ages 5-9 years: drowning was 1.7 times higher, death from exposure to smoke, fire and flames was 3 times higher, and death due to motor vehicle crashes was 2 times higher.[4]

Adolescents

- During 1994-2003, male adolescents were more than 3 times as likely as female adolescents to die from suicide and nearly 2 times as likely to die of assault.[4]

- During this 10-year period, male adolescents were 1.6 times more likely to die from unintentional injuries than females. Of unintentional injury deaths, they were 1.3 times as likely to die from motor vehicle crashes and 6 times as likely to die as a result of drowning compared to females in the same age group.[4]

Teens

- Male teens in Alaska are almost 4 times more likely to commit suicide and 3.2 times more likely to be a victim of homicide than females in the same age group. Alaska Native males are at greatest risk.[5]

- During 1998 - 2000, intentional injury mortality among teens ages 15-19 years in Alaska (45.8 per 100,000 population) was almost 3 times higher than the 2000 national rate (17.8 per 100,000).[5]

- Alaskan males in the 15-19 year-old age group were almost 2.6 times more likely to die from unintentional injuries than females during 1994-2003. Of unintentional injury deaths, male teens in Alaska were 2.1 times more likely to die from motor vehicle crashes and more than 20 times more likely to die as a result of drowning compared to females in the same age group.[4]

- The suicide rate for Alaska Native males ages 15-19 years during the period 1991 – 1999 (187 per 100,000) was 6 times higher than the rate for non-Native males.[5]

Economic Loss

Economic loss was not evaluated.

Interventions & Recommendations

There are several recommendations for preventing unintentional injury among infants, including: proper and regular use of child car seats; safe home environment for prevention of death and injury related to falls, drowning, choking, fire, and poisoning; increased access to poison control centers; ability of caregivers to recognize age appropriate foods and toys and provide CPR. The American Academy of Pediatrics recommends that pediatricians counsel parents about falls from windows, decks, fire escapes and age appropriate interventions to reduce the risk of drowning.[6,7]

The Task Force on Community Preventive Services (TFCPS) recommends two interventions to increase child safety seat use: laws mandating the use of child safety seats and programs that distribute child safety seats and educate parents about their use (Alaska currently has such laws and programs). They also recommended community-wide information and enforcement campaigns and incentive and education programs.[8]

Intervention Effectiveness

Reviews of published studies provide strong evidence of the effectiveness of the recommendations set forth by the TFCPS. Their review found that laws mandating the use of child safety seats was effective in decreasing fatal and nonfatal injuries, and in increasing child safety seat use. When correctly installed and used, child safety seats reduce the risk of death by 70% for infants and 47%-54% for toddlers and reduce the need for hospitalization by 69% for children aged 4 years and younger.[9]

Functional smoke alarms cut the chances of dying in a house fire by 40% to 50%. However, at least one-quarter of U.S. households lack working smoke alarms.

Capacity

Propriety

Promoting programs and behaviors that reduce child and adolescent mortality and injury is within the overall mission of the Women's, Children's, and Family Health Section. There are several national initiatives addressing injury and mortality (unintentional and intentional). The Maternal and Child Health Bureau requires that several mortality indicators for this population (intentional and unintentional) are monitored and assessed on a yearly basis.

Economic Feasibility

Research shows that it costs far less to prevent injuries than it does to treat them. According to the Association of State and Territorial Directors of Health Promotion and Public Health Education, every $1 spent on a smoke alarm saves $69 in fire related costs; every $1 spent on a child safety seat saves society $32; every $1 spent on poison control centers saves $7 on medical costs.

Acceptability
There are several successful state and national programs that promote injury prevention targeted toward children through community awareness.

Resources
Data: Alaska Trauma Registry and Alaska Bureau of Vital Statistics provide data for assessing and monitoring injury and mortality and can provide information on risk factors that can be used to target high-risk groups.

Legality
Not an issue.

References

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[5] Schoellhorn J, Wiens HN, Perham-Hester K. Alaska Maternal and Child Health Data Book 2003. Anchorage, AK: Maternal and Child Health Epidemiology Unit, Section of Maternal Child and Family Health, Division of Public Health, Department of Health and Social Services. June 2003.
[6] American Academy of Pediatrics. Committee on Injury and Poison Prevention. Falls From Heights: Windows, Roofs, and Balconies. PEDIATRICS: 107(5):1188-1191. May 2001.
[7] American Academy of Pediatrics. Policy Statement. Committee on Injury, Violence, and Poison Prevention. Prevention of Drowning in Infants, Children, and Adolescents. PEDIATRICS: 112(2). August 2003
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Data Sources

† Alaska Bureau of Vital Statistics, 2001-2003 Data. DHSS, DPH. January 2005.

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* Healthy People 2010. U.S. Department of Health and Human Services. Healthy People 2010. 2nd ed. With understanding and improving health and objectives for improving health. 2 Vols. Washington, DC: U.S. Government Printing Office. 2000.