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## Drowning Deaths in Alaska

### Background

A descriptive study on unintentional drowning deaths in Alaska during 2000–2006 found that the statewide average annual drowning rate was 8.9 per 100,000 persons, which was over seven times the national rate of 1.2 per 100,000 persons during that period.<sup>1,2</sup> During 2001–2010, Alaska experienced a statistically significant decline in drowning death rates among both adults and children (Figure 1);<sup>3</sup> however, in 2010 Alaska still had the highest drowning rate in the nation.<sup>2</sup> This *Bulletin* provides an update on drowning deaths in Alaska.

### Methods

Reports from the Alaska Drowning Surveillance System (AKDSS) were used to identify all drowning deaths in Alaska during 2007–2012. These reports were cross-referenced with the Alaska Violent Death Reporting System and the Alaska Occupational Injury databases. Population estimates from the Alaska Department of Labor and Workforce Development, Research and Analysis Section were used for denominators to calculate crude rates. The 2010 U.S. Census data were used for calculating age-adjusted rates.

### Results

During 2007–2012, AKDSS recorded 300 drowning deaths. The average number of victims was 50 per year (range: 38–58); 252 (84%) were male; the median age was 39 years (range: 0–89); and 65 (22%) were occupational. The average annual age-adjusted drowning rate was 7.1 per 100,000 persons, respectively. Crude rates by race were highest among American Indian/Alaska Native persons, followed by Whites, Blacks, and Asian/Pacific Islanders (14.6, 5.2, 4.7, and 2.7 per 100,000 persons, respectively). Crude rates by age and sex were highest among males aged 35–39 years and females aged 70–74 years (20.4 and 5.1 per 100,000 persons, respectively). The drowning death rate among children aged 0–9 years was 2.6 per 100,000 persons, a decrease of 45% from 4.7 per 100,000 persons in 2000–2006.

Characteristics of the 65 occupational drowning deaths were as follows:

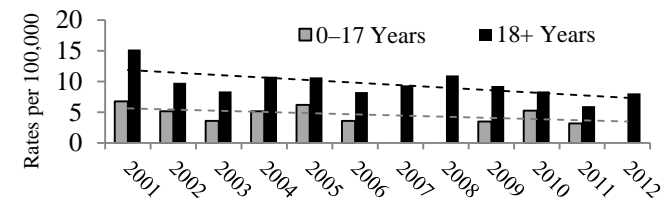
- 27 (42%) of the victims were Alaska residents (Figure 2);
- 45 (69%) involved boating activities, 7 (11%) involved walking near water, 5 (8%) involved aircraft crashes, 3 (5%) involved diving, and 5 (8%) involved other or unknown activities (*total does not equal 100% due to rounding*);
- 22 (49%) of the 45 boating victims were not wearing a personal flotation device (PFD) at the time of incident;
- the commonest primary circumstance preceding the incident was a fall overboard from boat/vessel (18, 28%); and
- the most common contributing factor was weather conditions (21, 32%).

Characteristics of the 235 non-occupational drowning deaths were as follows:

- 85 (36%) involved boating activities (Table), of which, 48 (56%) were known not to have worn a PFD at the time of the incident, and 29 (35%) were suspected or confirmed to have used alcohol prior to the incident;
- 82 (36%) were in a river, 49 (22%) were in the ocean, and 37 (16%) were in a lake/pond;
- 87 (43%) of the 201 adult deaths overall were suspected or confirmed to have involved alcohol;
- 42/85 (49%) of the boating victims were in motorboats and 27/85 (32%) were in canoes, kayaks, or inflatable crafts;

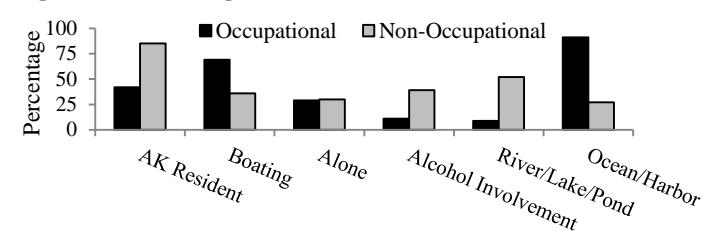
- 25 (11%) of the victims were riding ATVs (n=8) or snowmachines (n=17), and 3/17 (18%) deaths associated with snowmachining occurred while attempting to hydroplane a snowmachine across an open body of water;
- 20 (9%) of victims were in bathtubs or hot tubs, of which, 19 (95%) were adults and 12 (60%) involved alcohol, illicit drugs, or prescribed medication(s); and
- 16 (7%) of the victims were children aged 0–9 years, of which, 9 (38%) were unattended prior to the incident.

**Figure 1. Drowning Rates, by Age Group — Alaska, 2001–2012<sup>3</sup>**



Notes: Rates were not calculated for  $\leq 5$  observations in 2007, 2008, and 2012. Trend lines:  $y = -0.2x$ ,  $r^2 = 0.29$ ,  $p = 0.02$  for 0–17 yo;  $y = -0.4x$ ,  $r^2 = 0.43$ ,  $p = 0.02$  for  $\geq 18$  yo

**Figure 2. Drowning Characteristics — Alaska, 2007–2012**



**Table. Circumstances of Non-Occupational Drowning Deaths, Alaska, 2007–2012, N = 235**

Circumstance	Number	Percent*
Boating	85	36%
Swimming in/playing around water	25	11%
Riding ATV/snowmachine	25	11%
Walking near water	24	10%
Bathing	20	9%
Automobile/aircraft-related	17	7%
Fishing/Diving	4	2%
Other	6	3%
Unknown/undetermined	29	12%

\*Total does not equal 100% due to rounding

### Discussion

While drowning prevention efforts implemented by the Kids Don't Float Program, the Alaska Marine Safety Education Association, the United States Coast Guard, and others have likely contributed to Alaska's declining trends in drowning incidence; the fact that Alaska's unintentional drowning rate was still the highest in the country in 2010 underscores the importance of continued effort.<sup>2</sup> Such effort should focus on addressing modifiable risk factors, such as 1) avoiding alcohol use and always wearing a PFD while boating, 2) paying close attention to weather forecasts while boating, 3) avoiding bathing while using alcohol and other mind-altering drugs, 4) never leaving a child unattended around water, and 5) never hydroplaning snowmachines over open water.

### References

1. Strayer HD, et al. Drowning in Alaska: Progress and Persistent Problems. *Int J Circumpolar Health*. 2010;69(3):253-64.
2. CDC. Web-based Injury Statistics Query and Reporting System. Available at: <http://www.cdc.gov/injury/wisqars/> Accessed May 8, 2014.
3. Alaska Drowning Surveillance System Database.