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## Drowning Deaths in Alaska, 2016–2021

### Background

Drowning is a leading cause of unintentional injury mortality in the United States. During the past decade, drowning mortality increased by nearly 12% nationally with an average annual age-adjusted rate of 1.24 drownings per 100,000 persons.<sup>1</sup> According to the Centers for Disease Control and Prevention (CDC), Alaska had the highest age-adjusted drowning rate in the nation in 2021.<sup>2</sup> This *Bulletin* provides an update on the epidemiology of Alaska's drowning deaths during 2016–2021.

### Methods

Reports from the Alaska Drowning Surveillance System (AKDSS) were used to identify all drowning deaths in Alaska during 2016–2021. The AKDSS uses death certificates, medical examiner records, and law enforcement reports to abstract factors surrounding fatal drownings in Alaska. Population estimates from the Alaska Department of Labor and Workforce Development, Research and Analysis Section were used for denominators to calculate unadjusted rates. Rates by race were calculated using 2016–2021 population estimates.

### Results

During 2016–2021, 342 drowning deaths were recorded in AKDSS. The average annual drowning rate was 7.8 drownings per 100,000 persons (age-adjusted rate 7.3 drownings per 100,000 persons). The median age of drowning victims was 45 years; 283 (83%) drowning victims were male (Table 1). The highest drowning rates were among males and females aged ≥60 years (20.5 and 4.1 drownings per 100,000 persons, respectively). The highest rates by region were observed in the Southwest and Northern regions (31.1 and 26.8 drownings per 100,000 persons, respectively). Forty-four (13%) drownings were due to either intentional self-harm, assault, or undetermined intent.

**Table 1. Counts and Unadjusted Rates of Deaths Due to Drowning — Alaska, 2016–2021**

	2016–2018		2019–2021	
	Count	Rate*	Count	Rate*
All Deaths	176	8.0	166	7.6
<b>Age Groups</b>				
0–14 Years	8	1.7	11	2.4
15–24 Years	13	4.5	14	5.0
25–44 Years	59	9.4	57	9.0
45–64 Years	63	11.0	56	10.4
65+ Years	31	12.5	23	8.0
Unknown	2	NR	5	NR
<b>Sex</b>				
Males	148	13.0	135	10.1
Females	28	2.6	31	2.8
<b>Region</b>				
Anchorage	11	1.2	17	1.9
Gulf Coast	22	9.1	25	10.2
Interior	20	5.9	14	4.2
Mat-Su	13	4.2	10	3.1
Northern	24	28.8	21	24.8
Southeast	34	15.5	27	12.4
Southwest	39	30.8	40	31.4
Unknown†	13	NR	12	NR

\*Per 100,000 persons NR: No rate

†Location is either unknown or outside of geographic boundaries

Of the 342 drownings, 49 (14%) were classified as occupational and 292 (85%) were non-occupational. The most common contributing factors to occupational drownings were the victim having used either alcohol or drugs prior to the incident (16/49, 33%), and falling from a vessel or a dock (10/49, 20%).

Of the 292 non-occupational drownings during 2016–2021,

- 113 (39%) involved boating activities (Table 2);
- 114 (39%) were in a river or creek, 77 (26%) were in the ocean or harbor, 36 (12%) were in a lake or slough, and 34 (12%) were in a hot tub or a bathtub; and
- 12 (4%) were children aged ≤9 years, 3/12 (25%) of whom were unattended immediately prior to the incident.

**Table 2. Known Activities, Non-Occupational Drowning — Alaska, 2016–2018 and 2019–2021**

Circumstance	2016–2018 N=148		2019–2021 N=144	
	Count	Percent	Count	Percent
Boating (recreational and subsistence)	71	48%	42	29%
Personal flotation device (PFD) not worn	53/71	75%	37/42	88%
Alcohol use known or suspected	39/71	55%	15/42	36%
Swimming in/playing around water	12	8%	28	19%
Riding ATV/snow machine	13	9%	22	15%
Walking near water	19	13%	4	3%
Bathing	8	5%	20	14%
Automobile/aircraft-related	4	3%	10	7%
Fishing/diving	0	0%	5	3%

### Discussion

Drowning rates in Alaska are among the highest in the nation and have remained largely consistent over the last 6 years.<sup>2</sup> Drowning rates continue to be particularly high among males and people living in rural regions of Alaska.<sup>3</sup> Recreational drownings occurred most often while boating and operating ATVs and snowmachines. Although the number of drownings that occurred while boating decreased considerably during the two time periods examined, the proportion of boating-related drownings that involved persons not wearing a PDF increased from 75% to 88% (Table).

There was a notable increase in the number of drownings that occurred while bathing. All such drownings resulted from a medical condition or loss of consciousness; alcohol/drug use was a primary contributory factor in 68% of these decedents.

Twenty-five percent of the children aged ≤9 years who drowned were unattended by an adult. The American Academy of Pediatrics recommends age-appropriate, close, unimpaired supervision of children around water. Children should be taught how to swim and flip on their backs. Adults should instruct children by demonstrating appropriate water safety practices and behaviors and wearing PFDs during all boating activities.<sup>4</sup>

Year-round waterwise practices while boating or traveling on water include: 1) wearing a correctly sized and rated PFD; 2) no alcohol or drug use; 3) paying close attention to weather forecasts; 4) filing a written float plan; 5) training on traveling across open and frozen waterways, 6) and a clear understanding of cold-water safety practices.<sup>4</sup>

### References

1. Centers for Disease Control and Prevention (CDC). National Center for Injury Prevention and Control Drowning Prevention. Available at: <https://www.cdc.gov/drowning/data/index.html>.
2. CDC. Web-based Injury Statistics Query and Reporting System. Available at: <http://www.cdc.gov/injury/wisqars/>.
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4. Alaska DNR Office of Boating Safety. Available at: <http://dnr.alaska.gov/parks/boating/>