

## UNINTENTIONAL DROWNING IN OREGON

**A**MONG ALL STATES, Oregon has the tenth highest death rate ascribed to drowning.<sup>1</sup> During 1995-1997, 202 Oregonians drowned unintentionally. Had Oregonians drowned at the same rate as other Americans, only 152 would have died. If we had had New York's rate—the lowest in the United States—only 67 Oregonians would have drowned. This article describes the characteristics of the 202 Oregonians who drowned during 1995-1997 and the circumstances surrounding their untimely deaths.

### METHODS

Deaths occurring in a body of water are distinguished from deaths due to drowning. If, for example, a person dived from a cliff into a river, fracturing his skull and causing a terminal subdural hematoma, the death would be coded to a fall, not to a drowning. Similarly, if a person had a fatal heart attack while swimming, the death would be coded to a myocardial infarction. We reviewed cases of Oregonians who died during 1995-97 with death certificates that cited ICD-9\* codes 830 (accident to watercraft causing submersion), 832 (other accidental submersion or drowning in water transport accident), or 910 (accidental drowning and submersion) as the underlying cause of death.

Rates were calculated using population denominators only. Therefore, we do not know whether the rates reflect risk, as the populations at risk of drowning are unknown.

### RESULTS

During 1995-97,<sup>†</sup> 202 Oregonians who died were assigned one of the aforementioned death certificate codes. (The additional 29 suicidal drownings

and 9 drownings for which medical examiners were unable to exclude suicide or homicide are not included in this analysis). The ages of drowning victims ranged from three months to 88 years.

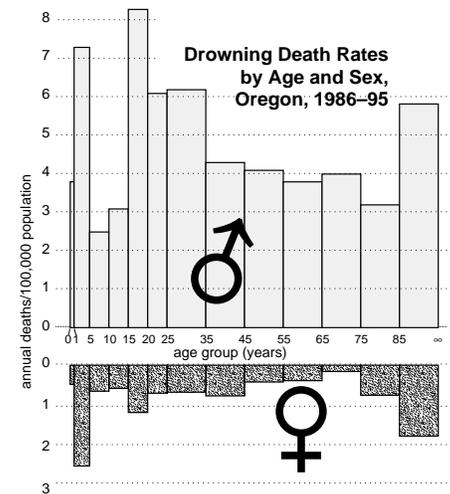
At apparent greatest risk of drowning were toddlers (ages 1-4), teens and young adults (ages 15-34), and the very elderly (ages 85+). Perhaps surprisingly, rates were lowest among 5- to 14-year-olds (graph).

The (very) crude mortality rate for drowning among males (3.5/100,000/year) was 4.4 times that of females (0.8/100,000/year); 81% of all drowning victims were males. Again, it is unknown whether males recreate in the water more frequently, take more chances in the water, or both.

As shown on the map, although death rates were high along the Oregon coast, the same was true in several counties in central and eastern Oregon. (n.b.: The population and corresponding number of deaths is too low in several sparsely populated counties to draw meaningful conclusions.) The highest age-adjusted drowning rate was seen in Tillamook County (9.7/100,000/year)—more than three times the statewide average during 1986-1995. Curry County ranked second highest at 8.8/100,000/year. Again, such rates are not necessarily indicative of risk.

### CIRCUMSTANCES

One in five of all unintentional drowning deaths resulted from accidents involving watercraft; most of the remainder occurred during other recreational activities and from drownings in bathtubs. Information on alcohol intoxication is rarely recorded on death certificates, making it diffi-



cult to determine the role of alcohol in the deaths discussed here; but if we're anything like the rest of the nation, about half of our drownings would have involved alcohol intoxication.<sup>2</sup>

### LOCATION

Over one-third of all drownings occurred in rivers (37%). Other sites included bathtubs (10%), lakes (9%), the Pacific Ocean (8%), creeks (8%), swimming pools (5%), ponds (5%), reservoirs (4%), and hot tubs (3%). Eleven percent occurred in the grab-bag of "other" sites: bays, irrigation canals, fish ladders, sloughs, culverts, and ditches. Regrettably, we have no data on numbers of Oregonians who enter the various bodies of water and, therefore, cannot quantify which are the riskiest.

**Rivers.** Of the 75 riverine drownings, the Willamette was the single most common site, followed by the Columbia and the Sandy; 23% involved boating mishaps. Males were nine times as likely as females to drown in a river. Persons 15-24 years of age, although making up just 14% of the state's population, suffered 28% of these deaths.

\*International Classification of Disease, Ninth Revision. If you don't know about these already, you are lucky. And now ICD-10 is in the wings!

† Data from 1997 are preliminary; the final number of deaths may be slightly higher.

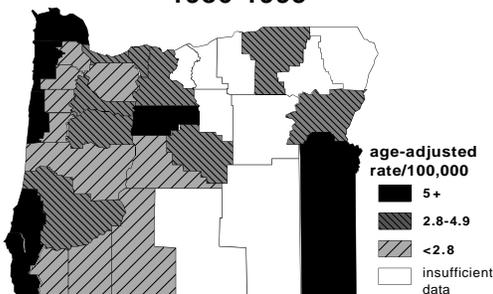
**Bathtubs.** Ten percent (20) of the drownings occurred in bathtubs. Surprisingly, only two of these were infants. Oregonians of all ages drowned while bathing, and 65% of such victims were male. Most of the adult bathtub drownings were preceded by seizures.

**Lakes.** Nine percent of the state's submersion deaths occurred in lakes. Most lacustrine drownings occurred during recreational activities, with 4 of the 19 deaths involving boats. All but 3 of the 19 victims were male. Twelve of these deaths occurred among children and young adults (ages 5-24 years).

**WATERCRAFT-RELATED DROWNINGS**

During 1995-1997, 40 Oregonians died while boating; 31 (78% of boating-related drownings and 15% of all drownings) resulted from collisions. The remainder of the boating-related drownings resulted from falls overboard (4% of all drownings). Boating-related deaths occurred most often on the Willamette, Santiam, and Umpqua Rivers.

**Annualized Drowning Death Rates 1986-1995**



**WATER SAFETY TIPS TO LIVE BY**

- Learn to swim.
- Always swim with a buddy; never swim alone.
- Alcohol and swimming don't mix.
- Watch out for the terrible "too's"—too tired, too cold, too drunk, too far from safety, too much sun, too much strenuous activity.
- Always wear a Coast Guard-approved personal floatation device (i.e., life jacket or vest) when boating and fishing.
- Learn CPR.
- Never leave children unattended near the water. Drowning often is a silent death; many times, no one hears a child fall in a pond or pool.
- Empty home wading pools and buckets after each use; children can drown in as little as two to three inches of water.
- Don't overload a boat with people or equipment. Check the boat's capacity plate for weight limits. Make sure the boat is balanced. In a small boat, return to shore before having people change places.

The victims were overwhelmingly (93%) male and mostly young—especially those who drowned after falling out of the boat.

**DEATH IN THE AFTERNOON**

Not surprisingly, most drownings occurred during the warmer months, with July the peak month. Twenty-four percent of the drownings occurred on Sundays, and another 19% on Saturdays. Two-thirds of the deaths occurred between noon and 8 p.m.

When all is said and done, most drownings would not occur if basic safety messages were heeded. For example, according to the Oregon State Marine Board, about 85% of those who died in boating accidents would have survived had they been wearing life jackets. The role of the physician and public health agencies

in preventing such tragedies is uncertain. There is so much advice to give, and so little time. Whether given *per os*, in a pamphlet, or disseminated through the mass media, the basic messages are encapsulated in the box above.

**REFERENCES**

*This article is condensed from a Health Division newsletter: Summer Fun, Summer Death. Oregon Health Trends. Series 50: July 1998:1-9. For your free copy of the unexpurgated report, call 503/731-4354. Hurry; supplies are limited. Operators are standing by.*

1. Resident state and county comparison data are from the CDC's WONDER system (<http://wonder.cdc.gov/>), and are for the most recent periods available: 1993-1995 for inter-state comparison and 1986-95 for counties. These rates are age-adjusted to the 1940 United States standard population. All other data are from the Health Division's death certificate-based mortality files.
2. National Center for Injury Prevention and Control statistics. <http://www.cdc.gov/ncipc/duip/drown.htm>.