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Firearm Injuries in Alaska, 2009–2015

Introduction

The rate of firearm injury mortality in Alaska has consistently been higher than the national rate since at least 1999.¹ In Alaska, firearm injuries are monitored using three surveillance systems, the Alaska Firearm Injury Report Surveillance System (AKFIRSS), the Alaska Trauma Registry (ATR), and the Alaska Violent Death Reporting System (AKVDRS).² This *Bulletin* provides an update on firearm injuries in Alaska.

Methods

Data on firearm injuries treated by emergency departments (ED) and outpatient clinics from 2009–2015 were obtained from AKFIRSS. Data on firearm-related hospitalizations and fatalities from 2009–2015 were obtained from ATR and AKVDRS, respectively. Data were reviewed to exclude fatalities from AKFIRSS and ATR datasets and cases in which a firearm was used as a blunt object. Annual crude rates were calculated using Alaska Department of Labor population estimates data.

Results

During 2009–2015, 1,488 firearm injuries were identified (median: 248 firearm injuries per year). Of those, 1,000 (67%) were fatal (19.7 average annual deaths per 100,000 persons), 358 (24%) involved hospitalization with a non-fatal injury (7.1 average annual hospitalizations per 100,000 persons), and 130 (9%) involved treatment in an emergency department or an outpatient clinic. Of the 1,000 fatalities, most were due to suicide (750, 75%) or homicide (152, 15%). The remaining 98 (10%) were due to unintentional injury (36), legal interventions (32), or undetermined (30). Of the 902 suicide or homicide decedents, 429 (48%) were known to have had a recent interpersonal relationship problem (e.g., intimate partner, family, or another type of relationship), and 459 (51%) were suspected or confirmed to have been using drugs or alcohol at the time of or shortly before the incident.

The average annual firearm injury rates by sex and age were highest among males aged 20–24 years (118.5 per 100,000 persons). Rates by race were highest among American Indian/Alaska Native (AI/AN) people and Blacks (45.6 and 38.1 per 100,000 persons, respectively; Table). Rates by region were highest in the Northern and Southwest regions (56.1 and 53.9 per 100,000 persons, respectively; Table).

During 2009–2015, the average annual rates of non-fatal firearm injury hospitalization by intent were highest for assault and suicide attempt (3.8 and 2.7 hospitalizations per 100,000 persons, respectively). During 2011–2015, hospitalizations due to an assault with a firearm nearly tripled (from 2.1 to 6.1 per 100,000 persons, respectively; Figure 1). Firearm injury death rates by manner of death were highest for suicide, followed by homicide, and unintentional injury (14.8, 3.6, and 0.7 per 100,000 persons, respectively; Figure 2).

- Of the 750 firearm suicides that occurred during 2009–2015,
- 507 (68%) involved the use of a handgun, and 241 (32%) involved the use of a rifle or a shotgun, and
 - 234 (31%) involved decedents who had at least one mental health problem, including depression (156, 21%), anxiety disorder (36, 5%), and bipolar disorder (23, 3%).

Discussion

The AKVDRS data presented here demonstrate that Alaska continues to report a high burden of firearm fatalities with a mortality rate almost double the national rate (19.7 vs. 10.3 per 100,000 persons, respectively).^{1,3} Most firearm fatalities were

suicides, and nearly one-third of suicide decedents had a known mental health problem. Moreover, the firearm injury hospitalization rate increased every year since 2011. Taken together, these findings provide insight into the public health impact of gun violence in Alaska, and convey the importance of assuring that sufficient suicide, violence, mental health, alcohol abuse, and drug abuse prevention and treatment programs are available statewide.

Table. Demographic Characteristics of Firearm Injury Victims — Alaska, 2009–2015

	ED and Outpatient (N=130)	Hospitalized Injuries (N=358)	Fatal Injuries (N=1,000)	Total Injuries (N=1,488)
Age (yrs)				
Median	27	25	34	30
Age Range	3–74	3–92	<1–95	<1–95
Sex				
Male	108 (83%)	295 (82%)	824 (82%)	1227 (82%)
Race	Average Annual Rate per 100,000 persons (# of victims)			
White	1.9 (70)	3.5 (126)	17.6 (634)	23.1 (830)
Black	5.0 (12)	14.6 (35)	18.4 (44)	38.1 (91)
A/PI	2.3 (9)	7.0 (27)	6.2 (24)	15.5 (60)
AI/AN	2.1 (18)	16.6 (142)	26.9 (230)	45.6 (390)
≥2 races	(0)	(2)	(63)	(65)
Other/Unk	(21)	(26)	(1)	(52)
Region	Average Annual Rate per 100,000 persons (# of victims)			
Anchorage	2.2 (46)	7.3 (152)	16.1 (334)	25.6 (532)
Mat-Su	2.3 (15)	4.4 (29)	20.2 (132)	26.9 (176)
Gulf Coast	3.0 (17)	3.0 (17)	23.6 (132)	29.7 (166)
Interior	4.2 (33)	4.5 (36)	20.0 (158)	28.7 (227)
Northern	(2) [†]	20.8 (39)	34.2 (64)	56.1 (105)
Southeast	(1) [†]	2.9 (15)	14.6 (75)	17.7 (91)
Southwest	(3) [†]	17.2 (50)	35.7 (104)	53.9 (157)
Unknown	(13)	(20)	(1)	(34)

*A/PI = Asian/Pacific Islander, AI/AN = American Indian/Alaska Native

[†]Rates based on ≤5 occurrences were not reported.

Figure 1. Rates of Non-Fatal Firearm Injury Hospitalizations (N=358), by Intent and by Year — Alaska, 2009–2015

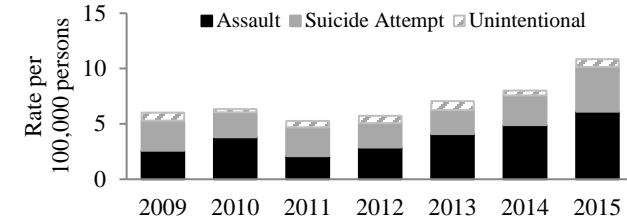
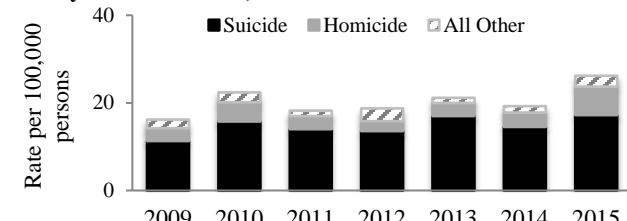


Figure 2. Rates of Firearm Injury Deaths (N=1,000), by Manner and by Year — Alaska, 2009–2015



References

1. WISQARS Injury Mortality Report. Injury Center, CDC. Available at: https://www.cdc.gov/injury/wisqars/fatal_injury_reports.html
2. Additional information on these surveillance systems is available at: <http://dhss.alaska.gov/dph/Epi/Documents/pubs/ConditionsReportable.pdf#page=14>
<http://dhss.alaska.gov/dph/Emergency/Pages/trauma/registry.aspx>
<http://dhss.alaska.gov/dph/Epi/injury/Pages/akvdrs>
3. Alaska Epidemiology Bulletin. "Firearm Injury Hospitalizations and Deaths – Alaska, 2003 – 2008." No. 20, July 26, 2011. Available at: http://www.epi.alaska.gov/bulletins/docs/b2011_20.pdf