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Dog Bite Injury Hospitalizations and Estimated Burden in Alaska, 2001–2011

Background

In Alaska, dog bite injuries are an important public health challenge.^{1,2} Nationally, hospitalization rates have increased from 2.0 to 3.1 per 100,000 during 1993–2008.³ The burden from minor injuries seen in outpatient settings or receiving no medical attention is largely uncharacterized, although one study of American Indian/Alaska Native (AI/AN) children reported a rate of outpatient visits almost 100 times that for hospitalizations.² Entities that track dog bite incidents include some municipal and borough offices, local police departments, and animal control personnel. No legal requirement exists to report dog bites to a single statewide entity; therefore, quantifications of injury burden have used available data that primarily pertain to severe injuries (e.g., using death certificates or hospital data sources). This *Bulletin* presents dog bite injury hospitalizations reported during 2001–2011 to the Alaska Trauma Registry, and an attempt to generate a statewide estimate of dog bite injury burden.

Methods

Alaska Trauma Registry (ATR)

Data analyzed were all hospitalizations recorded by the Alaska Trauma Registry (ATR) during 2001–2011 with E-code 906.0 (dog bite). During the study period, all 24 of the Alaska acute care hospitals provided data to the ATR.³ Average annual hospitalization rates were calculated using July 2007 Alaska Department of Labor and Workforce Development (DLWD) population estimates (mid-point for study period).

Statewide Estimate of Dog Bites

Over 30 agencies were contacted that potentially had data or authority regarding dog bite incident reports for various regions of Alaska. Reports for all “incidents” were requested regardless of whether a bite resulted in any health care contact. Letters were sent via email; follow-up phone calls were made. A template was provided with suggested data fields. DLWD population data from 2010 were used to calculate rates.

Results

During the 11-year study period, 292 dog bite hospitalizations were recorded, yielding an annual rate of 3.9 bites per 100,000 persons. Most of the injuries occurred in males (56%, 164/292). Most injuries occurred in Anchorage/Mat-Su; however, the highest injury rates occurred in the Northern and Southwest regions (Table).

Table. Region of Occurrence for Dog Bite Injury Hospitalizations — Alaska, 2001–2011 and 1991–2002

Region*	# of injuries (% of total)	2007 AK population (% of total)	2001–2011 Annual rate per 100,000	1991–2002 Annual rate per 100,000 ¹
Anchorage/Mat-Su	133 (46.2)	362,163 (53.2)	3.3	3.1
Gulf Coast	36 (12.5)	76,121 (11.2)	4.3	2.9
Interior	54 (18.8)	109,336 (16.1)	4.5	4.6
Northern	22 (7.6)	23,548 (3.4)	8.5	9.4
Southeast	13 (4.5)	70,219 (10.3)	1.7	1.9
Southwest	30 (10.4)	38,782 (5.7)	7.0	10.4
Total	288**	680,169	3.8**	3.9

*Based on Alaska labor market regions.

**Records were excluded if the region was out-of-state or unknown.

The highest annual rate was among children aged 0–4 years at 11.3 per 100,000 persons. Hospitalization rates for AI/AN people were higher overall than for non-Natives (NN) at 7.2 and 2.8 per 100,000, respectively. Rates for AI/AN and NN people aged 0–19 years were 12.0 and 4.9 per 100,000, respectively. Although most injuries were considered minor (84%, 246/292), one child died and there were traumatic amputations of a thumb (adult) and part of a hand (child). Hospital stays ranged from 1–28 days (mean: 2.8 days). For bite reports where the venue was recorded, most victims were bitten in a “home” setting by a “known” dog (60%, 128/222).

Only nine entities, representing all but the Southwest region of Alaska, were able to provide some data used to generate an estimate of bite reports for the period 2007–2012. The entities recorded 8,942 dog bites/incidents during the 6-year period, and represented approximately 64% of the state’s population. Using that population as a denominator, an annual rate of 180 bite reports per 100,000 persons was calculated.

Discussion

Comparing this review with a previous ATR summary (1991–2002), the overall rate of dog bite hospitalizations has remained at 3.9 per 100,000. An earlier report looking only at AI/AN data suggested a recent decreasing trend, which may have detected possible regional differences (i.e., Southwest rates appear to have declined) or reflected differences in data sources.² No known widespread dog bite prevention programs were in place during 2001–2011. This analysis underscores the fact that severe dog bite injuries continue to occur at a concerning rate in Alaska, and persons disproportionately impacted continue to be males, younger children, AI/AN people, and persons living in more rural areas of the state.

Data used to generate a statewide estimate of the burden of dog bites were fragmented. Although some incidents may have been captured both by animal control entities and by the ATR, the rate of all bite incidents was estimated to be at least 45 times that of hospitalizations, i.e., 180 versus 3.9 incidents per 100,000. This is likely a substantial underestimate given that data used came from regions with lower rates, and compared to the previously cited multiplier for outpatient visits,² which should be less numerous than all injuries.

Many locations in the state have neither the mandate nor the ability to track dog bite injuries, and thus data are not readily available and comparable. Being able to accurately quantify the burden of dog bites can help in garnering support for resources and possible community interventions. Bites can be life-altering for victims’ physical and mental health, especially when the victims are small children. Bites can also be costly. Although the focus on interventions at a community-level is important, because “home” settings are the venue for the majority of incidents, intervention messaging should also provide household prevention strategies.

Acknowledgements

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