

INJURY BRIEF

Dog Bite-Related Injuries

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**HAMILTON COUNTY
PUBLIC HEALTH**

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Hamilton County Public Health

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www.healthypeople.gov

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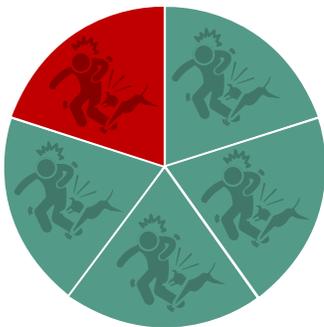
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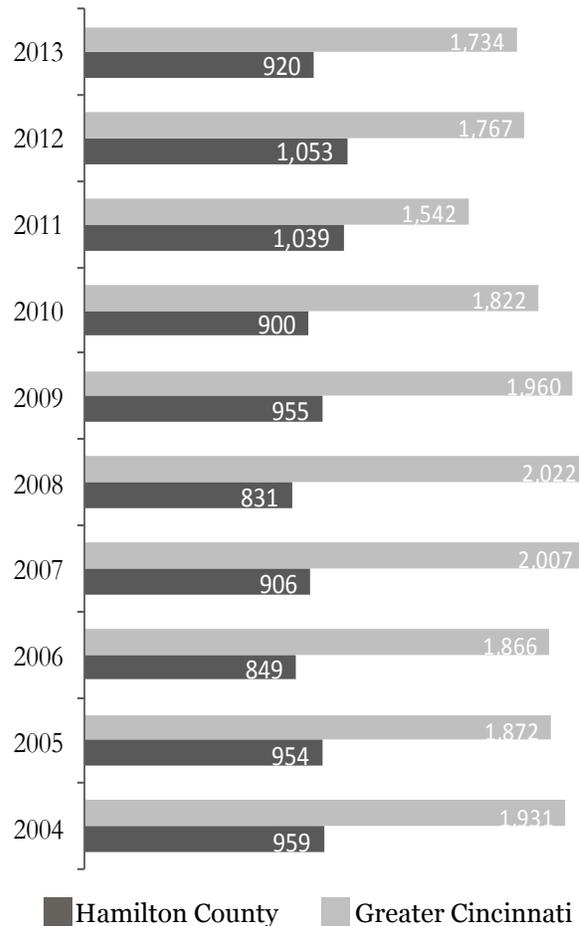
4.5 Million
People in the United States are bitten by dogs each year¹.



1 in 5 individuals bitten by dogs requires medical attention².



359,223
Children in the US between 1-14 years of age were bitten by dogs between 2010 and 2012².



*Note: Data for Greater Cincinnati Region was obtained by The Health Collaborative

Figure 1: Number of Dog Bite-Related Injuries Among Hamilton County Residents, 2004-2013

Dog Bite-Related Injuries Throughout The Years

In 2012, there were approximately 83.3 million pet dogs in the United States³. Forty-seven percent of U.S. households considered man’s best friend part of the family³. However loveable and docile the family dog, our furry four-legged family member can still bite when provoked.

The Centers for Disease Control and Prevention (CDC) estimates that each year 4.5 million people are bitten by dogs¹. Most of the time peo-

ple suffer dog bites from their own dog, or from a dog they know, such as neighbor’s or family friend’s dog³.

Whether the dog bite is a small nip of a puppy or an attack from an adult dog, dog bites are a public health concern. Approximately one in five dog bite victims require medical attention, and many more dog bites go unreported and untreated every year.

From 2004 to 2013, the annual number of dog bites in Hamilton County has re-

mained relatively consistent, as shown in Figure 1. Between 800 and 1,000 dog bites were treated each year by emergency departments and hospitals. The dog bites to Hamilton County residents comprise the majority of dog bites for the Greater Cincinnati Region. The Greater Cincinnati Region is comprised of Hamilton, Adams, Brown, Butler, Clermont, Clinton, Highland and Warren Counties in Ohio; Boone, Campbell, Grant and Kenton Counties in Kentucky; and Dearborn and Ripley Counties in Indiana. While the majority of dog bites are non-fatal, dog bites still may result in fatalities. In 2013, there were 31 deaths in the United States due to dog bites⁴.

Multiple factors drive the number of dog bites that are treated at emergency departments and hospitals. Dog bite prevention strategies should emphasize:

- Education on dog safety
- Responsible dog ownership

Throughout this issue brief, the problem of dog bites within Hamilton County will be highlighted and methods for preventing dog bites will be presented. Awareness and action are needed in order to promote reduction in dog bites.

Dog Bites Across All Ages

Age is an important factor to consider when addressing the issue of dog bites within a community. As Table 1 shows, children (<15 years) had the highest rates of dog bites in 2004 and 2013. Table 1 also shows the difference between the 2004 and 2013 rate, along with the percent the rates differ. Using the 2004 data as the baseline and looking at the rate difference, the age groups that have experienced the greatest increase in burden due to dog bite-related injury can be determined.

Hamilton County residents 85 years of age and older experienced the greatest increase in age-specific injury rate due to dog bites (0.3 per 1,000). Hamilton County children 10 to 14 and 5 to 9 years of age experienced the largest decrease in the age-specific dog bite-related injury rate (0.5 per 1,000 each). These young Hamilton County residents are at a high risk of dog bites, as the overall rates were still much higher than for the other age groups.

Age Group	2004 Rate (Per 1,000)	2013 Rate (Per 1,000)	Rate Difference	Percent Rate Difference
0-4 Years	2.3	2.0	-0.2	-10.5%
5-9 Years	2.9	2.4	-0.5	-16.5%
10-14 Years	2.3	1.8	-0.5	-21.7%
15-19 Years	1.2	1.3	0.1	7.7%
20-24 Years	0.8	1.0	0.2	29.5%
25-29 Years	1.0	1.0	0.02	2.1%
30-34 Years	1.3	1.1	-0.2	-12.8%
35-39 Years	1.2	1.1	-0.04	-3.4%
40-44 Years	1.0	1.0	0.05	4.7%
45-54 Years	0.7	0.8	0.1	13.2%
55-64 Years	0.6	0.8	0.2	29.5%
65-74 Years	0.5	0.8	0.2	43.0%
75-84 Years	0.4	0.5	0.06	14.5%
85+ Years	0.3	0.6	0.3	113.9%

*Note: Rate differences are calculated per 1,000 residents and may differ from manual calculations performed from the table due to rounding.

Table 1: Rate of Dog Bites Among Hamilton County Residents by Age Group, 2004 vs. 2013

Dog Bites Among Children

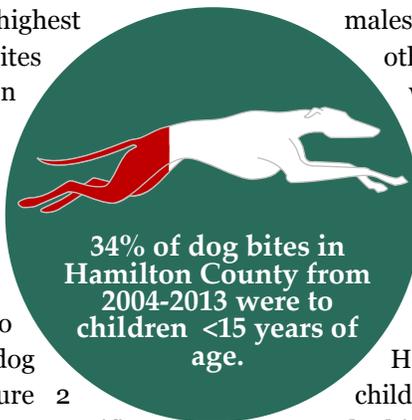
Every year, approximately 4.5 million Americans are bitten by dogs. Children are the most common victims of dog bites and are more likely to be severely injured. Children <15 years of age had the highest rates of dog bites in Hamilton County.

the highest rates of dog bites occurred among white male residents. As a whole male residents had higher rates of bites than their female counterparts.

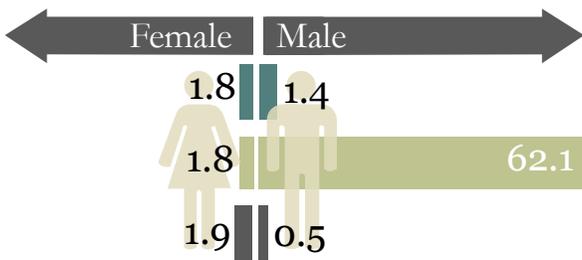
However, rates for black females and females of other racial groups were slightly higher than their male counterparts.

Along with a higher overall dog bite rate, Hamilton County children also experienced a higher age-specific rate of emergency department visits for dog bite-related injuries. Figure 3 shows the aver-

While dog bites can affect anyone, males are more likely than females to experience a dog bite¹. Figure 2



shows the race-sex specific rates of all dog bites to Hamilton County children <15 years of age. As the figure illustrates,



*Note: Rate is gender-race specific injury rate per 1,000 residents.

Black White Other

Figure 2: Distribution of Dog Rates Among Hamilton County Children (<15 Years of Age) by Race/Sex, 2004-2013

Dog Bites Among Children (Continued)

Quick Facts

48,399

The number of dogs licensed in Hamilton County in 2014⁶.

Head & Neck

The most common body part injured by dog bites⁴.



1 in 3 dog bites that occur every year are from the family dog⁵.

age annual age-specific dog bite-related emergency department visit rate for Hamilton County children <15 years of age. Hamilton County children who were 3 to 5 years of age had the highest rate of emergency department visits (26.05 per 10,000 residents). This rate is nearly two times higher than children 0 to 2 years of age, and nearly 1.5 times higher than children 12 to 14 years of age.

A determination of these injuries was made using primary diagnoses codes. Primary diagnosis codes specify which injury during a patient's visit was most responsible for the patient's stay. Of the 3,471 emergency department visits due to dog bites that occurred to Hamilton County children <15 years of age during

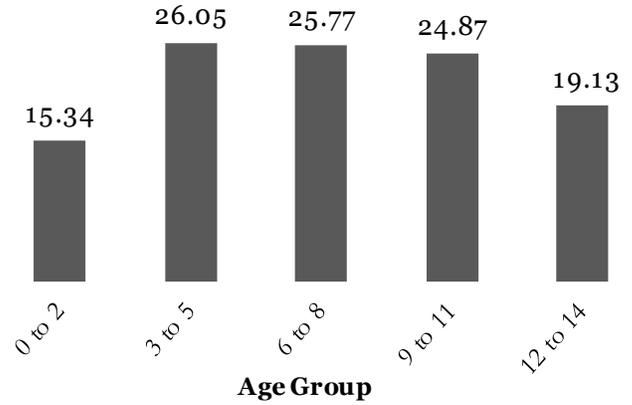


Figure 3: Average Annual, Age-Specific, Dog Bite-Related ED Rate (per 1,000 Residents) for Hamilton County Children (<15 Years of Age), 2004-2011

2004 to 2013, the top three primary diagnoses were open wound of the head and neck (1,641), open wound of the leg (395) and superficial injuries (332). A diagnosis of a superficial injury is one in which a dog bite resulted in an abrasion or bruise, but did not result in an open wound. Table 2, illustrates the top five primary diagnoses of dog bites within Hamilton County children.

Education on dog safety and

responsible pet ownership may help reduce the number of dog bites, decrease the number of emergency department visits and the overall number of dog bites among children in Hamilton County³.

According to the 2015 dog bite liability analysis conducted by the Insurance Information Institute and StateFarm, dog bites along with other dog-related injuries were responsible for one-third of all homeowners insurance liability claims. The state of Ohio had the second highest number of dog bite claims (1,009) in 2014 which cost Ohio homeowners \$22.2 million in 2014. Ultimately, by promoting dog safety and responsible pet ownership, Hamilton County will improve the quality of life for

Type of Diagnosis	Number of Injuries	Percent of Injuries
Open Wound of the Head and Neck	1,641	46.2%
Open Wound of the Leg	395	11.1%
Superficial Injuries	332	9.3%
Open Wound of the Arm Except Hand(s) or Finger(s)	302	8.5%
Open Wound of the Hand Except Finger(s) Alone	272	7.7%

Table 2: Top 5 Primary Diagnoses of Dog Bite-Related Injuries Hamilton County Children <15 Years of Age, 2004-2013



Did you know?

We often associate a dog's wagging tail with a happy, friendly dog. But did you know that a dog will wag their tail for multiple reasons, including when they are aggressive? Dogs are extremely expressive animals, and it's important to learn a dog's body language to understand their feelings and intentions.

"There are a plethora of reasons dogs may bite...it is a fact that the majority, if not all occurrences of dogs biting humans occur due to some provocation. Body language is a crucial element to preventing dog bites; humans must use body language to show they do not mean harm, while focusing intently on the signals the dog is using to warn they may bite. Dogs do not bite without warning. People should not move abruptly or get frustrated. People should approach in a manner that would appear submissive to the dog. People should never turn their back and run in the presence of an unfamiliar dog. Dogs will stand tall with their head and tail extended, growl, provide eye contact, and sometimes a mere moment of silence is the only warning provided.

"People should never leave children unattended in the presence of a dog. Teach children to respect dogs... Every person should ask the owner if they may interact with the dog. Heeding the warning the dogs provide can decrease the incidence of bites exponentially."

-Dr. Lauren Buckley, DVM, Park Hills Animal Hospital (KY)

Healthy People 2020 Goals

Every 10 years the U.S. Department of Health and Human services releases the Healthy People objectives. The Healthy People 2020 objectives were released in December 2010. Healthy People are a set of nationwide health-promotion and disease-prevention goals which supports prevention efforts to create a healthier nation⁷. Many of these objectives are created by using rates from a previously measured national rate gathered during Healthy People 2010, or from a 10 percent decrease there-in. There is currently no dog bite objective in Healthy People 2020 goals. The Healthy People 2010 objective re-

Ways to Prevent Dog Bites

We love our four-legged friends, however, it's important to remember a dog's bark isn't always worse than their bite. It's important to realize that every dog has the potential to bite, even our furry four-legged family members. However, there are things that you can do to reduce the risk of being bitten by a dog.

-  Do not pet a dog without allowing it to see and sniff you first;
-  Do not approach an unfamiliar dog;
-  Do not run from a dog or scream;
-  Remain motionless ("be still like a statue") when approached by an unfamiliar dog
-  If knocked over by a dog, roll into a ball and be still;
-  Do not allow children play with a dog unless supervised by an adult;
-  Avoid direct eye contact with a dog;
-  Do no disturb a dog that is sleeping, eating, or caring for puppies;
-  If someone is walking their dog, always ask permission first before petting their dog.

If you are the owner of a dog there are ways to prevent your dog from biting other people.

-  Spay/neuter your dog (this can oftentimes reduce aggressive tendencies in dogs);
-  Never leave infants or young children alone with a dog;
-  Don't play aggressive games, such as wrestling, with your dog;
-  Properly socialize and train any dog entering your household;
-  Immediately seek professional advice from your local veterinarian if your dog begins to show aggressive or undesirable behavior;

It's important to remember if you are bitten to immediately report the bite to your local health department to avoid the potential spread of rabies.

For more information on dog bites and how to prevent them visit:

<https://www.avma.org/public/Pages/Dog-Bite-Prevention.aspx>

garding emergency department visits for dog bites was archived (no longer included in Healthy People 2020) due to the low rate and lack of effective prevention programs. For comparison purposes Figure 4 shows the archived Healthy People 2010 dog bite goal and how Hamilton County currently compares. As more data are collected through the Hamilton County Injury Surveillance System, changes through the years will be detected allowing for improved surveillance of dog bites.

Goal	Hamilton County (2004-2013)
15-30: Reduce hospital emergency department visits for nonfatal dog bite injuries to 114 emergency department visits per 100,000 population	114.33 per 100,000

Figure 4: Archived Healthy People 2010 Goals

Additional Reports

For additional reports on injuries in Hamilton County, please visit:

www.hamiltoncountyhealth.org/en/resource_library/reports.html



Where Does Public Health Get the Data?

The data used in this report were gathered from the Hamilton County Injury Surveillance System (HCISS). Data for the Greater Cincinnati Region, presented in Figure 1, was obtained and gathered by the Health Collaborative. The HCISS is a collaborative surveillance effort led by Hamilton County Public Health and supported by our local hospitals, the Hamilton County Coroner’s Office, and The Health Collaborative. Data on non-fatal injuries were obtained from local hospital trauma registries and represent emergency department visits and hospitalizations (inpatients); data on fatal intentional injuries were obtained from the Hamilton County Coroner’s Office. Figure 5 shows the breakdown of dog bite-

related injuries as reported through the HCISS. The bottom layer represents the least severe injuries, yet the largest number of patients; the next two layers, hospitalizations and deaths, represent the most severe and costly injuries to residents of Hamilton County. An unknown number of unreported dog bites were not identified in the HCISS because these individuals did not seek medical care for their injury.



Figure 5: Dog Bite Injury Pyramid, Hamilton County, 2004-2013

References

¹Centers for Disease Control and Prevention. *Preventing Dog Bites*. Accessed July 16, 2015. Retrieved from <http://www.cdc.gov/features/dog-bite-prevention/>

²American Veterinary Medical Association. *Dog Bite Prevention*. Accessed July 16, 2015. Retrieved from <https://www.avma.org/public/Pages/Dog-Bite-Prevention.aspx>

³The American Society for the Prevention of Cruelty to Animals. *Pet Care: Dog Bite Prevention*. Accessed July 16, 2015. Retrieved from <http://www.aspca.org/pet-care/virtual-pet-behaviorist/dog-behavior/dog-bite-prevention>

⁴American Veterinary Medical Association. *Infographic: Dog Bites by the Numbers*. Accessed July 16, 2015. Retrieved <https://www.avma.org/Events/pethealth/Pages/Infographic-Dog-Bites-Numbers.aspx>

⁵Insurance Information Institute. *Dog Bite Liability*. Accessed July 16, 2015. Retrieved from <http://www.iii.org/issue-update/dog-bite-liability>

⁶Hamilton County Auditor. *2014 Breed Ranking by Dogs Licensed*. Accessed August 12, 2014.

⁷Centers for Disease Control and Prevention. *Healthy People 2010 Final Review: Injury and Violence Prevention*. Accessed July 16, 2015. Retrieved from www.cdc.gov/nchs/healthy_people/hp2010/hp2010_final_review.htm