

STATISTICAL BRIEF #101

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Emergency Department Visits and Inpatient Stays Involving Dog Bites, 2008

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Introduction

About 77.5 million dogs are owned in the United States, making these one of the country's most popular pets.¹ Each year, approximately 4.5 million people in the U.S. are bitten by dogs.² While the majority of dog bites do not require medical attention, thousands of patients are treated in emergency departments (ED) and hospitals for dog bite injuries each year. Previous estimates of dog bite injuries in the ED and the hospital are based on data between 1993 and 1995.³

This Statistical Brief presents data from the Healthcare Cost and Utilization Project (HCUP) on dog bite-related emergency department (ED) visits and inpatient hospitalizations in 2008. Characteristics of all ED visits and hospitalizations that include the external cause of injury code (E Code) for dog bites are compared to the average injury-related ED visit and inpatient hospital stay. Age, hospital location, and patient residence are explored, as well as the most common principal diagnoses and procedures for dog bite-related hospital stays.

Findings

In 2008, there were 316,200 ED visits and 9,500 hospital stays related to dog bites (tables 1 and 2). This represents a rate of 103.9 ED visits and 3.1 hospital stays per 100,000 population. On average, every day there were 866 ED visits and 26 hospitalizations related to dog bites.

Figure 1 shows the trend in dog bite-related hospitalizations between 1993 and 2008. The overall trend through this 16-year time period shows an 86.3 percent increase in dog bite-

¹ U.S. Pet Ownership Statistics. The Humane Society of the United States. December 2009. http://www.humanesociety.org/issues/pet_overpopulation/facts/pet_ownership_statistics.html (accessed September 28, 2010).

² Dog Bite Prevention. Injury Prevention & Control: Home and Recreational Safety. Centers for Disease Control and Prevention. May 2009. <http://www.cdc.gov/HomeandRecreationalSafety/Dog-Bites/biteprevention.html> (accessed September 28, 2010).

³ Weiss HB, Friedman DI, Coben JH. Incidence of dog bite injuries treated in emergency departments. *JAMA* 1998;279:51–53. Quinlan KP, Sacks JJ. Hospitalizations for dog bite injuries. *JAMA*. 1999; 281:232–233

Highlights

- In 2008, about 316,200 ED visits involved a dog bite, a rate of 103.9 visits per 100,000 population. Approximately 9,500 hospital stays involved a dog bite, a rate of 3.1 stays per 100,000 population.
- Males were seen in the ED at a higher rate for dog bites (110.4 per 100,000) than were females (97.8 per 100,000), while there were no gender differences in dog bite-related hospital stays.
- The average cost of a dog bite-related hospital stay was \$18,200, approximately 50 percent higher than the average injury-related hospital stay.
- Over 40 percent of ED visits and inpatient stays that involved a dog bite were billed to private insurance (44.7 and 42.9 percent, respectively).
- Nearly three-quarters of dog bite-related ED visits were for patients 44 and younger (73.1 percent), while only about half (51.1 percent) of dog bite-related hospital stays were for this age group.
- There were 4 times as many dog bite-related ED visits and 3 times as many hospital stays in rural areas than in urban areas.
- Dog bite-related ED visits were highest in the Midwest (109.9 visits per 100,000 population) and Northeast (108.5 visits) and lowest in the West (93.0 visits), while dog bite-related hospitalizations were highest in the Northeast (3.9 stays per 100,000 population) and lowest in the West (2.5 stays). These differences are similar to all injuries.
- Common principal diagnoses for dog bite-related hospitalizations included skin and subcutaneous tissue infections; open wounds of extremities; open wounds of head, neck, and trunk; and fractures of upper limbs.

related hospital stays, with an apparent peak in 1995. The rate of hospitalization increased by 55 percent over the 16 year period, as shown in figure 2, from 2.0 to 3.1 per 100,000.⁴

About 2.5 percent of patients seen in the ED for dog bites were admitted to the hospital—compared to 8.0 percent for the average ED visit (table 1). Dog bite-related hospitalizations rarely resulted in death (table 2)—0.5 percent of dog bite patients died in the hospital, compared to 2.5 percent of all injury-related hospitalizations. Most dog bite-related hospitalizations resulted in a routine discharge (84.9 percent compared to 50.4 percent for the average injury-related hospitalization).

Patient and utilization characteristics for dog bite-related ED visits and inpatient stays

As shown in table 1, males were seen in the ED for dog bites at a higher rate than females (110.4 versus 97.8 visits per 100,000 population, respectively). On the other hand, table 2 shows that dog bite-related inpatient hospitalizations were distributed nearly evenly by sex—both males and females had a rate of 3.1 stays per 100,000 population.

The average cost of a dog bite-related inpatient stay was \$18,200 (table 2), about 50 percent higher than the cost of the average injury-related hospitalization (\$12,100). The average length of stay was 3.3 days—more than 2 days shorter than the average injury-related hospitalization of 5.5 days. The average cost per day for a dog bite-related hospitalization was 2.5 times that of the average injury-related hospitalization (\$5,500 per day versus \$2,200). The aggregate cost for dog bite-related inpatient stays in the U.S. was \$53.9 million.⁵

Dog bite-related ED visits and inpatient stays by age

The average age of patients seen in the ED for dog bites was 29.5 years, compared to 35.3 years for all injury-related ED visits. For dog bite-related inpatient hospitalizations, patients averaged 41.2 years, about 16 years younger than the average injury-related hospitalized patient (57.2 years).

Table 1 shows that 73.1 percent of dog bite-related ED visits were for patients younger than 45 years (38.0 percent were for patients younger than 18 years and 35.1 percent were for 18–44 year olds). Only 7.3 percent of patients with dog bite-related ED visits were 65 and older. Table 2 shows a different pattern—only about half of dog bite-related inpatient stays were for patients younger than 45 and elderly patients (65 and older) comprised 18.2 percent of all dog bite-related inpatient stays.

Figure 3 shows that the highest rates of dog bite-related ED visits were for children under 10 years old—199.3 visits per 100,000 for 5–9 year olds and 175.0 per 100,000 for children under 5. Those 85 years and older had the lowest rate of ED visits (44.9 visits per 100,000 population).

In contrast, hospitalizations for dog bites show a different pattern with higher rates of hospital stays for the elderly (figure 4). The hospitalization rate for children younger than 5 years was 4.0 per 100,000 population, and was lower for every age group until 65 plus, for whom the rate was 4.5 per 100,000 for 65–84 year olds and 4.2 for patients 85 and older.

Dog bite-related ED visits and inpatient stays by payer

Private insurance was the primary payer for 44.7 percent of dog bite-related ED visits and 42.9 percent of hospital stays (figure 5). Medicaid accounted for 19.5 percent of ED visits and 17.5 percent of hospital stays. Uninsured patients accounted for 19.1 percent of ED visits but only 12.6 percent of hospital stays. On the other hand, patients covered by Medicare made up only 8.7 percent of all dog bite-related ED visits but 19.9 percent of hospitalizations.

ED visits and inpatient stays by region and patient location

Figure 6 shows that the rate of dog bite-related ED visits was highest in the Midwest and Northeast (109.9 and 108.5 visits per 100,000 population, respectively) and lowest in the West (93.0 per 100,000).

⁴ The rate of ED visits shown here for 2008 (103.9 per 100,000 population) is lower than reported for the 1993–1995 time period in a previous study (129 per 100,000); ³ however, the apparent peak in hospitalizations in 1995 shown here may reflect a peak in ED visits in 1995 as well, resulting in a higher rate for the 1993–1995 period.

⁵ Dog bites are not recorded as principal diagnoses in hospital administrative records. Thus, the cost per stay and encounter may involve costs associated with other diagnoses and procedures. Costs for emergency department visits are not provided because of the large amount of missing data on ED charges.

For dog bite-related hospitalizations (figure 7), the Northeast had the highest rate (3.9 stays per 100,000 population) and the West the lowest (2.5 stays per 100,000 population).

Table 1 shows dog bite-related ED visits by patient residence. For patients who lived in rural areas, the rate of dog bite-related ED visits was 119.3 per 100,000 population, about 4 times higher than in urban areas (large central, large fringe, and medium and small metropolitan designations) where the rate was 29.4 per 100,000 population. A similar pattern was seen in dog bite-related hospitalizations. As shown in table 2, the rate of hospitalization for patients in rural areas was 2.9 stays per 100,000 population, 3 times higher than in urban areas where the rate was less than one stay per 100,000 population. In contrast, for all injury-related ED visits and hospitalizations, the rates for rural patients were only about 1.3 times higher than for urban patients.

Diagnoses and procedures for dog bite-related inpatient stays

Table 3 shows the principal diagnoses for dog bite-related hospitalizations. About 2 out of every 5 dog bite-related hospital stays (43.2 percent) had a principal diagnosis of skin and subcutaneous tissue infections, more than one-fifth (22.1 percent) were for open wounds of extremities, and 10.5 percent were for open wounds of the head, neck, and trunk. Other principal diagnoses included fractures of upper limbs, infective arthritis and osteomyelitis, septicemia, crushing injury or internal injury, and fracture of lower limbs.

More than half (57.9 percent) of dog bite-related hospitalizations involved a surgical procedure. Table 4 presents the top 10 all-listed procedures. The most frequent procedure was debridement of wound. Other procedures included suture of skin and subcutaneous tissue, incision and drainage of skin and subcutaneous tissue, and skin grafts.

Data Source

The estimates in this Statistical Brief are based upon data from the HCUP 2008 Nationwide Inpatient Sample (NIS) and the 2008 Nationwide Emergency Department Sample (NEDS). Historical inpatient data were drawn from the 1993–2007 NIS. The statistics were generated from HCUPnet, a free, online query system that provides users with immediate access to largest set of publicly available, all-payer national, regional, and state-level hospital care databases from HCUP.

Supplemental source included data on regional population estimates from “Table 1: Annual Estimates of the Resident Population for the United States, Regions, States, and Puerto Rico: April 1, 2000 to July 1, 2009 (NST-EST2009-01)”, Population Division, U.S. Census Bureau, Release date: December 2009 (<http://www.census.gov/popest/states/NST-ann-est.html>).

Definitions

Diagnoses, ICD-9-CM, and Clinical Classifications Software (CCS)

The principal diagnosis is that condition established after study to be chiefly responsible for the patient’s admission to the hospital. Secondary diagnoses are concomitant conditions that coexist at the time of admission or that develop during the stay.

ICD-9-CM is the International Classification of Diseases, Ninth Revision, Clinical Modification, which assigns numeric codes to diagnoses. There are about 13,600 ICD-9-CM diagnosis codes.

CCS categorizes ICD-9-CM diagnoses into a manageable number of clinically meaningful categories.⁶ This “clinical grouper” makes it easier to quickly understand patterns of diagnoses and procedures.

Case definition

The ICD-9-CM code defining Dog Bites is E906.0.

Injuries were defined in a manner consistent with the State and Territorial Injury Prevention Directors Association’s (STIPDA) Consensus Recommendations for Using Hospital Discharge Data for Injury

⁶ HCUP CCS. Healthcare Cost and Utilization Project (HCUP). December 2009. U.S. Agency for Healthcare Research and Quality, Rockville, MD. www.hcup-us.ahrq.gov/toolssoftware/ccs/ccs.jsp

Surveillance.⁷ Records with an all-listed ICD-9-CM diagnosis code in the range of 800–909.2, 909.4, 909.9, 910–994.9, 995.5–995.59, and 995.80–995.85 were identified as injury hospitalizations. Although not used in this Brief, there are other common definitions of injury developed by various sources, such as the American College of Surgeons' National Trauma Data Bank (<http://www.facs.org/trauma/ntdb.html>) and the National Center for Health Statistics' Web report from the National Hospital Discharge Survey (<http://www.cdc.gov/nchs/data/ad/ad371.pdf>).

Types of hospitals included in HCUP

HCUP is based on data from community hospitals, defined as short-term, non-Federal, general and other hospitals, excluding hospital units of other institutions (e.g., prisons). HCUP data include OB-GYN, ENT, orthopedic, cancer, pediatric, public, and academic medical hospitals. They exclude long-term care, rehabilitation, psychiatric, and alcoholism and chemical dependency hospitals, but these types of discharges are included if they are from community hospitals.

Unit of analysis

The unit of analysis is the hospital discharge (i.e., the hospital stay), not a person or patient. This means that a person who is admitted to the hospital multiple times in one year will be counted each time as a separate "discharge" from the hospital.

Costs and charges

Total hospital charges were converted to costs using HCUP Cost-to-Charge Ratios based on hospital accounting reports from the Centers for Medicare and Medicaid Services (CMS).⁸ Costs will tend to reflect the actual costs of production, while charges represent what the hospital billed for the case. For each hospital, a hospital-wide cost-to-charge ratio is used because detailed charges are not available across all HCUP States. Hospital charges reflect the amount the hospital charged for the entire hospital stay and does not include professional (physician) fees. For the purposes of this Statistical Brief, costs are reported to the nearest hundred.

Urban-rural location

Urban-rural location is one of six categories as defined by the National Center for Health Statistics:

- Large Central Metropolitan: Central counties of metropolitan areas with a population of 1 million or greater
- Large Fringe Metropolitan: Fringe counties of counties of metropolitan areas with a population of 1 million or greater
- Medium Metropolitan: Counties in metro area of 250,000-999,999 population
- Small Metropolitan: Counties in metro areas of 50,000-249,999 population
- Micropolitan: Micropolitan counties, i.e. a non-metropolitan county with an area of 10,000 or more population
- Non-core: Non-metropolitan and non-micropolitan counties

The cut-off for each location is determined using demographic data obtained from Claritas, Inc. (San Diego, CA).

Payer

Payer is the expected primary payer for the hospital stay. To make coding uniform across all HCUP data sources, payer combines detailed categories into more general groups:

- Medicare includes fee-for-service and managed care Medicare patients.
- Medicaid includes fee-for-service and managed care Medicaid patients. Patients covered by the State Children's Health Insurance Program (SCHIP) may be included here. Because most state data do not identify SCHIP patients specifically, it is not possible to present this information separately.

⁷ Injury Surveillance Workgroup. Consensus Recommendations for Using Hospital Discharge Data for Injury Surveillance. Online. 2003. State and Territorial Injury Prevention Directors Association. <http://www.nahdo.org/documents/hdd.pdf> (Accessed November 9, 2010).

⁸ HCUP Cost-to-Charge Ratio Files (CCR). Healthcare Cost and Utilization Project (HCUP). 2001–2008. U.S. Agency for Healthcare Research and Quality, Rockville, MD. www.hcup-us.ahrq.gov/db/state/costtocharge.jsp.

- Private insurance includes Blue Cross, commercial carriers, and private HMOs and PPOs.
- Other includes Workers' Compensation, TRICARE/CHAMPUS, CHAMPVA, Title V, and other government programs.
- Uninsured includes an insurance status of "self-pay" and "no charge."

When more than one payer is listed for a hospital discharge, the first-listed payer is used.

Region

Region is one of the four regions defined by the U.S. Census Bureau:

- Northeast: Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, and Pennsylvania
- Midwest: Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, and Kansas
- South: Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida, Kentucky, Tennessee, Alabama, Mississippi, Arkansas, Louisiana, Oklahoma, and Texas
- West: Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada, Washington, Oregon, California, Alaska, and Hawaii

Discharge status

Discharge status indicates the disposition of the patient at discharge from the hospital, and includes the following six categories: routine (to home), transfer to another short-term hospital, other transfers (including skilled nursing facility, intermediate care, and another type of facility such as a nursing home), home health care, against medical advice (AMA), or died in the hospital.

About HCUP

HCUP is a family of powerful health care databases, software tools, and products for advancing research. Sponsored by the Agency for Healthcare Research and Quality (AHRQ), HCUP includes the largest all-payer encounter-level collection of longitudinal health care data (inpatient, ambulatory surgery, and emergency department) in the United States, beginning in 1988. HCUP is a Federal-State-Industry Partnership that brings together the data collection efforts of many organizations—such as State data organizations, hospital associations, private data organizations, and the Federal government—to create a national information resource.

HCUP would not be possible without the contributions of the following data collection Partners from across the United States:

Arizona Department of Health Services
Arkansas Department of Health
California Office of Statewide Health Planning and Development
Colorado Hospital Association
Connecticut Hospital Association
Florida Agency for Health Care Administration
Georgia Hospital Association
Hawaii Health Information Corporation
Illinois Department of Public Health
Indiana Hospital Association
Iowa Hospital Association
Kansas Hospital Association
Kentucky Cabinet for Health and Family Services
Louisiana Department of Health and Hospitals
Maine Health Data Organization
Maryland Health Services Cost Review Commission
Massachusetts Division of Health Care Finance and Policy
Michigan Health & Hospital Association
Minnesota Hospital Association

Missouri Hospital Industry Data Institute
Montana MHA—An Association of Montana Health Care Providers
Nebraska Hospital Association
Nevada Department of Health and Human Services
New Hampshire Department of Health & Human Services
New Jersey Department of Health and Senior Services
New Mexico Health Policy Commission
New York State Department of Health
North Carolina Department of Health and Human Services
Ohio Hospital Association
Oklahoma State Department of Health
Oregon Association of Hospitals and Health Systems
Pennsylvania Health Care Cost Containment Council
Rhode Island Department of Health
South Carolina State Budget & Control Board
South Dakota Association of Healthcare Organizations
Tennessee Hospital Association
Texas Department of State Health Services
Utah Department of Health
Vermont Association of Hospitals and Health Systems
Virginia Health Information
Washington State Department of Health
West Virginia Health Care Authority
Wisconsin Department of Health Services
Wyoming Hospital Association

About the NIS

The HCUP Nationwide Inpatient Sample (NIS) is a nationwide database of hospital inpatient stays. The NIS is nationally representative of all community hospitals (i.e., short-term, non-Federal, non-rehabilitation hospitals). The NIS is a sample of hospitals and includes all patients from each hospital, regardless of payer. It is drawn from a sampling frame that contains hospitals comprising about 95 percent of all discharges in the United States. The vast size of the NIS allows the study of topics at both the national and regional levels for specific subgroups of patients. In addition, NIS data are standardized across years to facilitate ease of use.

About the NEDS

The HCUP Nationwide Emergency Department Database (NEDS) is a unique and powerful database that yields national estimates of emergency department (ED) visits. The NEDS was constructed using records from both the HCUP State Emergency Department Databases (SEDD) and the State Inpatient Databases (SID). The SEDD capture information on ED visits that do not result in an admission (i.e., treat-and-release visits and transfers to another hospital); the SID contain information on patients initially seen in the emergency room and then admitted to the same hospital. The NEDS was created to enable analyses of ED utilization patterns and support public health professionals, administrators, policymakers, and clinicians in their decision-making regarding this critical source of care.

About HCUPnet

HCUPnet is an online query system that offers instant access to the largest set of all-payer health care databases that are publicly available. HCUPnet has an easy step-by-step query system, allowing for tables and graphs to be generated on national and regional statistics, as well as trends for community hospitals in the U.S. HCUPnet generates statistics using data from HCUP's Nationwide Inpatient Sample (NIS), the Kids' Inpatient Database (KID), the Nationwide Emergency Department Sample (NEDS), the State Inpatient Databases (SID) and the State Emergency Department Databases (SEDD).

For More Information

For more information about HCUP, visit www.hcup-us.ahrq.gov.

For additional HCUP statistics, visit HCUPnet, our interactive query system, at www.hcup.ahrq.gov.

For information on other hospitalizations in the U.S., download HCUP Facts and Figures: Statistics on Hospital-based Care in the United States in 2008, located at <http://www.hcup-us.ahrq.gov/reports.jsp>.

For a detailed description of HCUP, more information on the design of the NIS, and methods to calculate estimates, please refer to the following publications:

Steiner, C., Elixhauser, A., Schnaier, J. *The Healthcare Cost and Utilization Project: An Overview*. Effective Clinical Practice 5(3):143–51, 2002.

Introduction to the HCUP Nationwide Inpatient Sample, 2008. Online. May 2010. U.S. Agency for Healthcare Research and Quality. http://hcup-us.ahrq.gov/db/nation/nis/NIS_2008_INTRODUCTION.pdf

Introduction to the HCUP Nationwide Emergency Department Sample, 2008. Online. October 2010. U.S. Agency for Healthcare Research and Quality. <http://hcup-us.ahrq.gov/db/nation/neds/NEDS2008Introductionv3.pdf>

Barrett M, Hunter K, Coffey R, Levit K. Population Denominator Data for User with the HCUP Databases (Updated with 2009 Population Data). HCUP Methods Series Report #2010-02. Online. April 2010. U.S. Agency for Healthcare Research and Quality. http://hcup-us.ahrq.gov/reports/2010_02.pdf

Houchens, R., Elixhauser, A. *Final Report on Calculating Nationwide Inpatient Sample (NIS) Variances, 2001*. HCUP Methods Series Report #2003-2. Online. June 2005 (revised June 6, 2005). U.S. Agency for Healthcare Research and Quality. <http://www.hcup-us.ahrq.gov/reports/CalculatingNISVariances200106092005.pdf>

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AHRQ welcomes questions and comments from readers of this publication who are interested in obtaining more information about access, cost, use, financing, and quality of health care in the United States. We also invite you to tell us how you are using this Statistical Brief and other HCUP data and tools, and to share suggestions on how HCUP products might be enhanced to further meet your needs. Please e-mail us at hcup@ahrq.gov or send a letter to the address below:

Irene Fraser, Ph.D., Director
Center for Delivery, Organization, and Markets
Agency for Healthcare Research and Quality
540 Gaither Road
Rockville, MD 20850

Table 1. Characteristics of dog bite-related emergency department visits, 2008

	Dog bite-related ED encounters	All injury-related ED encounters
Total number of discharges	316,200	30,119,100
ED visits per day	866	82,518
Rate per 100,000 population	103.9	9,895.4
Males, rate per 100,000 population	110.4	10,662.2
Females, rate per 100,000 population	97.8	9,165.2
Utilization Characteristics		
Percentage treated and released	97.5	90.1
Percentage admitted to the hospital	2.5	8.0
Percentage died in ED	---	0.1
Percentage died in hospital	0.01	0.2
Patient Characteristics		
Mean age, years	29.5	35.3
Percentage by age group:		
<18 years	38.0	25.9
18 to 44 years	35.1	41.5
45 to 64 years	19.6	19.2
65 to 84 years	6.5	9.8
85 years and older	0.8	3.6
Percentage of female patients	47.7	46.9
Patient Residence[†]		
Urban areas (large central, large fringe, and small and medium metropolitan), rate per 100,000 population	29.4	9,248.7
Rural areas (micropolitan and noncore), rate per 100,000 population	119.3	12,771.0

Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Emergency Department Sample, 2008

[†] Patients with residence data missing were excluded from the table

Table 2. Characteristics of dog bite-related hospital stays, 2008

	Dog bite-related hospital stays	All injury-related hospital stays
Total number of discharges	9,500	2,987,200
Hospitalizations per day	26	8,184
Rate per 100,000 population	3.1	981.4
Males, rate per 100,000 population	3.1	963.3
Females, rate per 100,000 population	3.1	993.0
Utilization Characteristics		
Mean length of stay, days	3.3	5.5
Average cost per visit/hospitalization	\$18,200	\$12,100
Average cost per day	\$5,500	\$2,200
Aggregate costs	\$53.9 million	\$36.2 billion
Percentage died in hospital	0.5	2.5
Percentage routine discharge	84.9	50.4
Patient Characteristics		
Mean age, years	41.2	57.2
Percentage by age group:		
<18 years	21.5	6.7
18 to 44 years	29.6	24.6
45 to 64 years	29.9	24.3
65 to 84 years	15.7	29.3
85 years and older	2.5	15.1
Percentage of patients female	50.5	51.2
Patient Residence[†]		
Urban areas (large central, large fringe, and small and medium metropolitan), rate per 100,000 population	0.9	906.3
Rural areas (micropolitan and noncore), rate per 100,000 population	2.9	1,149.3

Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 2008

[†] Patients with residence data missing were excluded from the table

Table 3. Top 10 principal diagnoses for dog bite-related hospital stays, 2008

Rank	Diagnosis	Number of stays
	All dog bite-related stays (percentage)	9,500 (100.0)
1	Skin and subcutaneous tissue infections	4,100 (43.2)
2	Open wounds of extremities	2,100 (22.1)
3	Open wounds of head; neck; and trunk	1,000 (10.5)
4	Fracture of upper limb	500 (5.3)
5	Other connective tissue disease	200 (2.1)
6	Infective arthritis and osteomyelitis	100 (1.1)
7	Other injuries and conditions due to external causes	100 (1.1)
8	Septicemia	100 (1.1)
9	Crushing injury or internal injury	100 (1.1)
10	Fracture of lower limb	100 (1.1)

Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 2008

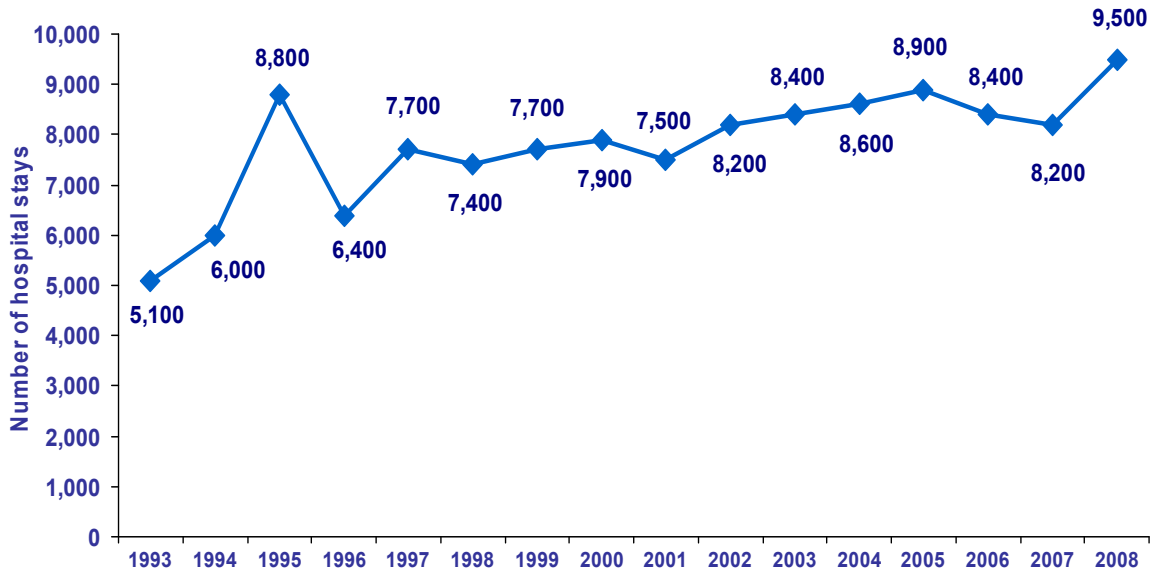
Table 4. Top 10 all-listed procedures for dog bite-related hospital stays, 2008

Rank	Procedure	Number of procedures
1	Debridement of wound; infection or burn	1,400
2	Suture of skin and subcutaneous tissue	1,200
3	Therapeutic procedures on muscles and tendons	1,100
4	Incision and drainage; skin and subcutaneous tissue	1,100
5	Skin graft	300
6	Fracture and dislocation procedures other than for face, forearm, legs	300
7	Therapeutic operating room procedures on joints	300
8	Other non-OR therapeutic procedures on nose, mouth and pharynx	300
9	Other therapeutic procedures on eyelids, conjunctiva, cornea	200
10	Traction, splints, and other wound care	200

Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 2008



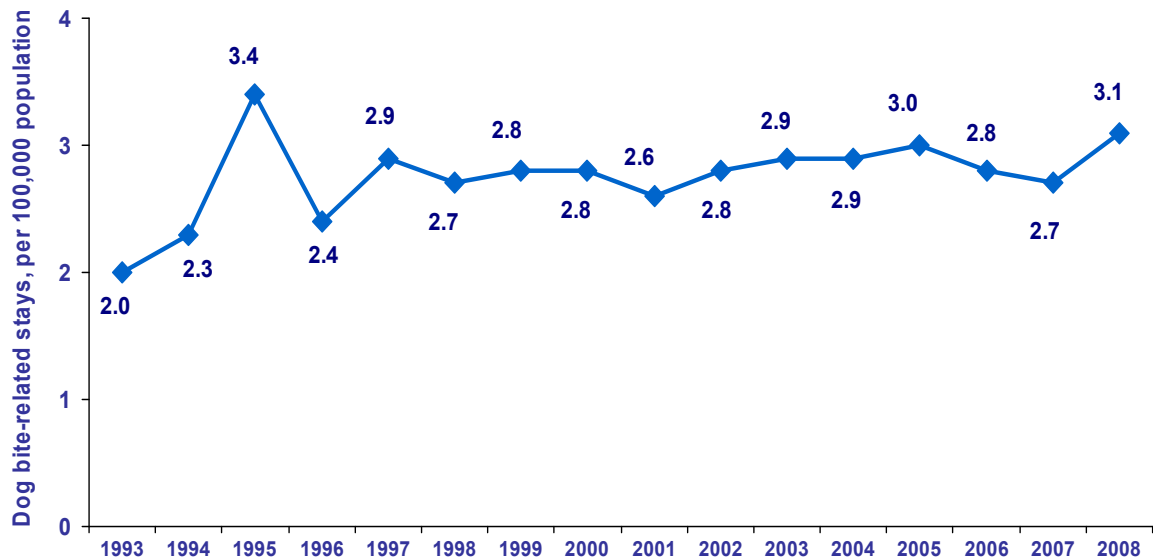
Figure 1. The number of dog bite-related hospitalizations increased between 1993 and 2008



Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 1993–2008



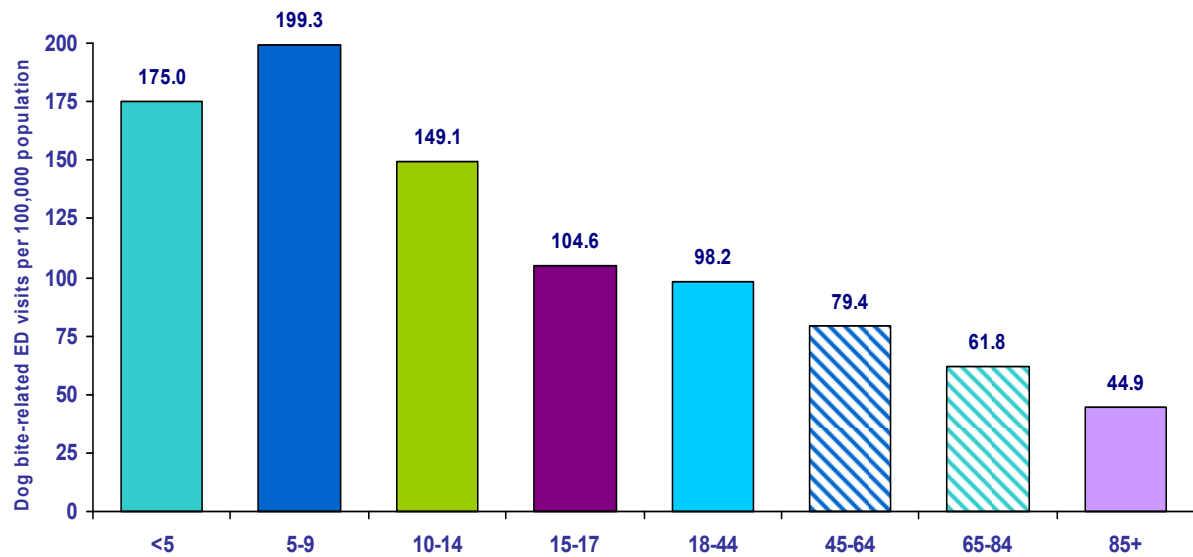
Figure 2. Overall, the rate of dog bite-related hospitalizations increased between 1993 and 2008, peaking in 1995



Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 1993–2008



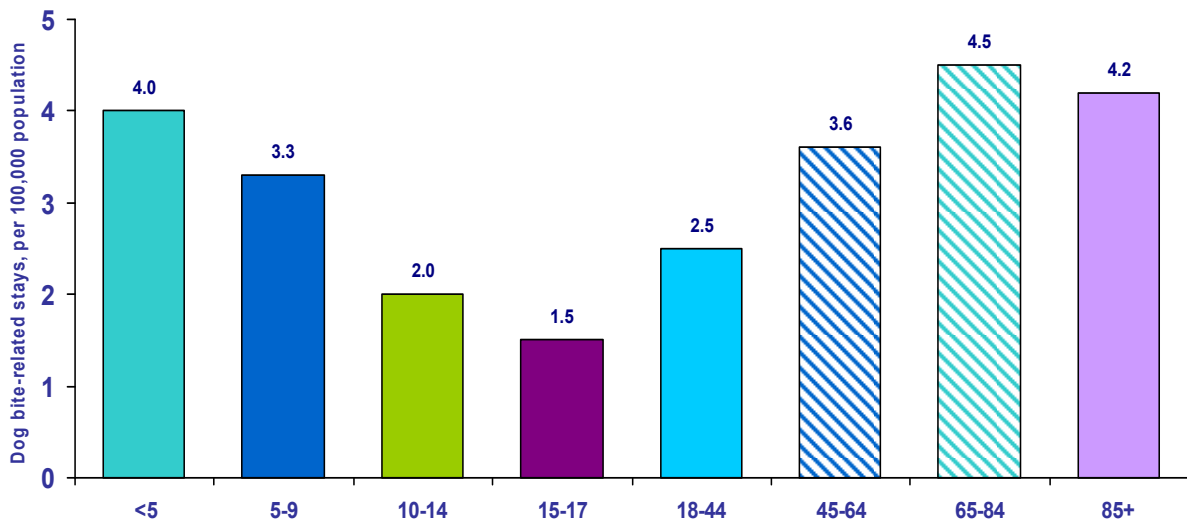
Figure 3. Rates of dog bite-related ED visits were highest for patients ages 5-9 years and lowest for those ages 85 and older, 2008



Source : AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Emergency Department Sample, 2008. Data based on all-listed encounters.



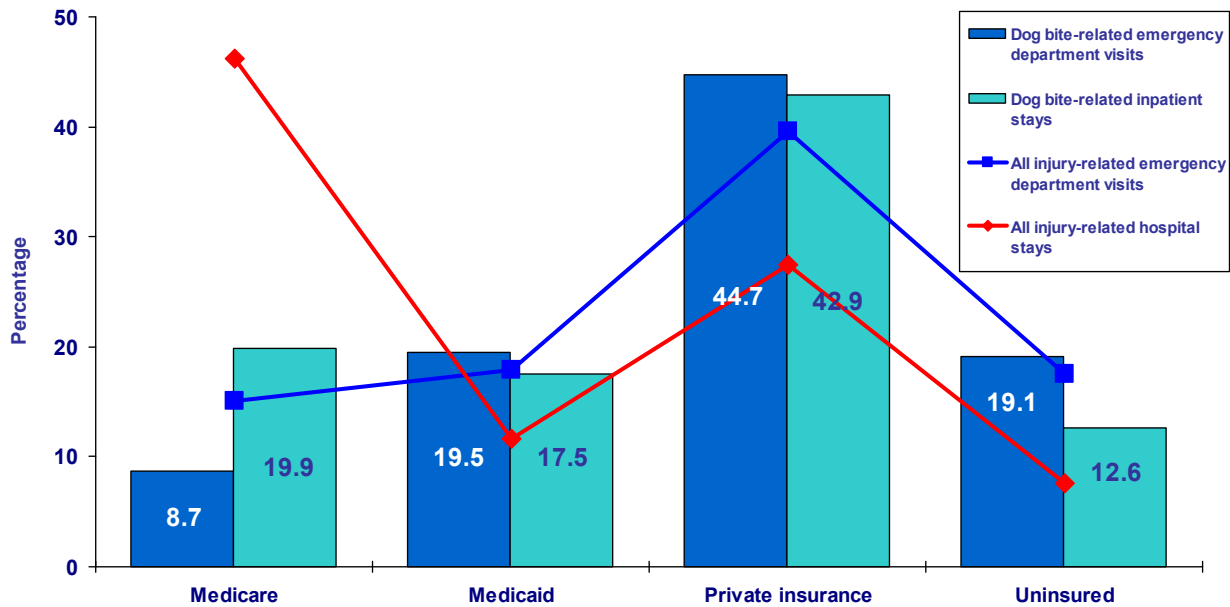
Figure 4. The rate of dog bite-related hospitalizations was highest for patients ages 65-84 years and lowest for those ages 15-17 years, 2008



Source : AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 2008. Data based on all-listed stays.



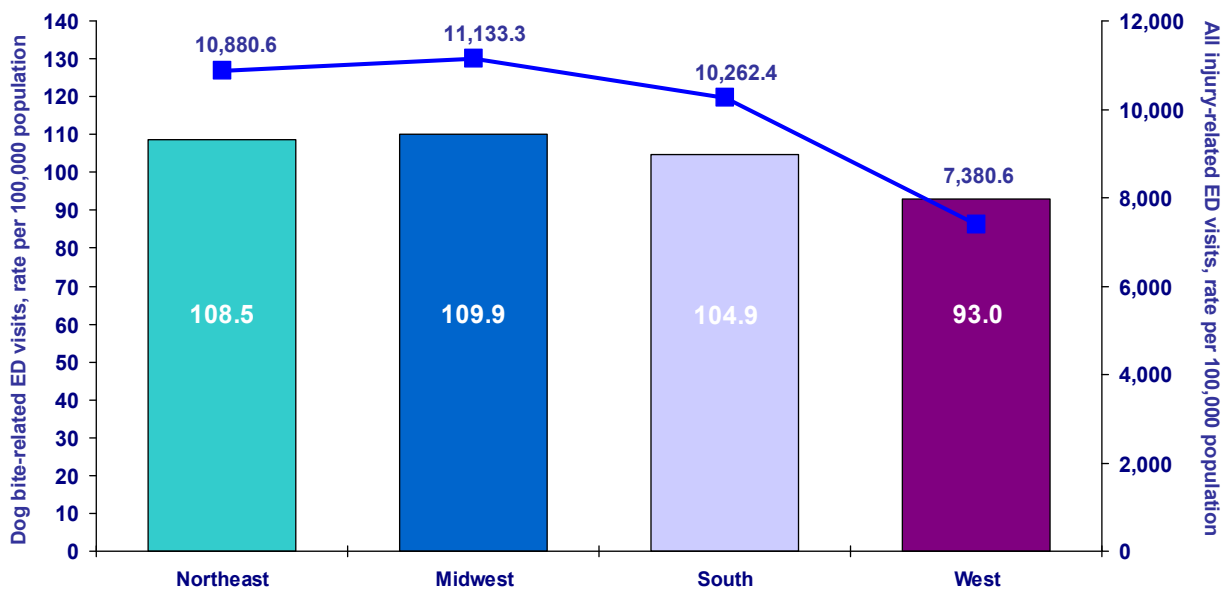
Figure 5. Private insurance was the primary expected payer for more than two-fifths of dog bite-related ED visits and hospitalizations, 2008



Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Emergency Department Sample, 2008, and Nationwide Inpatient Sample, 2008



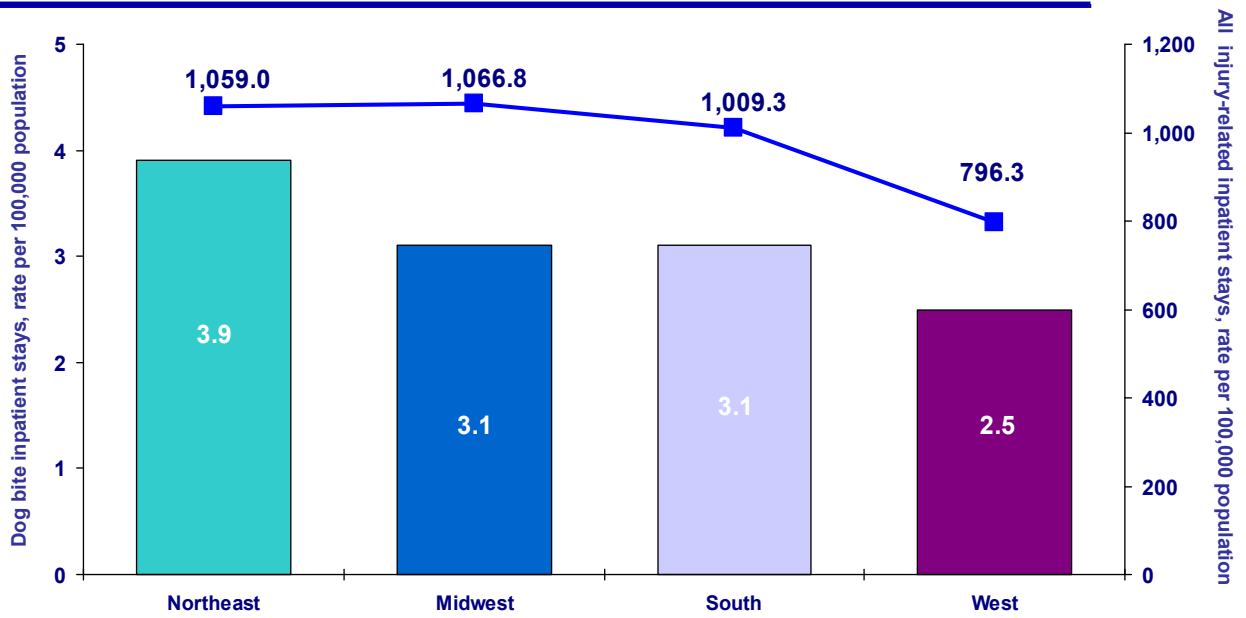
Figure 6. The Northeast and Midwest had the highest rates of dog bite-related ED visits and the West had the lowest, 2008



Source: AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Emergency Department Sample, 2008



Figure 7. The Northeast had the highest rate of hospitalizations and the West had the lowest, 2008



Source : AHRQ, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample, 2008