

All Animal Bites v1

Definition Factsheet & Technical Brief

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Definition Purpose: Created by the CDC National Syndromic Surveillance Program (NSSP) for use with emergency department data to develop queries for all National Notifiable Diseases defined by the National Notifiable Diseases Surveillance System (NNDSS). Please note that while the disease queries are developed using the NNDSS case definition as the basis for identifying patient visits of interest, the queried patient visits themselves may or may not represent a case patient in NNDSS and further public health investigation will most often be required. This query is intended to be a version 1 and may be further improved upon by the NSSP community of practice in the future. This query is intended to be narrow and capture visits with specific terms to support greater monitoring and actionable public health data. More complex and/or broader queries may exist that more broadly capture symptoms or travel-based terms.

New or Revised Definition: New Definition

Date Added to ESSENCE: February 2025

Definition Description: Designed to capture emergency department visits with a diagnostic code or textual indicator of an animal bite from a mammal.

Use-Cases for Definition:

- ☒ Case-finding
- ☒ Trend monitoring
- ☐ Early outbreak detection

Justification: No query definition exists for animal bites. CDC wants to use emergency department data to monitor trends.

Data Source During Development: Emergency Department Visits. Chief Complaint Query Validation dataset (CCQV) in ESSENCE.

Development Methods:

1. The CDC team used the NNDSS case definition of "Animal Rabies" to identify diagnostic codes (International Classification of Diseases, 9th & 10th Revision (ICD-9-CM, ICD-10-CM), SNOMED Clinical Terms (CT)) and chief complaint free-text for syndrome development.
2. The codes and free text were then categorized as inclusion or exclusion terms. These terms were formatted for querying in ESSENCE.
3. Text analysis was conducted on the initial query to find additional inclusion or exclusion terms.
4. The query was cross-checked internally as NSSP and by CDC subject matter experts as needed.

Validation Methods: This definition is part of the collection of definitions created by CDC NSSP for the rapid reportables project. The rapid reportables project is led by the CDC NSSP team to create definitions for all nationally reportable diseases. These definitions focus on chief complaint text and diagnostic codes of the disease or its causative agents with no mention of symptoms. Select members of the Community of Practice were then asked to review line-level results for their jurisdictions and provide feedback to ensure the intended results of the definitions were met.

Definition Fields and Structure:

The Chief Complaint Discharge Diagnosis (CCDD) parsed field is used to query both the discharge diagnosis codes and chief complaint free text, and exclusions are incorporated as necessary.

- Inclusion based on animal bite chief complaint free text terms:
 - The visit is included if it contains:
 1. A chief complaint term related to bites – (“bite” or “bit ” or “bitt”) **AND**
 2. A chief complaint term related to mammals – (“animal” or “bat” or “beaver” or “badger” or “bunny” or “canine” or “cat” or “chipmunk” or “coyote” or “cow” or “deer” or “dog” or “donkey” or “ferret” or “fisher” or “fox” or “german shephard” or “german shepherd” or “goat” or “groundhog” or “ground hog” or “horse” or “K9” or “kitten” or “mammal” or “monkey” or “mongoose” or “mouse” or “otter” or “pig” or “pitbull” or “pit bull” or “porcupine” or “possum” or “puppy” or “rabbit” or “raccoon” or “racoon” or “ringtail” or “rodent” or “sheep” or “squirrel” or “skunk” or “weasel”) **OR**
- Inclusion based on ICD-10 discharge diagnosis codes related to animal bites:
 - The visit is included if it contains:
 1. A discharge diagnosis code for animal bite from rodents – (W53.01 or W53.11 or W53.21 or W53.81) **OR**
 2. A discharge diagnosis code for dog bite – (W54.0) **OR**
 3. A discharge diagnosis code for bites from cats, horses, cows, other hoof stock, pigs, raccoons, and other mammals – (W55.01 or W55.11 or W55.21 or W55.31 or W55.41 or W55.51 or W55.81) **OR**
- Inclusion based on ICD-9 discharge diagnosis codes related to animal bites:
 - The visit is included if it contains:
 1. A discharge diagnosis code for dog bite – (E9060) **OR**
 2. A discharge diagnosis code for rate bite – (E9061) **OR**
 3. A discharge diagnosis code for other animal bites – (E9063) **OR**
- Inclusion based on SNOMED discharge diagnosis codes related to animal bites:
 - The visit is included if it contains:
 1. A discharge diagnosis code for dog bite – (217697000) **OR**
 2. A discharge diagnosis code for cat bite – (217701002) **OR**
 3. A discharge diagnosis code for rat bite – (217698005) **OR**
 4. A discharge diagnosis code for Bite of pig (event) - (242614007)
 5. A discharge diagnosis code for Bite of mouse (event) - (242611004)
 6. A discharge diagnosis code for Bite of horse (event) - (242615008)
 7. A discharge diagnosis code for Bite of rabbit (event) - (242608000)
 8. A discharge diagnosis code for Bite of ferret (event) - (242612006)
 9. A discharge diagnosis code for Bite of rodent (event) - (242625003)
 10. A discharge diagnosis code for Bite of squirrel (event) - (770959008)
 11. A discharge diagnosis code for Bite of mammal (event) - (242606001) **ANDNOT**
- All the above must exclude:
 1. An ICD-10 discharge diagnosis code for Accidental bite by another person – (W50.3) **OR**
 2. An ICD-10 discharge diagnosis code for Bitten or stung by nonvenomous insect and other nonvenomous arthropods – (W57) **OR**
 3. An ICD-10 discharge diagnosis code for Bitten by nonvenomous snake – (W59.11) **OR**
 4. A chief complaint term related to insect and bug bites – (“insect” or “bug” or “spider” or “snake”) **OR**

5. A chief complaint term related to human bites – (“human” andnot “non human”)
6. A SNOMED CT discharge diagnosis code for Human bite (event) – (242605002) **OR**
7. A SNOMED CT discharge diagnosis code for Insect bite – wound (disorder) – (276433004) **OR**
8. A SNOMED CT discharge diagnosis code for Bite of spider (event) – (771257008) **OR**
9. A SNOMED CT discharge diagnosis code for Bite of insect (event) – (771191003) **OR**
10. A SNOMED CT discharge diagnosis code for Snake bite – wound – (283840005)

Detailed Definition Components

Table 1. *Inclusion and exclusion terms.*

Variable Type	Terms	Description
<i>Inclusions</i>		
Discharge Diagnosis: ICD-10-CM	W53.01	Bitten by mouse
	W53.11	Bitten by rat
	W53.21	Bitten by squirrel
	W53.81	Bitten by other rodent
	W54.0	Bitten by dog
	W55.01	Bitten by cat
	W55.11	Bitten by horse
	W55.21	Bitten by cow
	W55.31	Bitten by other hoof stock
	W55.41	Bitten by pig
	W55.51	Bitten by raccoon
	W55.81	Bitten by other mammals
Discharge Diagnosis: ICD-9-CM	E9060	Dog Bite
	E9061	Rat Bite
	E9063	Bite of other animal except arthropod
Discharge Diagnosis: SNOMED concepts	217697000	Dog bite (event)
	217701002	Cat bite (event)
	217698005	Rat bite (event)
	242614007	Bite of pig (event)
	242611004	Bite of mouse (event)
	242615008	Bite of horse (event)
	242608000	Bite of rabbit (event)
	242612006	Bite of ferret (event)
	242625003	Bite of rodent (event)
	770959008	Bite of squirrel (event)
	242606001	Bite of mammal (event)
Chief Complaint Terms – Nested Together with AND	bit	animal
	bite	bat
	bitt	beaver
		badger
		bunny
		canine
		cat
		chipmunk
		coyote
		cow
		deer
		dog
		donkey
		ferret
		fisher
		fox
		german shephard
		german shepherd

		goat
		groundhog
		ground hog
		horse
		K9
		kitten
		mammal
		monkey
		mongoose
		mouse
		otter
		pig
		pitbull
		pit bull
		porcupine
		possum
		puppy
		rabbit
		raccoon
		racoon
		rat
		ringtail
		rodent
		sheep
		squirrel
		skunk
		weasel
Exclusions		
Discharge Diagnosis: ICD-10-CM	W50.3	Accidental bite by another person
	W57	Bitten or stung by nonvenomous insect and other nonvenomous arthropods
	W59.11	Bitten by nonvenomous snake
Discharge Diagnosis: SNOMED concepts	242605002	Human bite (event)
	276433004	Insect bite – wound (disorder)
	771257008	Bite of spider (event)
	771191003	Bite of insect (event)
	283840005	Snake bite - wound
Chief Complaint Terms	insect	
	bug	
	spider	
	snake	
Chief Complaint Terms – Nested Together with ANDNOT	human	non human

Table 2. *ESSENCE* syntax

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(,^;W53[0128]1^,OR,^;W540^,OR,^;W55[0123458]1^,OR,^;217697000;^,OR,^;217701002;^,OR,^;21769
8005;^,OR,^;242614007;^,OR,^;242611004;^,OR,^;242615008;^,OR,^;242608000;^,OR,^;242612006;^,
OR,^;242625003;^,OR,^;770959008;^,OR,^;242606001;^,OR,^;E906[013];^,OR,^bit[te
]^,and,(,^animal^,OR,!bat!,OR,^beaver^,OR,^badger^,OR,^bunny^,OR,^canine^,OR,!cat!,OR,^chipmunk
^,OR,^coyote^,OR,^cow^,OR,^deer^,OR,^dog^,OR,^donkey^,OR,^ferret^,OR,^fisher^,OR,^fox^,OR,^ger
man sheph[ae]rd^,OR,^goat^,OR,^groundhog^,OR,^ground
hog^,OR,^horse^,OR,^K9^,OR,^kitten^,OR,^mammal^,OR,^monkey^,OR,^mongoose^,OR,^mouse^,OR,
^otter^,OR,^pig^,OR,^pitbull^,OR,^pit
bull^,OR,^porcupine^,OR,^possum^,OR,^puppy^,OR,^rabbit^,OR,^raccoon^,OR,^raccoon^,OR,^rat^,OR,^
ringtail^,OR,^rodent^,OR,^sheep^,OR,^squirrel^,OR,^skunk^,OR,^weasel^,),),ANDNOT,(,^insect^,OR,^b
ug^,OR,^spider^,OR,^snake^,OR,^human^,ANDNOT,^non
human^,OR,^;W503^,OR,^;W57^,OR,^;W5911^,OR,^;242605002;^,OR,^;276433004;^,OR,^;771257008;
^,OR,^;771191003;^,)
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