



Human Rabies Biologicals Supplied by the Texas Department of State Health Services

2020 Annual Report

Texas Health and Safety Code §826.025 and Texas Administrative Code Chapter 97, Subchapter E allow the Texas Department of State Health Services (DSHS) to supply rabies biologicals (vaccine and immune globulin) for people who have been exposed to rabid, or potentially rabid, animals. To make the biologicals available to Texas residents throughout the state, DSHS Public Health Region (PHR) offices may store and distribute rabies biologicals and some PHR offices partner with local health departments to serve as depots for storing and distributing biologicals. Surveillance data, including the demographic information on those who received the biologicals and the reasons the biologicals were distributed, are maintained by DSHS (mandated by §97.123, Texas Administrative Code, "Provision of Anti-Rabies Biologicals").

Some private sources—such as clinics, hospitals, pharmacies, and healthcare systems—directly provide rabies biologicals to patients. These sources do not supply surveillance information to DSHS and are not included in this summary.

Postexposure Rabies Prophylaxis

During 2020, rabies biologicals were distributed for postexposure prophylaxis (PEP) to 232 people, of whom 58 (25.0%) acquired the biologicals from DSHS PHR offices and 174 (75.0%) from depots. The reported total cost of the biologicals distributed from DSHS inventory was \$780,472 (\$515,201 for 735 vials [2 ml] of human rabies immune globulin [HRIG] and \$265,271 for 783 vials [1 ml] of vaccine). A full PEP series of biologicals (HRIG plus 4-5 doses of vaccine) was distributed to 131 people (56.5% of people receiving biologicals from DSHS inventory) at a total cost of \$666,492 and an average cost of \$5,088 per person (median: \$5,063; range: \$1,677-\$8,449).

Rabies biologicals were distributed to 231 (99.6%) Texas residents and 1 (0.4%) out-of-state resident (Oklahoma). Distribution of postexposure biologicals based on the PHR of patient residence is summarized in Figure 1. Distribution of rabies biologicals by month is shown in Figure 2.

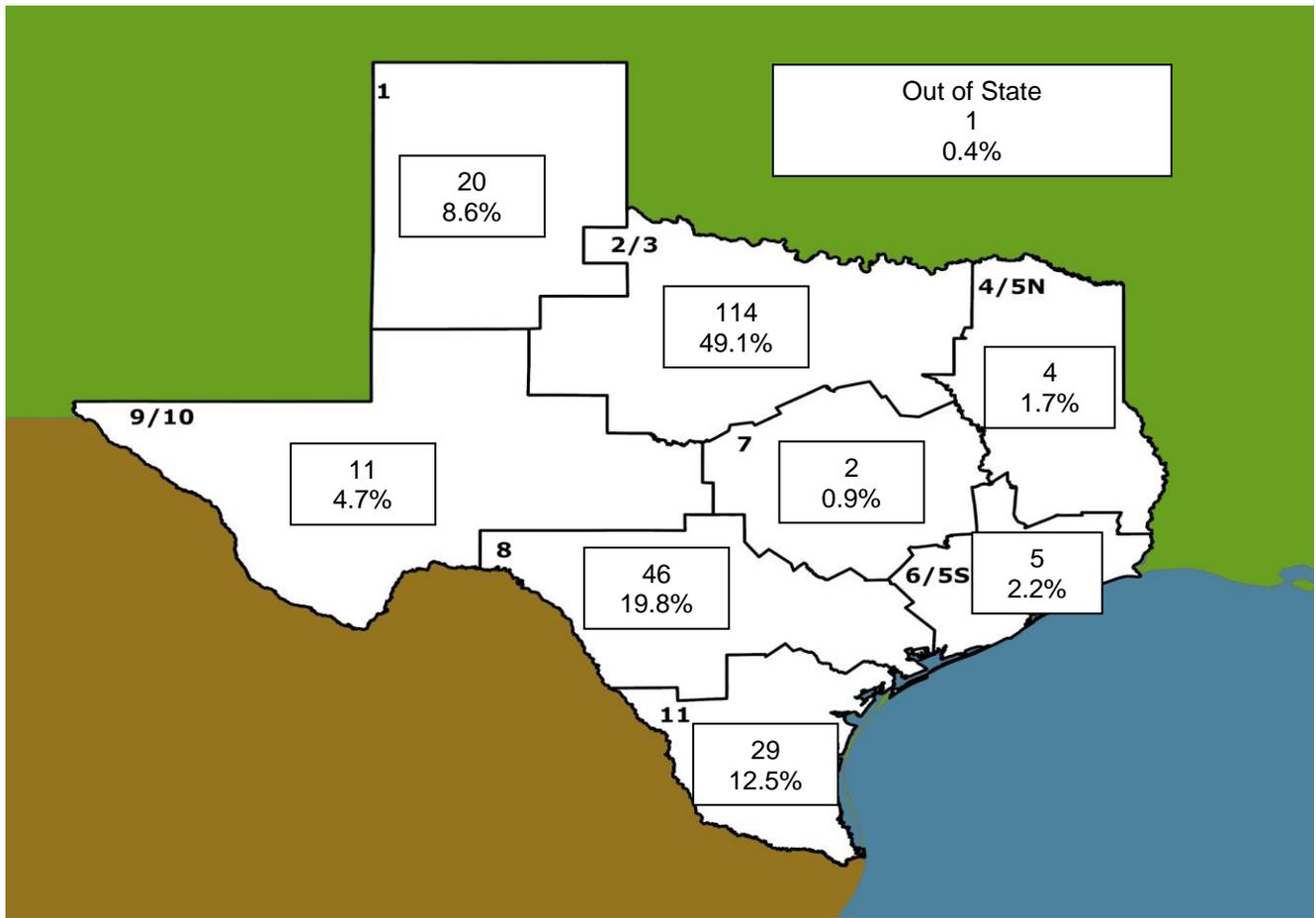


Figure 1. Number of People Receiving Rabies Biologicals by Public Health Region of Patient Residence, 2020

Figure 2. Number of People Receiving Rabies Biologicals by Month, 2020

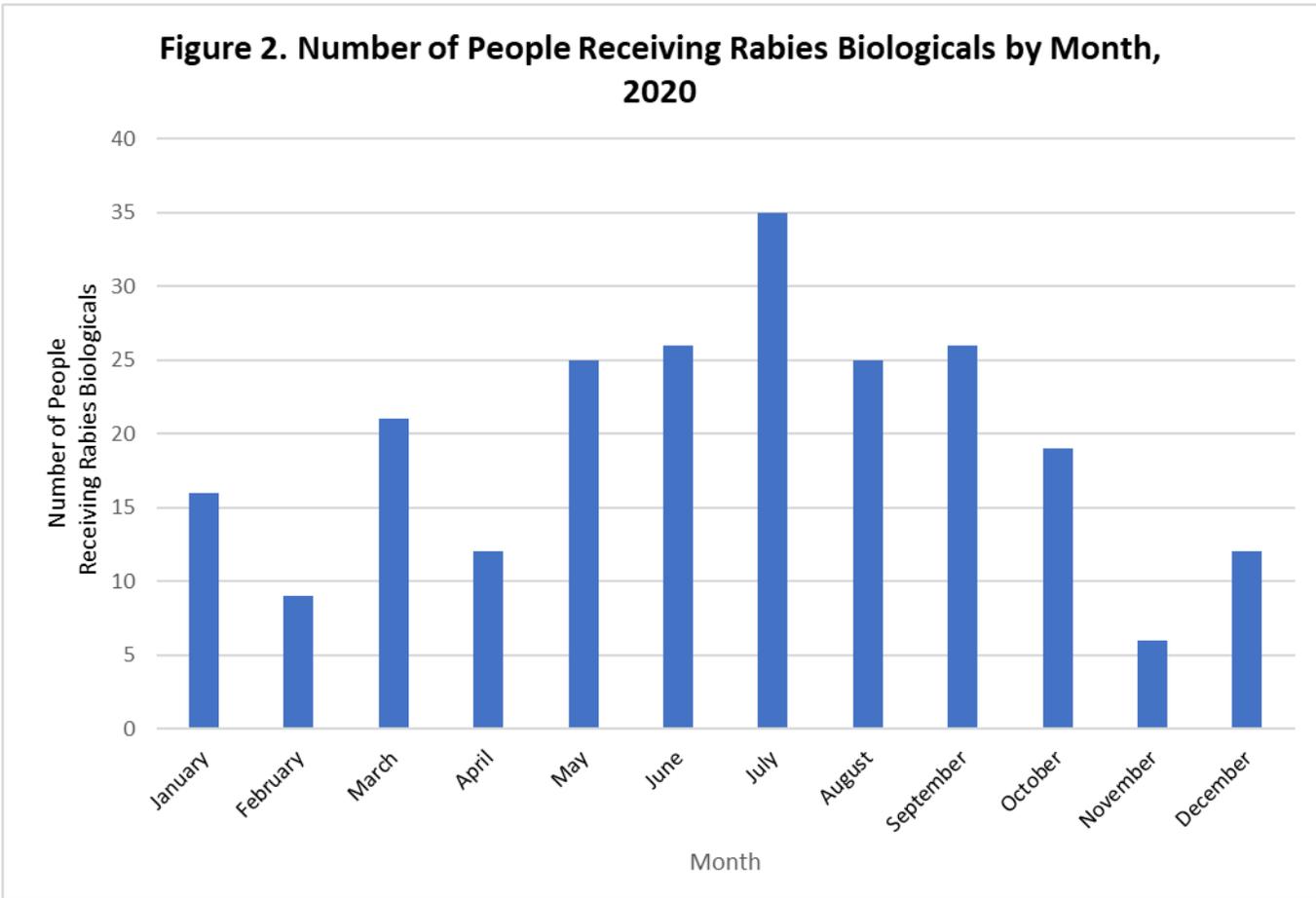


Table 1 lists the distribution of rabies biologicals by month and PHR of patient residence.

Month	Public Health Region									Out of State Resident	Total	%
	1	2/3	4/5N	6/5S	7	8	9/10	11				
January	4	7		2		2		1		16	6.9%	
February	1	5				2		1		9	3.9%	
March		9	4			4		4		21	9.1%	
April	1	8				3				12	5.2%	
May	4	16			1	2		1	1	25	10.8%	
June	2	16				3		5		26	11.2%	
July	1	21				6	6	1		35	15.1%	
August	3	10			1	5		6		25	10.8%	
September	3	6		1		11		5		26	11.2%	
October		9		1		3	4	2		19	8.2%	
November		3				3				6	2.6%	
December	1	4		1		2	1	3		12	5.2%	
Total	20	114	4	5	2	46	11	29	1	232	100.0%	
%	8.6%	49.1%	1.7%	2.2%	0.9%	19.8%	4.7%	12.5%	0.4%	100.0%		

Table 1. Number of People Receiving Rabies Biologicals by Month and Public Health Region of Patient Residence, 2020

The number of people receiving rabies biologicals by distribution site are listed in Table 2.

DSHS-Supplied Rabies Biologicals Distribution Site	Number of Persons Receiving Rabies Biologicals
DSHS Public Health Region 1	20
DSHS PHR 1 Regional Office - Amarillo	13
DSHS PHR 1 Regional Office - Lubbock	7
DSHS Public Health Region 2/3	120
Abilene-Taylor County Public Health District	50
Brownwood-Brown County Health Department	25
Collin County Healthcare Services	13
Denton County Health Department	2
DSHS PHR 3 Regional Office - Arlington	3
Grayson County Health Department	1
Wichita Falls-Wichita County Public Health District	26
DSHS Public Health Region 6/5S	5
Beaumont City Health Department	3
DSHS PHR 6/5S Regional Office - Houston	2
DSHS Public Health Region 8	48
DSHS - Del Rio	1
DSHS - Eagle Pass	3
DSHS Field Office - Maverick County	1
DSHS Field Office - Uvalde County	5
DSHS Field Office - Val Verde County	1
San Antonio Metro Health District	30
Victoria County Public Health Department	7
DSHS Public Health Region 9/10	10
DSHS Nursing Department - Brady	10
DSHS Public Health Region 11	29
City of Laredo Health Department	5
DSHS PHR 11 Regional Office - Harlingen	4
DSHS Sub-Office - Corpus Christi	8
Hidalgo County Health Department	12
Statewide Total	232

Table 2. Number of People Receiving Rabies Biologicals by Distribution Site, 2020

The species of exposing animal was reported for 231 exposures; the species was not listed for 1 exposure. Of the 231 exposures for which species was reported, 73 (31.6%) were designated as being of high risk for transmitting rabies (bats, coyotes, foxes, raccoons, and skunks) and 158 (68.4%) were classified as neither high nor low risk for transmitting rabies (Figure 3). Although some species are considered low risk for rabies, all mammals can become infected with and transmit rabies. A risk assessment process, which includes many other factors besides species of exposing animal, is utilized to determine a general level of rabies transmission risk for a given exposure setting. In certain circumstances, postexposure prophylaxis may be recommended even for exposures involving low-risk species.

The species of animals associated with the potential rabies exposures are detailed in Table 3.

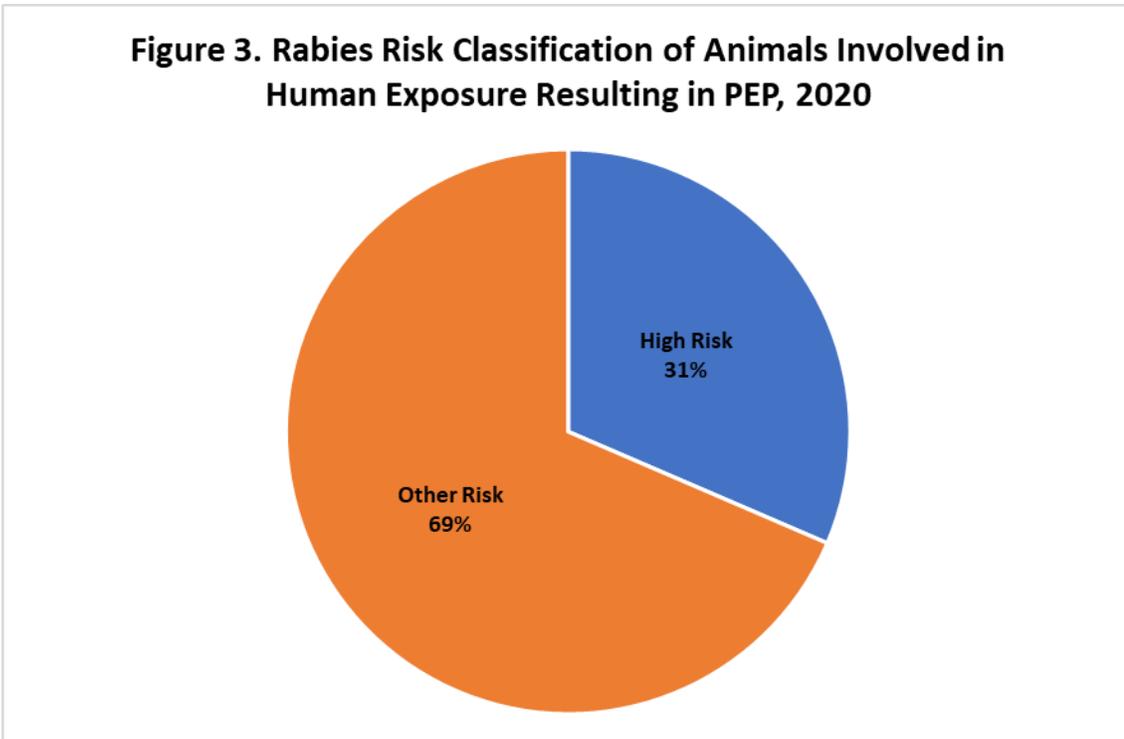
Species Associated with Exposure Resulting in PEP	Number	%
Bat	42	18.1%
Bobcat	1	0.4%
Cat	86	37.1%
Cow	5	2.2%
Coyote	2	0.9%
Deer	1	0.4%
Dog	60	25.9%
Fox	4	1.7%
Monkey	3	1.3%
Pig	1	0.4%
Raccoon	23	9.9%
Skunk	2	0.9%
Unknown	1	0.4%
Wild Hog	1	0.4%
Total	232	100.0%

Table 3. Number of People Receiving Rabies Biologicals by Species of Exposing Animal, 2020

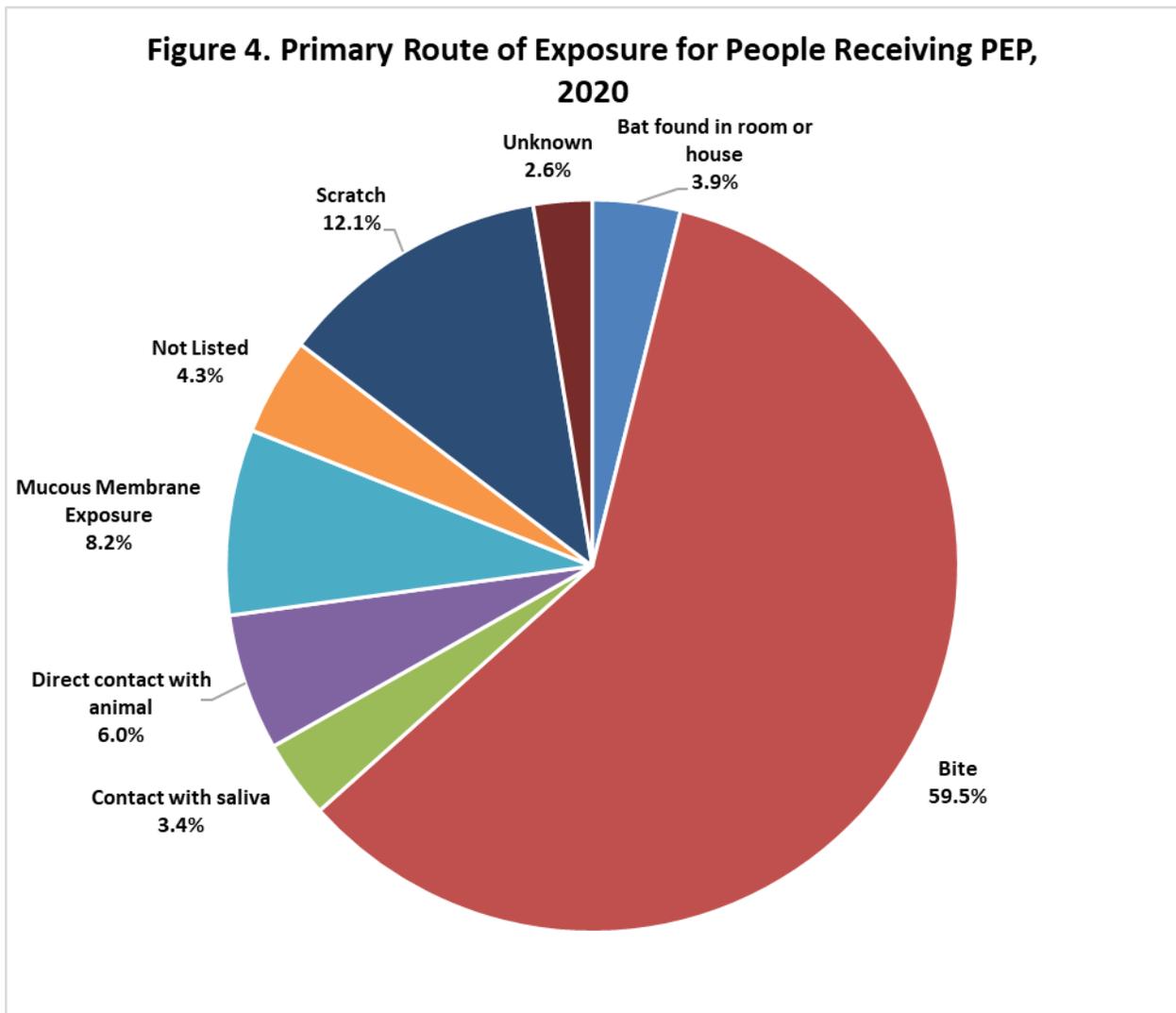
The number of people receiving biologicals by PHR and animal causing the potential rabies exposure is detailed in Table 4.

Exposing Animal	Public Health Region									Out of State Resident	Total	%
	1	2/3	4/5N	6/5S	7	8	9/10	11				
Bat	2	7		2		19	3	9			42	18.1%
Bobcat		1									1	0.4%
Cat	11	58			1	7	5	4			86	37.1%
Cow		1	4								5	2.2%
Coyote		1						1			2	0.9%
Deer							1				1	0.4%
Dog	7	27			1	13	1	11			60	25.9%
Fox		1				2				1	4	1.7%
Monkey		3									3	1.3%
Pig		1									1	0.4%
Raccoon		11		3		5	1	3			23	9.9%
Skunk		2									2	0.9%
Unknown								1			1	0.4%
Wild hog		1									1	0.4%
Total	20	114	4	5	2	46	11	29	1		232	100.0%
%	8.6%	49.1%	1.7%	2.2%	0.9%	19.8%	4.7%	12.5%	0.4%		100.0%	

Table 4. Number of People Receiving Rabies Biologicals by Species of Exposing Animal and Public Health Region of Patient Residence, 2020



Reported routes of exposure are shown in Figure 4.



The primary anatomic sites of exposure are listed in Table 5.

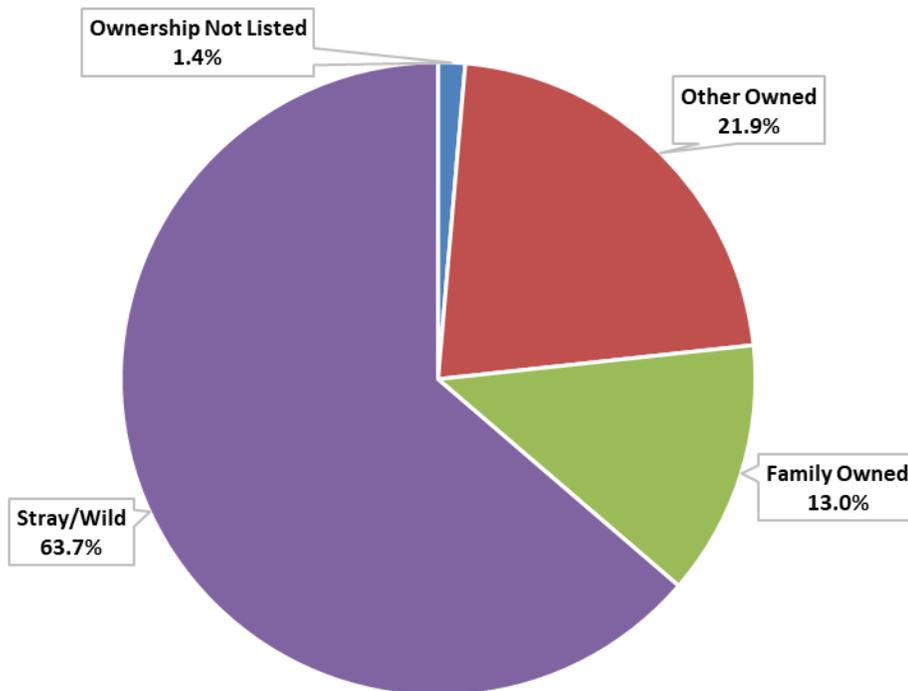
Anatomic Location of Exposure	Number of People	%
Hand	89	38.4%
Leg	42	18.1%
Multiple Anatomic Sites	26	11.2%
Arm	20	8.6%
Not Listed	18	7.8%
Head	15	6.5%
Unknown	12	5.2%
Torso	6	2.6%
Foot	3	1.3%
Mucous Membrane	1	0.4%
Total	232	100.0%

Table 5. Primary Anatomic Location of Rabies Exposure for People Receiving Rabies Biologicals, 2020

Dogs and cats accounted for 146 (62.9%) of the reports of potential rabies exposures resulting in PEP. Of those, 19 (13.0%) were owned by the patient’s family, 32 (21.9%) were owned by someone other than the patient’s family, 93 (63.7%) were listed as either a stray or wild animal, and 2 (1.4%) had no ownership information identified (Figure 5). The vaccination status of 58 (39.7%) of the dogs and cats was reported as known, with 2 (3.4%) being vaccinated and 56 (96.6%) not being vaccinated. The vaccination status of 87 (59.6%) of the dogs and cats was reported as unknown and the vaccination status of 1 (0.7%) of the dogs and cats was not reported.

The average age of those receiving PEP was 33.2 years (males 31.2 years, females 35.2 years). The median age of those receiving PEP was 33.2 years (males 26.0 years, females 33.5 years). Of the recipients, 117 (50.4%) were male and 115 (49.6%) were female. Of those people receiving PEP, 12 (5.2%) were reported as previously immunized for rabies, 217 (93.5%) were not previously immunized for rabies, and the immunization status for 3 (1.3%) people was not listed.

Figure 5. Ownership of Cats and Dogs Involved in Potential Rabies Exposure to Humans, 2020



The disposition of the animals causing the exposures is detailed in Table 6. The animal causing the exposure was tested for rabies in a public health laboratory in 81 (34.9%) cases; the animal was not available for testing or quarantine in 117 (50.4%) cases; the testing status was not listed or unknown in 29 (12.5%) cases; and the animal was quarantined in 5 (2.2%) cases. Rabies biologicals were distributed to 5 people (2.2%) while laboratory results were pending and 5 people (2.2%) while the animal causing the exposure was being quarantined for rabies observation. The final laboratory results for those samples which were pending at the time rabies biologicals were distributed were not recorded in the database. PEP is occasionally begun while the exposing animal is being tested when the animal or exposure situation is deemed high risk. Additionally, sometimes the exposing animal is located for testing or quarantine after PEP has been initiated. PEP is generally discontinued if the laboratory result is negative, or the animal successfully completes quarantine.

Laboratory Testing Status	Number	%	
Animal Quarantined*	5	2.2%	
Animal Not Available for Testing or Quarantine	117	50.4%	
Testing Status Not Listed or Unknown	29	12.5%	
Tested	81	34.9%	
	Test Result	Number	% of Tested Specimens
	Positive	61	75.3%
	Sample Decomposed	7	8.6%
	Results pending at the time the biologicals were distributed*	5	6.2%
	Negative	4	4.9%
	Sample Destroyed	3	3.7%
	Result Inconclusive	1	1.2%

Table 6. Rabies Testing Status and Test Results from Animals That Caused People to Receive Postexposure Prophylaxis, 2020

*PEP is occasionally begun while the exposing animal is being tested when the animal or exposure situation is deemed high risk. Additionally, sometimes the exposing animal is located for testing or quarantine after PEP has been initiated. PEP is generally discontinued if the laboratory result is negative, or the animal successfully completes quarantine.

Table 7 lists the number of people receiving rabies biologicals for those instances in which the exposing animal was not available for testing or quarantine for rabies.

Exposing Animal	Public Health Region						Out of State	Total	%
	1	2/3	6/5S	8	9/10	11			
Bat	2	3	1	14	3	2		25	21.4%
Bobcat		1						1	0.9%
Cat	5	17		5		3		30	25.6%
Cow		1						1	0.9%
Coyote		1						1	0.9%
Dog	3	18		10	1	7		39	33.3%
Fox							1	1	0.9%
Monkey		1						1	0.9%
Pig		1						1	0.9%
Raccoon		6	2	4	1	1		14	12.0%
Skunk		1						1	0.9%
Unknown						1		1	0.9%
Wild hog		1						1	0.9%
Total	10	51	3	33	5	14	1	117	100.0%
%	8.5%	43.6%	2.6%	28.2%	4.3%	12.0%	0.9%	100.0%	

Table 7. Number of People Receiving Rabies Biologicals Due to Exposures to Animals That Were Not Available for Testing or Quarantine for Rabies, 2020

Table 8 lists the number of people receiving rabies biologicals in those instances where the exposing animal tested non-negative for rabies.

Exposing Animal	Public Health Region								Total	%
	1	2/3	4/5N	6/5S	7	8	9/10	11		
Bat		3		1		5		1	10	13.9%
Cat	6	31				1	5		43	59.7%
Cow			4						4	5.6%
Coyote								1	1	1.4%
Deer							1		1	1.4%
Dog	3	3			1			1	8	11.1%
Fox		1				1			2	2.8%
Raccoon		1		1					2	2.8%
Skunk		1							1	1.4%
Total	9	40	4	2	1	7	6	3	72	100.0%
%	12.5%	55.6%	5.6%	2.8%	1.4%	9.7%	8.3%	4.2%	100.0%	

Table 8. Number of People Receiving Rabies Biologicals Due to Exposures to Animals That Tested Non-negative for Rabies, 2020

Table 9 shows the number of people receiving rabies biologicals for exposures to an animal that tested positive for rabies.

Species of Rabies-Positive Animal	Number of People Exposed	%
Bat	6	9.8%
Cat	42	68.9%
Cow	4	6.6%
Deer	1	1.6%
Dog	4	6.6%
Fox	2	3.3%
Raccoon	1	1.6%
Skunk	1	1.6%
Total	61	100.0%

Table 9. Number of People Receiving Rabies Biologicals for Exposures to Animals That Tested Positive for Rabies, 2020