

Texas Department of State Health Services DSHS-Supplied Rabies Biologicals 2012 Surveillance Summary

Texas Health and Safety Code §826.025 allows the Texas Department of State Health Services (DSHS) to supply rabies biologicals (vaccine and immune globulin) for persons who have been exposed to rabid, or potentially rabid, animals. Although DSHS is supposed to be reimbursed for the cost of these biologicals, no one who has a valid exposure is denied access to the products because of their inability to pay.

DSHS Health Service Region (HSR) offices may store and distribute rabies biologicals. In an effort to make the biologicals available to Texas residents throughout the state, some regional offices partner with local health departments and hospitals to serve as depots for storing and distributing biologicals. Surveillance data, including the demographic information on who received the biologicals and the reasons the biologicals were distributed, is maintained by DSHS (mandated by §97.123, Texas Administrative Code, "Provision of Anti-Rabies Biologicals").

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

Postexposure Rabies Prophylaxis

During 2012, rabies biologicals were distributed for postexposure prophylaxis (PEP) to 559 people, of whom 284 (50.8%) acquired the biologicals from regional DSHS offices and 275 (49.2%) from depots. The reported total cost of the biologicals distributed from DSHS inventory was \$982,592 (\$619,775 for 1,894 vials [2 ml] of human rabies immune globulin and \$362,817 for 1,925 vials [1 ml] of vaccine).

Rabies biologicals were distributed to 553 (98.9%) Texas residents and 6 (1.1%) out-of-state residents: 2 persons from Georgia and 1 person each from Kansas, Minnesota, North Carolina, and New York. Distribution of postexposure biologicals based on the HSR of patient residence is summarized in Figure 1.

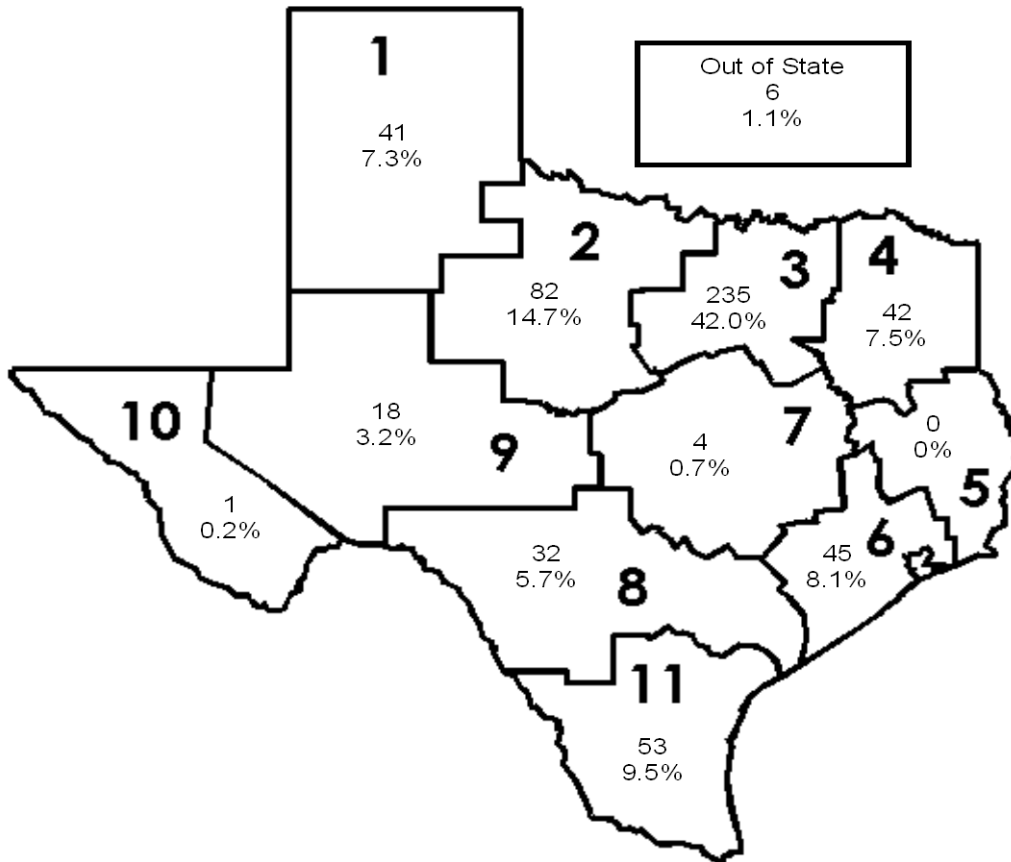


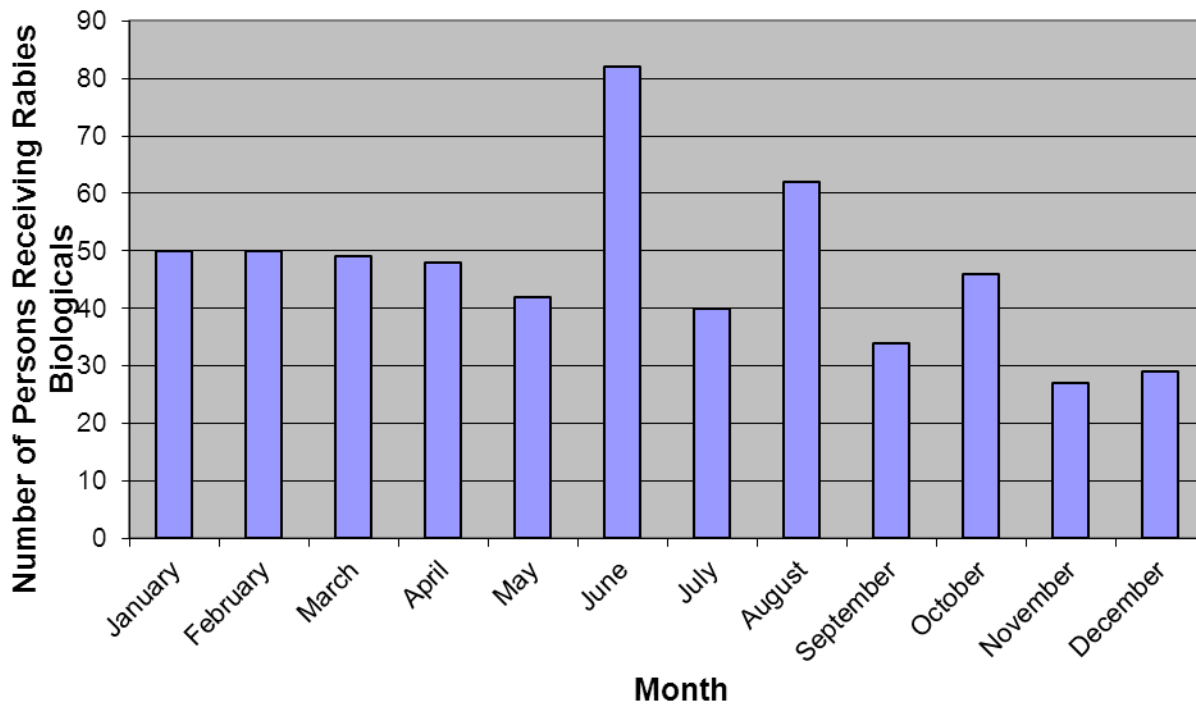
Figure 1. Number of People Receiving Rabies Biologicals by Health Service Region of Patient Residence, 2012

Table 1 and Figure 2 show the distribution of rabies biologicals by month and HSR of the patient's residence.

Month	Health Service Region										Out Of State Resident	TOTAL	%
	1	2	3	4	6	7	8	9	10	11			
January	2	2	22	5	1		3	1		14		50	8.9%
February	2	2	25	7	3	1	5			5		50	8.9%
March	3	9	21	3	5		2	3		3		49	8.8%
April	9	9	14	8	1		3			4		48	8.6%
May	4	11	10	1	8		1	2		4	1	42	7.5%
June	9	18	36	5	4	1	6			3		82	14.7%
July	1	4	16		4		6	6		3		40	7.2%
August	1	4	30	6	10		6			3	2	62	11.1%
September	4	6	12	2	3	1		2		4		34	6.1%
October	3	8	21		2	1		3	1	6	1	46	8.2%
November	3	6	7	2	4					3	2	27	4.8%
December		3	21	3				1		1		29	5.2%
TOTAL	41	82	235	42	45	4	32	18	1	53	6	559	100.0%
%	7.3%	14.7%	42.0%	7.5%	8.1%	0.7%	5.7%	3.2%	0.2%	9.5%	1.1%	100.0%	

Table 1. Number of Persons Receiving Rabies Biologicals by Health Service Region of Patient Residence, 2012

Figure 2. Number of Persons Receiving Rabies Biologicals By Month, 2012



The species of animals associated with the potential rabies exposures are detailed in Table 2. The number of persons receiving biologicals by HSR and animal causing the potential rabies exposure is detailed in Table 3.

Animals designated as being of high risk for transmitting rabies (bats, coyotes, foxes, raccoons, and skunks) accounted for 131 (23.4%) of the exposures. Animals classified as low risk for rabies (e.g. rodents, rabbits, moles, and opossums) accounted for 3 (0.5%) exposures (Figure 3).

Routes of exposure are shown in Figure 4.

Species Associated with Exposure Resulting in PEP	Number	%
Dog	204	36.5%
Cat	139	24.9%
Bat	69	12.3%
Raccoon	39	7.0%
Cattle	35	6.3%
Horse	18	3.2%
Skunk	12	2.1%
Deer	9	1.6%
Coyote	7	1.3%
Goat	5	0.9%
Primate	5	0.9%
Unknown/Not Listed	5	0.9%
Fox	4	0.7%
Bobcat	3	0.5%
Cougar	2	0.4%
Squirrel	2	0.4%
Gopher	1	0.2%
TOTAL	559	100%

Table 2. Species Associated with Rabies PEP, 2012

Exposing Animal	Health Service Region											Out of State Resident	TOTAL	%
	1	2	3	4	6	7	8	9	10	11				
Bat		1	13	6	31		5	1		10	2	69	12.3%	
Bobcat			2							1		3	0.5%	
Cat	13	40	57	6	3		4	7	1	6	2	139	24.9%	
Cattle		4	27	4								35	6.3%	
Cougar					1	1						2	0.4%	
Coyote	1		5	1								7	1.3%	
Deer			8								1	9	1.6%	
Dog	21	18	92	17	3	2	18	7		25	1	204	36.5%	
Fox	1	3										4	0.7%	
Goat				5								5	0.9%	
Gopher							1					1	0.2%	
Horse	5	6								7		18	3.2%	
Primate			4		1							5	0.9%	
Raccoon		7	17	2	5	1	2	1		4		39	7.0%	
Skunk		3	8	1								12	2.1%	
Squirrel			2									2	0.4%	
Unknown/Not Listed					1		2	2				5	0.9%	
TOTAL	41	82	235	42	45	4	32	18	1	53	6	559	100.0%	
%	0.7%	14.7%	42.0%	7.5%	8.1%	0.7%	5.7%	3.2%	0.2%	9.5%	1.1%	100.0%		

Table 3. Persons Receiving Rabies Biologicals by Health Service Region of Patient Residence and Exposing Animal, 2012

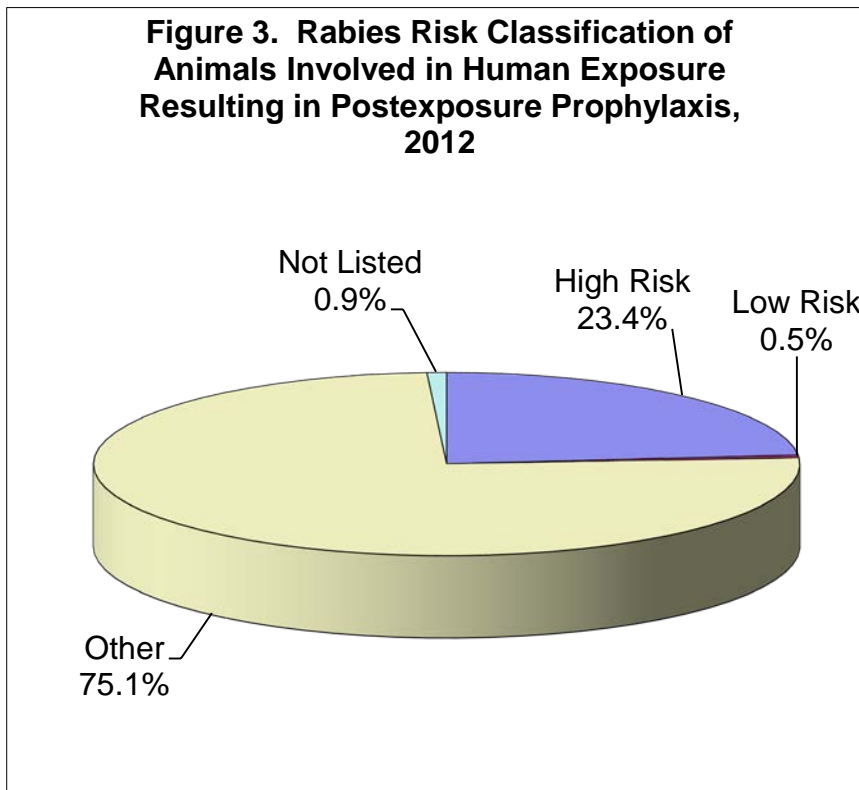
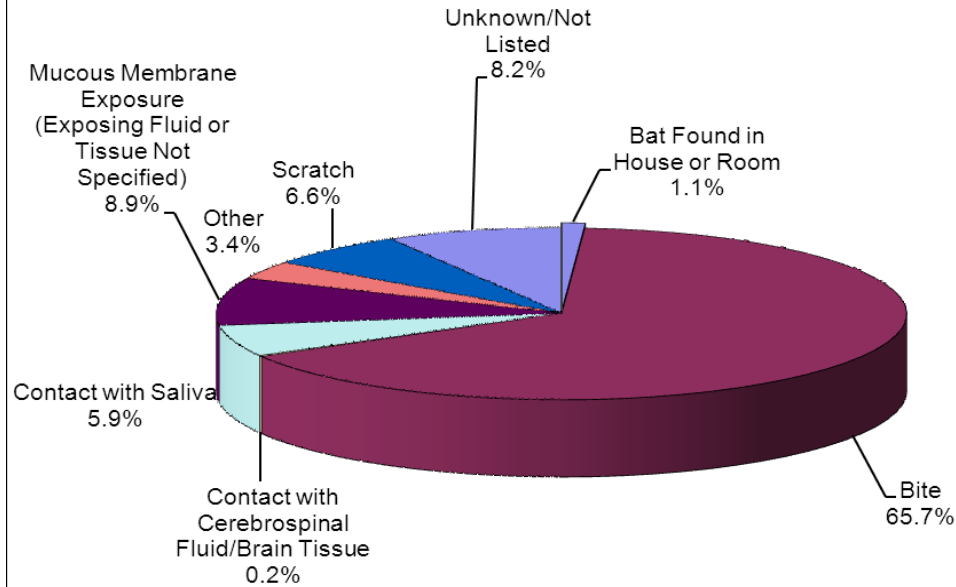


Figure 4. Primary Route of Exposure for Persons Receiving Postexposure Prophylaxis, 2012



Dogs and cats accounted for 343 (61.4%) of the reports of potential rabies exposures resulting in PEP. Of those, 17 (5.0%) were owned by the patient's family, 66 (19.2%) were owned by someone other than the patient's family, 256 (74.6%) were listed as either a stray or wild animal, and 4 (1.2%) had no ownership information identified (Figure 5). The vaccination status of 263 (76.7%) of the dogs and cats was either reported as unknown or not reported. The vaccination status of 80 (23.3%) of the dogs and cats was reported, with 77 (96.3% of those with vaccination status known) being not currently vaccinated against rabies and 3 (3.8% of those with vaccination status known) being currently vaccinated.

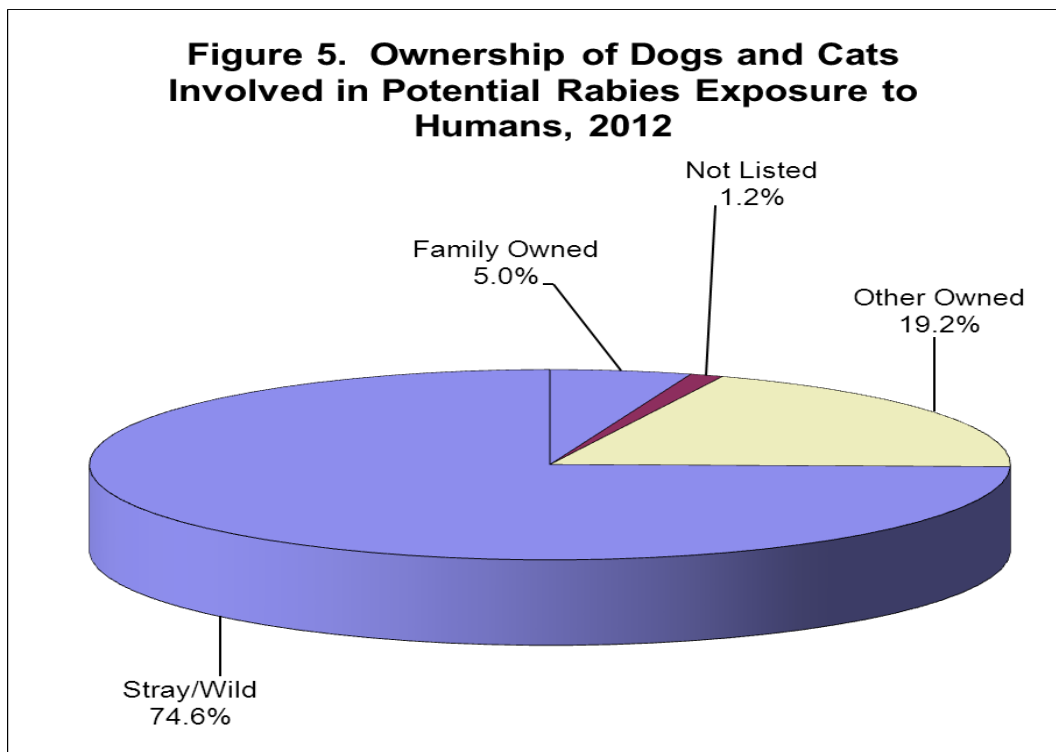
The average age of those receiving PEP was 35.2 years (males 33.7 years, females 36.9 years). The median age of those receiving PEP was 34.0 years (males 32.0 years, females 38.0 years). Of the recipients, 302 (54.0%) were male and 257 (46.0%) were female.

Of those persons receiving PEP, 13 (2.3%) were previously immunized for rabies and 11 (2.0%) were not previously immunized for rabies. The rabies immunization status for the remaining 535 (95.7%) persons was not recorded in the database; however, the vast majority was likely not previously immunized. The primary anatomic sites of exposure are listed in Table 4.

Anatomic Location of Exposure	Number of People	%
Hand	216	38.6%
Leg	94	16.8%
Arm	59	10.6%
Multiple Anatomic Sites	59	10.6%
Unknown/Not Listed	56	10.0%
Head/Neck	46	8.2%
Foot	15	2.7%
Torso	14	2.5%
TOTAL	559	100%

Table 4. Primary Anatomic Location of Rabies Exposures, 2012

The animal causing the exposure was tested for rabies in a public health laboratory in 159 (28.4%) cases; the animal was not available for testing in 395 (70.7%) cases; the testing status was not listed in 2 (0.4%) cases; and the animal was quarantined in lieu of testing in 3 (0.5%) cases. Biologicals were distributed to 3 persons (0.5% of persons receiving PEP) while the animal causing the exposure was being quarantined for rabies observation. Biologicals were distributed to 4 people (0.7% of persons receiving PEP) while laboratory results were pending. The final laboratory results for those samples which were pending at the time rabies biologicals were distributed were not recorded in the database (Table 5). 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 is begun. PEP is generally discontinued if the laboratory result is negative or the animal successfully completes quarantine.



Laboratory Testing Status	Number	%	
Animal Not Tested - Quarantined	3	0.5%	
Animal Not Tested - Unavailable	395	70.7%	
Testing Status Not Listed	2	0.4%	
Tested	159	28.4%	
	Test Result	Number	% of Tested Specimens
	Positive	123	77.4%
	Sample Decomposed	13	8.2%
	Sample Destroyed	10	6.3%
	Result Inconclusive	4	2.5%
	Results pending at the time the PEP biologicals were distributed*	4	2.5%
	Test Result Not Listed	3	1.9%
	Negative*	2	1.3%

Table 5. Rabies Testing Status and Test Results from Animals That Caused People to Receive Postexposure Prophylaxis, 2012

*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 after PEP is begun. PEP is generally discontinued if the laboratory result is negative.

Table 6 lists the number of persons receiving rabies biologicals for those instances in which the exposing animal was unavailable for rabies testing.

Exposing Animal	Health Service Region											Out of State Resident	TOTAL	%
	1	2	3	4	6	7	8	9	10	11				
Bat		1	11	6	24		3	1		7	2	55	13.9%	
Bobcat			2							1		3	0.8%	
Cat	12	27	45	5	3		4	7	1	6	2	112	28.4%	
Cattle		1										1	0.3%	
Cougar					1	1						2	0.5%	
Coyote	1		5	1								7	1.8%	
Dog	19	12	78	7	3	2	17	5		21	1	165	41.8%	
Fox	1											1	0.3%	
Gopher							1					1	0.3%	
Primate			4		1							5	1.3%	
Raccoon		4	17	2	5		2	1		4		35	8.9%	
Skunk			3									3	0.8%	
Squirrel			2									2	0.5%	
Unknown/Not Listed							1	2				3	0.8%	
TOTAL	33	45	167	21	37	3	28	16	1	39	5	395	100.0%	
%	8.4%	11.4%	42.3%	5.3%	9.4%	0.8%	7.1%	4.1%	0.3%	9.9%	1.3%	100.0%		

Table 6. Number of Persons Receiving Rabies Biologicals Due to Exposures to Animals That Were Unavailable for Rabies Testing, 2012