



Texas Department of State Health Services DSHS-Supplied Rabies Biologicals 2013 Surveillance Summary

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 persons who have been exposed to rabid, or potentially rabid, animals. In an effort to make the biologicals available to Texas residents throughout the state, DSHS Health Service Region (HSR) offices may store and distribute rabies biologicals and some HSR 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 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 2013, rabies biologicals were distributed for postexposure prophylaxis (PEP) to 469 people, of whom 197 (42.0%) acquired the biologicals from DSHS HSR offices and 272 (58.0%) from depots. The reported total cost of the biologicals distributed from DSHS inventory was \$944,168 (\$627,603 for 1,581 vials [2 ml] of human rabies immune globulin and \$316,565 for 1,621 vials [1 ml] of vaccine).

Rabies biologicals were distributed to 465 (99.1%) Texas residents and 4 (0.9%) out-of-state residents: 2 persons from Arizona and 1 person each from Massachusetts and West Virginia. Distribution of postexposure biologicals based on the HSR of patient residence is summarized in Figure 1.

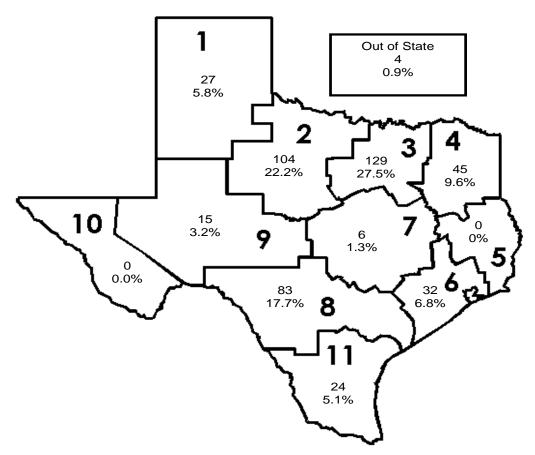
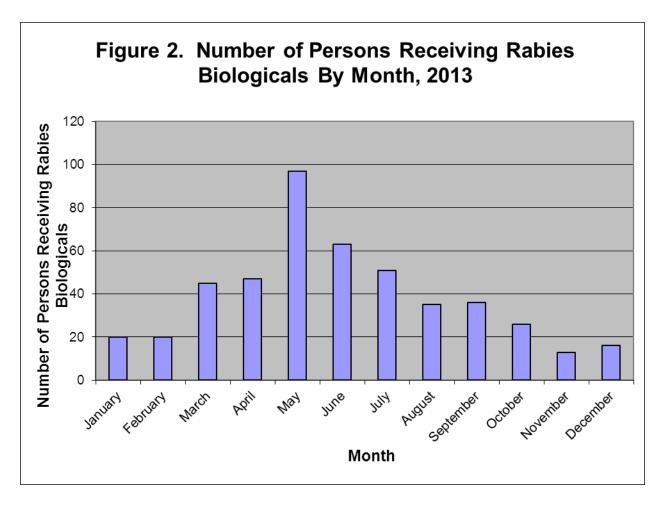


Figure 1. Number of People Receiving Rabies Biologicals by Health Service Region of Patient Residence, 2013

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

| | | | | | Out of | | | | | | | |
|-----------|------|-------|-------|------|--------|------|-------|------|------|-------------------|--------|--------|
| Month | 1 | 2 | 3 | 4 | 6 | 7 | 8 | 9 | 11 | State Resident | TOTAL | % |
| January | 1 | 2 | 12 | 2 | 1 | | | 1 | 1 | | 20 | 4.3% |
| February | 2 | 4 | 3 | | 1 | | 8 | | 2 | | 20 | 4.3% |
| March | 3 | 3 | 16 | 6 | 6 | 1 | 5 | 2 | 2 | 1 | 45 | 9.6% |
| April | | 7 | 14 | 1 | 7 | | 15 | 3 | | | 47 | 10.0% |
| May | 4 | 56 | 22 | 6 | 3 | | 4 | | 2 | | 97 | 20.7% |
| June | 2 | 8 | 30 | 9 | 2 | 2 | 8 | 2 | | | 63 | 13.4% |
| July | 4 | 4 | 19 | 6 | 3 | | 8 | 3 | 2 | 2 | 51 | 10.9% |
| August | 4 | 3 | 5 | 2 | 5 | | 11 | | 5 | | 35 | 7.5% |
| September | 3 | 7 | 3 | 5 | 2 | | 9 | | 7 | | 36 | 7.7% |
| October | 3 | 7 | 1 | 4 | 1 | 2 | 3 | 4 | 1 | | 26 | 5.5% |
| November | | 2 | 3 | 1 | | | 7 | | | | 13 | 2.8% |
| December | 1 | 1 | 1 | 3 | 1 | 1 | 5 | | 2 | 1 | 16 | 3.4% |
| TOTAL | 27 | 104 | 129 | 45 | 32 | 6 | 83 | 15 | 24 | 4 | 469 | 100.0% |
| % | 5.8% | 22.2% | 27.5% | 9.6% | 6.8% | 1.3% | 17.7% | 3.2% | 5.1% | 0.9% | 100.0% | |

Table 1. Number of Persons Receiving Rabies Biologicals by Health Service Region of Patient Residence, 2013



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 135 (28.8%) of the exposures. Animals classified as low risk for rabies (e.g. rodents, rabbits, moles, and opossums) accounted for 3 (0.6%) exposures (Figure 3). Although some species are considered low risk for rabies, all mammals are capable of becoming infected with and transmitting 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 post-exposure prophylaxis may be recommended even for exposures involving low risk species.

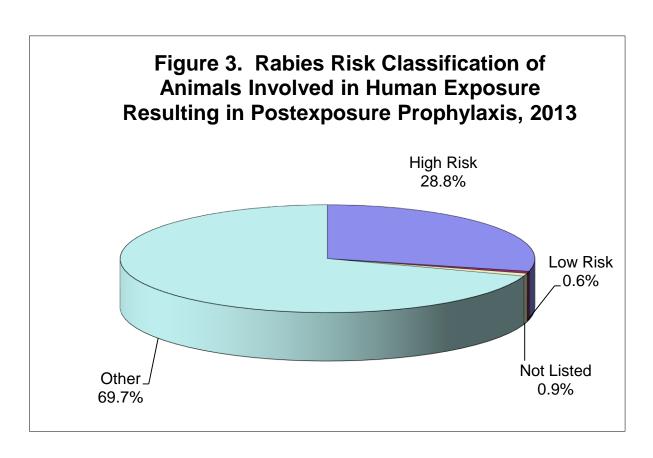
Routes of exposure are shown in Figure 4.

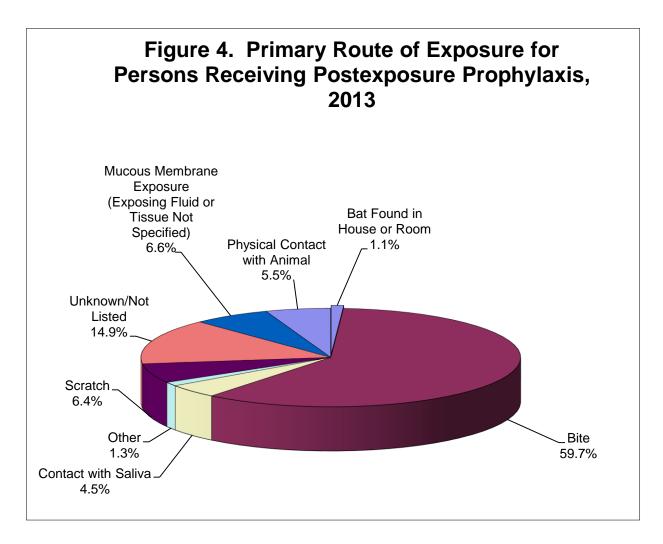
| Species Associated with Exposure Resulting in PEP | Number | % |
|---|--------|-------|
| Dog | 217 | 46.3% |
| Cat | 90 | 19.2% |
| Bat | 87 | 18.6% |
| Raccoon | 24 | 5.1% |
| Skunk | 18 | 3.8% |
| Horse | 9 | 1.9% |
| Cattle | 7 | 1.5% |
| Unknown/Not Listed | 4 | 0.9% |
| Coyote | 3 | 0.6% |
| Fox | 3 | 0.6% |
| Opossum | 2 | 0.4% |
| Pig | 2 | 0.4% |
| Rodent | 1 | 0.2% |
| Otter | 1 | 0.2% |
| Coati | 1 | 0.2% |
| TOTAL | 469 | 100% |

Table 2. Species Associated with Rabies PEP, 2013

| Exposing | | | | Out of State Total | | % | | | | | | |
|-------------|------|-------|-------|-----------------------|------|------|-------|------|------|----------|--------|--------|
| Animal | 1 | 2 | 3 | 4 | 6 | 7 | 8 | 9 | 11 | Resident | Total | /0 |
| Bat | 3 | 4 | 6 | 20 | 22 | 1 | 18 | | 13 | | 87 | 18.6% |
| Cat | 11 | 12 | 36 | 5 | 1 | 3 | 17 | 5 | | | 90 | 19.2% |
| Cattle | | 1 | 5 | 1 | | | | | | | 7 | 1.5% |
| Coyote | 1 | 1 | | | | | 1 | | | | 3 | 0.6% |
| Dog | 9 | 71 | 58 | 12 | 5 | 2 | 41 | 7 | 8 | 4 | 217 | 46.3% |
| Fox | | | 1 | | | | 1 | 1 | | | 3 | 0.6% |
| Horse | | 7 | 1 | 1 | | | | | | | 9 | 1.9% |
| Raccoon | 2 | 2 | 6 | 3 | 3 | | 4 | 1 | 3 | | 24 | 5.1% |
| Skunk | | 4 | 11 | 3 | | | | | | | 18 | 3.8% |
| Coati | | | | | | | | 1 | | | 1 | 0.2% |
| Opossum | | 1 | 1 | | | | | | | | 2 | 0.4% |
| Otter | | | 1 | | | | | | | | 1 | 0.2% |
| Pig | 1 | | 1 | | | | | | | | 2 | 0.4% |
| Rodent | | | | | 1 | | | | | | 1 | 0.2% |
| Unknown/Not | | | | | | | | | | | | |
| Listed | | 1 | 2 | | | | 1 | | | | 4 | 0.9% |
| TOTAL | 27 | 104 | 129 | 45 | 32 | 6 | 83 | 15 | 24 | 4 | 469 | 100.0% |
| % | 5.8% | 22.2% | 27.5% | 9.6% | 6.8% | 1.3% | 17.7% | 3.2% | 5.1% | 0.9% | 100.0% | |

Table 3. Persons Receiving Rabies Biologicals by Health Service Region of Patient Residence and Exposing Animal, 2013





Dogs and cats accounted for 307 (65.5%) of the reports of potential rabies exposures resulting in PEP. Of those, 50 (16.3%) were owned by the patient's family, 64 (20.8%) were owned by someone other than the patient's family, 185 (60.3%) were listed as either a stray or wild animal, and 8 (2.6%) had no ownership information identified (Figure 5). The vaccination status of 92 (30.0%) of the dogs and cats was reported, with 87 (94.6% of those with vaccination status known) being not currently vaccinated against rabies and 5 (5.4% of those with vaccination status known) being currently vaccinated. The vaccination status of 205 (66.8%) of the dogs and cats was reported as unknown and the vaccination status of 10 (3.3%) of the dogs and cats was not reported.

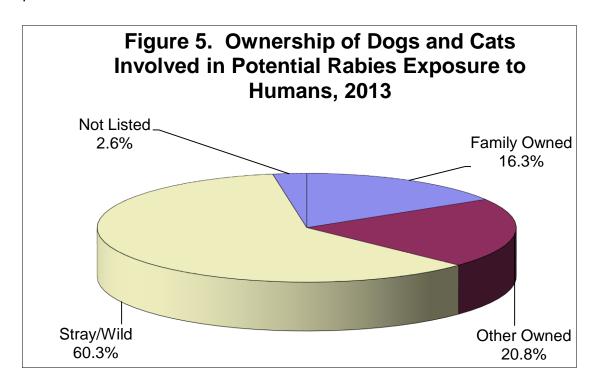
The average age of those receiving PEP was 32.8 years (males 32.3 years, females 33.3 years). The median age of those receiving PEP was 30.0 years (males 30.0 years, females 30.0 years). Of the recipients, 224 (47.8%) were male and 245 (52.2%) were female. Of those persons receiving PEP, 4 (0.9%) were previously immunized for rabies. The primary anatomic sites of exposure are listed in Table 4.

The animal causing the exposure was tested for rabies in a public health laboratory in 152 (32.4%) cases; the animal was not available for testing in 307 (65.5%) cases; the testing status was not listed in 7 (1.5%) cases; and the animal was quarantined in lieu of testing in 3 (0.6%) cases. Biologicals were distributed to 3 persons (0.6% of persons receiving PEP) while the animal causing

| Anatomic Location of Exposure | Number of People | % |
|-------------------------------|------------------------|-------|
| Arm | 34 | 7.2% |
| Foot | 10 | 2.1% |
| Hand | 169 | 36.0% |
| Head/Neck | 21 | 4.5% |
| Leg | 83 | 17.7% |
| Multiple Anatomic | | |
| Sites | 56 | 11.9% |
| Torso | 10 | 2.1% |
| Unknown/Not Listed | 85 | 18.1% |
| Ingestion* | 1 | 0.2% |
| TOTAL | 469 | 100% |

Table 4. Primary Anatomic Location of Rabies Exposures, 2013

the exposure was being quarantined for rabies observation. Biologicals were distributed to 2 people (0.4% 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 has been initiated. PEP is generally discontinued if the laboratory result is negative or the animal successfully completes quarantine.



^{*}This person ingested bat brain soup, a local delicacy, while traveling in Asia.

| Animal Not Tested - Quarantined* | 3 | 0.6% | | | |
|----------------------------------|---|--------|-----------------------|--|--|
| Animal Not Tested - Unavailable | 307 | 65.5% | | | |
| Testing Status Not Listed | 7 | 1.5% | | | |
| Tested | 152 | | 32.4% | | |
| | Test Result | Number | % of Tested Specimens | | |
| | Positive | 138 | 90.8% | | |
| | Sample Decomposed | 8 | 5.3% | | |
| | Sample Destroyed | 1 | 0.7% | | |
| | Result Inconclusive | 3 | 2.0% | | |
| | Results pending at the time the PEP biologicals were distributed* | 2 | 1.3% | | |

Number

Laboratory Testing Status

Table 5. Rabies Testing Status and Test Results from Animals That Caused People to Receive Postexposure Prophylaxis, 2013

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 | | | | Out of State Resident | TOTAL | % | | | | | | |
|-----------------------|------|-------|-------|-----------------------------|-------|------|-------|------|------|----------|--------|--------|
| | 1 | 2 | 3 | 4 | 6 | 7 | 8 | 9 | 11 | Resident | | |
| Bat | 2 | 4 | 5 | 19 | 16 | 1 | 9 | | 10 | | 66 | 21.5% |
| Cat | 10 | 9 | 14 | | 1 | 2 | 16 | 3 | | | 55 | 17.9% |
| Cattle | | 1 | | | | | | | | | 1 | 0.3% |
| Coyote | 1 | 1 | | | | | | | | | 2 | 0.7% |
| Dog | 8 | 21 | 47 | 1 | 5 | 2 | 40 | 7 | 8 | 4 | 143 | 46.6% |
| Fox | | | 1 | | | | 1 | 1 | | | 3 | 1.0% |
| Raccoon | 2 | 2 | 6 | 3 | 3 | | 4 | 1 | 3 | | 24 | 7.8% |
| Skunk | | 2 | 4 | 1 | | | | | | | 7 | 2.3% |
| Coati | | | | | | | | 1 | | | 1 | 0.3% |
| Opossum | | 1 | 1 | | | | | | | | 2 | 0.7% |
| Pig | | | 1 | | | | | | | | 1 | 0.3% |
| Rodent | | | | | 1 | | | | | | 1 | 0.3% |
| Unknown/Not Listed | | | 1 | | | | | | | | 1 | 0.3% |
| TOTAL | 23 | 41 | 80 | 24 | 26 | 5 | 70 | 13 | 21 | 4 | 307 | 100.0% |
| % | 7.5% | 13.4% | 26.1% | 7.8% | 8.5% | 1.6% | 22.8% | 4.2% | 6.8% | 1.3% | 100.0% | |

Table 6. Number of Persons Receiving Rabies Biologicals Due to Exposures to Animals That Were Unavailable for Rabies Testing, 2013

^{*}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.