

2016

Veterinary Public Health Manual



# Veterinary Public Health Manual 2016

For Veterinary Practices in  
Los Angeles County



# 2016

## VETERINARY PUBLIC HEALTH MANUAL for Veterinary Practices

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# Acronyms and Abbreviations

**AAFP** – American Association of Feline Practitioners  
**AAHA** – American Animal Hospital Association  
**AHAN** – Animal Health Alert Network  
**AVMA** – American Veterinary Medical Association  
**CAHFS** – California Animal Health and Food Safety Laboratory  
**CARES** – California Animal Response and Emergency System  
**CAVMRC** – California Veterinary Medical Reserve Corps  
**CDC** – Centers for Disease Control and Prevention  
**CDFA** – California Department of Food and Agriculture  
**CDFW** – California Department of Fish and Wildlife  
**CDPH** – California Department of Public Health  
**CVMA** – California Veterinary Medical Association  
**DFA** – Direct Fluorescent Antibody  
**EPRP** – Emergency Preparedness and Response Program  
**HPHF** – 2020 Healthy Pets Healthy Families Initiative  
**HSVMA** – Humane Society Veterinary Medical Association  
**IMHA** – Immune-Mediated Hemolytic Anemia  
**LA County** – Los Angeles County  
**LAX** – Los Angeles International Airport  
**LHO** – Local Health Officer  
**NASPHV** – National Association of State Public Health Veterinarians  
**PETS Act** – Pets Evacuation and Transportation Standards Act  
**PH Lab** – Los Angeles County Public Health Laboratory  
**SCVMA** – Southern California Veterinary Medical Association  
**SEAACA** – South East Area Animal Control Authority  
**USDA** – United States Department of Agriculture  
**VPH** – Veterinary Public Health Program  
**WNV** – West Nile Virus



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February 24<sup>th</sup>, 2016

Dear Veterinary Practice Staff:

Welcome to Los Angeles County! We look forward to working with you. You play a vital role in helping to protect the public's health every day, whether you are diagnosing and treating disease in animals, educating the public, or promoting pet wellness.

This manual will tell you what you need to know about services the Veterinary Public Health Program of Los Angeles County offer, important local public health issues, and what is legally reportable locally.

Los Angeles County is home to more than 25% of California's population. Our county has more than 450 veterinary practices, 27 animal control agencies and 20 shelters, all in an area covering over 4000 square miles. It is the only jurisdiction in the state ***that requires reporting of many diseases in companion and wild animals***. This places our animal health community on the cutting edge in detecting disease trends, geographic clusters, outbreaks, and emerging diseases.

If your practice is within Los Angeles County, ***your team needs to know all the information in this binder***. Please review the contents of this binder during a staff meeting.

**Long Beach, Pasadena and Vernon exceptions:** These three cities have their own health departments, therefore they do NOT fall within the jurisdiction of our Department. If your practice is in one of these three cities, you must report animal bites to the Pasadena Humane Society (626-792-7151), Long Beach Animal Care Services (562-570-7387) or (in Vernon) the Southeast Area Animal Control Authority (562-803-3301). Veterinary practices in these three cities are not legally required to report animal diseases to our program, unless the animal lives in our jurisdiction.

We look forward to continuing to work with the talented and insightful animal health professionals throughout our county in our mission to protect both animal and human health.

Warm Regards,



Dr. Karen Ehnert, DVM, MPVM, DACVPM  
Director

# What is the Veterinary Public Health Program?

## Who We Are

The Veterinary Public Health Program (VPH) is part of the Los Angeles (LA) County Department of Public Health. Our staff includes Veterinarians, Registered Veterinary Technicians, Animal Sanitation Inspectors, and clerical staff. We are responsible for protecting animal and human health, and enforcing applicable laws. Our jurisdiction is the County of Los Angeles, excluding the cities of Pasadena, Long Beach, and Vernon, which have their own health departments.

We are your local health department and are here to provide services for you, your clients and your patients.



## What We Do

- **Bite Quarantines and Rabies Control**
  - Receive and investigate approximately 10,000 bite reports per year.
  - Oversee quarantine of biting or potentially rabies-exposed animals.
  - Offer free rabies testing for neurologic or deceased biting animals.
  - Assist Federal authorities in rabies-related inspections of dogs imported into the country at Los Angeles International Airport (LAX).
  - Review rabies vaccination exemption requests for dogs living in our jurisdiction.
- **Zoonoses and Animal Disease Surveillance**
  - Receive and analyze animal disease reports.
  - Monitor and investigate outbreaks and unusual diseases.
  - Arrange free West Nile Virus testing of dead birds (availability varies by season).
  - Arrange free necropsies and other testing in cases of outbreaks (3 or more animals involved), or specific emerging disease threats.
  - Coordinate with researchers to offer free testing in cases of unusual diseases (call to see what is available).
  - Analyze disease patterns – map, graph and post data on website: [publichealth.lacounty.gov/vet/](http://publichealth.lacounty.gov/vet/).
- **Disaster and Bioterrorism Preparedness and Response**
  - Advocate for the inclusion of pets in disaster planning by local agencies.
  - Help coordinate disaster preparedness efforts between agencies.
  - Educate the public about pet disaster preparedness.
  - Assist directly in disaster response efforts.
  - Investigate reports of potential bioterrorism involving animals.



- Participate in local, regional, and state emergency exercises.
- **Community Engagement**
  - 2020 Healthy Pets Healthy Families Coalition (see p.8).
  - Organize the Annual Healthy Pet Expo (April).
  - Coordinate vaccine/preventive health clinics for underserved communities.
  - Promote dog-friendly Community Walking Groups.
- **Services we Provide**
  - Inform animal health professionals informed about local animal disease concerns and outbreaks through the Animal Health Alert Network (AHAN) (see p.7).
  - Publish articles on local disease trends and provide monthly disease counts in *Pulse*, the official publication of the Southern California Veterinary Medical Association (SCVMA).
  - Share local disease data on our website
  - Provide phone consultations to physicians, veterinarians and the public – On call Veterinarians are available Mondays through Fridays (8am-5pm) at 213-989-7060 or [vet@ph.lacounty.gov](mailto:vet@ph.lacounty.gov).



**LOS ANGELES COUNTY  
ANIMAL HEALTH ALERT NETWORK  
Registration Form**

The Veterinary Public Health Program set up an Animal Health Alert Network (AHAN) in an effort to keep veterinarians and other animal health workers informed about local animal disease concerns, outbreaks, unusual diseases, and about opportunities to participate in public health initiatives. The AHAN notifications are sent through an e-mail distribution list, so an **e-mail address is required**.

Name: \_\_\_\_\_

Position / Title: \_\_\_\_\_

Clinic / Organization: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

Phone#: \_\_\_\_\_

Fax#: \_\_\_\_\_

**Email Address (required):** \_\_\_\_\_

\*Veterinarians, veterinary technicians, animal control officers, wildlife rehabilitators and others that may work in an animal health field in our local area are invited to register and receive these alerts and updates. **Alerts may not be forwarded outside of your animal health organization, unless otherwise indicated in the alert.**

**Send completed form to:**  
**213-481-2375 (FAX) or [vet@ph.lacounty.gov](mailto:vet@ph.lacounty.gov)**





## Join Our Healthy Pets Healthy Families Coalition!

- Register by contacting us at [vet@ph.lacounty.gov](mailto:vet@ph.lacounty.gov) or 213-989-7060.
- Take our on-line Pet Health & Safety quiz to help us learn more about local pets. Encourage your family, friends, co-workers and clients to take it as well. It is available at: [publichealth.lacounty.gov/vet](http://publichealth.lacounty.gov/vet).
- Participate in projects promoting human and animal health in our community (see below for on-going projects). For more information, visit: [publichealth.lacounty.gov/vet/HealthyPetsHealthyFamilies.htm](http://publichealth.lacounty.gov/vet/HealthyPetsHealthyFamilies.htm)

**In 2012, VPH formed the 2020 Healthy Pets Healthy Families (HPHF) Coalition.** This coalition includes veterinarians, physicians, animal control workers, dog trainers and others from all over LA County. Together we work to improve animal and human health in seven focus areas:

- |                          |  |
|--------------------------|--|
| 1. Bite Prevention       | 5. Spay-Neuter                               |
| 2. Disaster Preparedness | 6. Vaccine-Preventable Diseases              |
| 3. Obesity               | 7. Zoonotic Diseases and Parasite Prevention |
| 4. Secondhand Smoke      |  |

**Accomplishments.** During the first part of the decade, the coalition was primarily involved in data gathering, which helped better characterize the local impacts of the above listed focus areas. Using this information, we designed interventions to improve health markers in both our human and animal community members. Some of our accomplishments include:

- **HPHF Community Report and pet owner brochure.** Available on our website (see p. 51-52).
- **Community dog-friendly walking groups.** These community-led groups meet every week and discuss One Health-related messages using a toolkit created by the HPHF coalition. If you are interested in leading a group, please contact our office: [vet@ph.lacounty.gov](mailto:vet@ph.lacounty.gov).
- **Pet health events.** With our annual Healthy Pet Expo (April 16th, 2016), we connect pet owners with existing veterinary resources in their community. In addition, we are involved in organizing similar, smaller-scale events to ensure pets are healthy throughout our county. If you would like help in planning or participating in community events, please contact our office: [vet@ph.lacounty.gov](mailto:vet@ph.lacounty.gov).
- **School educational messages.** Children are the most common victims of dog bites, and are at higher risk of zoonotic disease transmission from pets. By educating children grades K-5, we hope to create long-lasting change.



# Disaster Preparedness for Practices and Clients

## Background

It is estimated that there are more than 5 million pet dogs, cats, and birds in LA County. Veterinary medical staff play key roles in disaster preparedness and response. Veterinary practices and animal shelters must be ready to take care of themselves and their animal patients during the first days following a disaster.



After difficult lessons learned from Hurricane Katrina in 2005, the Pets Evacuation and Transportation Standards (PETS) Act became federal law. The PETS Act ensures state and local governments address the needs of household pets and service animals in a major disaster or emergency. The State of California created the California Animal Response Emergency System (CARES), which provides operational guidance to assist with all aspects of animal care and control in the event of a disaster or emergency.

The Veterinary Public Health Program Disaster Preparedness and Response Unit focuses on preparedness for most types of disasters including natural disasters (fires, earthquakes, flood/mudslides) or man-made (such as bioterrorism). In November 2015, our program participated in a statewide exercise to practice timely antibiotic prophylaxis distribution following a theoretical release of anthrax. Participating in such exercises allows for strengthening preparedness and response measures.

## Notable Examples of Disasters in California

- |      |  |
|------|--|
| 1991 | Loma Prieta earthquake (7.1 magnitude) <ul style="list-style-type: none"><li>• 62 fatalities, 3757 injured, \$1.1 billion in losses.</li></ul>                         |
| 1991 | Oakland Hills firestorm <ul style="list-style-type: none"><li>• 10,000 people homeless, destroying nearly 4000 dwellings, more than \$1.5 billion in losses.</li></ul> |
| 1993 | Northridge earthquake (6.7 magnitude) <ul style="list-style-type: none"><li>• 57 fatalities, more than 5000 injured, \$13 to \$40 billion in losses.</li></ul>         |
| 2009 | Station fire <ul style="list-style-type: none"><li>• 2 fatalities (fire fighters), 22 injuries, \$94 million to stop the fire</li></ul>                                |
| 2011 | Windstorms in Southern California <ul style="list-style-type: none"><li>• \$40 million in losses.</li></ul>  |

## Things Your Practice Can Do to Prepare for a Disaster

- Make sure your veterinary practice has a **disaster plan** for its staff and patients, and that staff are trained on this plan in case of an emergency
  - California Veterinary Medical Association (CVMA), American Veterinary Medical Association (AVMA), and Humane Society Veterinary Medical Association (HSVMA) have excellent resources; please see the next page for links to get you started.
  - Veterinary Practices should only house and/or hospitalize as many animals or patients as can safely be evacuated by staff should an emergency evacuation be ordered.
- Incorporate **disaster preparedness as part of your wellness examination**. When collecting a patient's history:
  - Ask your client if they have a disaster plan in place for their family and pets
  - Ask if anyone in the family smokes (smoking increases risks of house fires, and is also unhealthy for pets and humans alike.)
- **Information for clients:**
  - Consider directing clients to our Veterinary Public Health Disaster Preparedness website [publichealth.lacounty.gov/vet/DisasterPages/Disasters.htm](http://publichealth.lacounty.gov/vet/DisasterPages/Disasters.htm) for more information on:
    - Preparedness tips for the whole family
    - Putting together emergency go-bags
    - Pet wellness and safety before disasters
    - Pet first aid & CPR
    - Additional resources and links
  - Provide clients with Frequently Asked Questions (FAQ) sheet “A Guide for Pet Owners – Pet Emergency Preparedness” available for download in English and Spanish (Appendix 1).
- Get continuing education in disaster preparedness. The California Veterinary Medical Reserve Corps (CAVMRC) offers excellent training. Available at: [cvma.net/resources/disaster-response-program-2/california-veterinary-medical-reserve-corps-cavmrc/california-veterinary-medical-corps-cavmrc-information](http://cvma.net/resources/disaster-response-program-2/california-veterinary-medical-reserve-corps-cavmrc/california-veterinary-medical-corps-cavmrc-information))

## Suggested Disaster Preparedness and Response Resources

### Veterinary Practice Disaster Preparedness

- AVMA – Disaster Preparedness for Veterinary Practices – This resource includes checklists for: backing up medical records, continuity of operations plans, fire prevention, insurance and legal issues: [animalsindisasters.files.wordpress.com/2013/01/avma-disaster-preparedness-for-veterinary-practices.pdf](http://animalsindisasters.files.wordpress.com/2013/01/avma-disaster-preparedness-for-veterinary-practices.pdf).
- HSVMA webinar – Essentials of Disaster Preparedness for The Veterinary Clinic: [hsvma.org/assets/pdfs/hsvma\\_webinar\\_disaster\\_prep\\_slides\\_handout.pdf](http://hsvma.org/assets/pdfs/hsvma_webinar_disaster_prep_slides_handout.pdf)



- CVMA – Evaluate Your Veterinary Disaster Response Plan: [content/uploads/2014/10/EvaluateYourDisasterPlan\\_2014.pdf](content/uploads/2014/10/EvaluateYourDisasterPlan_2014.pdf).
- CAVMRC – Interested in volunteering to help animals when disasters occur California? [cvma.net/resources/disaster-response-program-2/california-veterinary-medical-reserve-corps-cavmrc/california-veterinary-medical-corps-cavmrc-information](http://cvma.net/resources/disaster-response-program-2/california-veterinary-medical-reserve-corps-cavmrc/california-veterinary-medical-corps-cavmrc-information).

### **Client and Public Disaster Preparedness**

- Emergency Preparedness and Response Program (EPRP) – Health education materials: [publichealth.lacounty.gov/hea/library/topics/eprp](http://publichealth.lacounty.gov/hea/library/topics/eprp)
- Ready. Prepare. Plan. Stay Informed – In anticipation of El Nino, preparedness tips for severe weather and other emergencies: [ready.gov](http://ready.gov).



Station Fire 2009, San Gabriel Mountains



# Highlights on Laws Pertaining to Veterinary Public Health

## Animal bites

California - California Health and Safety Code (Section 2606)

- In California, **anyone with knowledge** of an animal bite to a person must report the incident to the local health department.
- Dogs, cats and ferrets that have bitten a person must be isolated for 10 days.
- Bites from rodents (rats, squirrels, etc.) and lagomorphs (rabbits) are not reportable.



## Rabies vaccination of pets

California - California Health and Safety Code (Section 121690)

- **Starting January 1st, 2014, dogs in California can be vaccinated against rabies as early as 3 months of age** (vaccinations at 4 months are still legal).
- Licensing of dogs in California remains at 4 months of age.
- In cases where rabies vaccination may endanger a dog's life, a licensed veterinarian can submit a rabies vaccine exemption request using an approved form(s) to the local health officer (see p. 22).
- *Note:* Although California State Law does not require rabies vaccinations of cats, many cities in LA County require cat rabies vaccination and/or licensing (see p. 24).

## Animal disease reporting

LA County - Code of Ordinances (Title 10, Division 2, Section 10.64.020)

- Any infectious disease in animals in Los Angeles County must be reported to the local health department.
- A disease priority list has been made by VPH (see p. 30).

## Animal importation

LA County - Code of Ordinances (Title 10, Division 2, Section 10.56.10)

- No sick or injured animal can be imported into LA County (exceptions apply).

Centers for Disease Control and Prevention (CDC) - Bringing a Dog into the United States

- Dogs imported from a country where rabies is present should be healthy, vaccinated against rabies as early as 3 months of age, and wait one additional month after vaccination prior to arrival into the USA.



- For more information: [cdc.gov/importation/bringing-an-animal-into-the-united-states/dogs.html](https://www.cdc.gov/importation/bringing-an-animal-into-the-united-states/dogs.html).

United States Department of Agriculture (USDA) - Animal Welfare Act (§2148, Importation of live dogs)

- Dogs imported into the USA for retail, research, or veterinary treatment purposes must be at least 6 months of age, in good health and be up to dates on their vaccines. If an imported dog is intended for resale, an importer must receive an import permit from the USDA prior to shipment.
- For more information: [aphis.usda.gov/wps/portal/aphis/ourfocus/importexport/sa\\_animals/sa\\_pet\\_travel](https://www.aphis.usda.gov/wps/portal/aphis/ourfocus/importexport/sa_animals/sa_pet_travel).

California Department of Public Health:

California Entrance Requirements for Dogs:

- “All domestic dogs must be healthy. Dogs over four (4) months of age must have a certificate of current rabies vaccination. A Certificate of Veterinary Inspection, also known as a health certificate, is not required for privately owned dogs being brought into the State of California. Persons bringing dogs into California with intent to sell or transfer ownership must have a health certificate completed by a licensed veterinarian within the 10 days prior to the date of importation. The person seeking to bring a dog into the state must send a copy of the health certificate to the county health department in the county in which the dog is to be sold or in the county of residence of the person who is receiving the dog. All persons transporting dogs via commercial air should call the airline for any additional requirements they might have.”

California Entrance Requirements for Cats:

- “All domestic cats must be healthy. Neither a Certificate of Veterinary Inspection, also known as a health certificate, nor a rabies vaccination is required to import a cat into California; however, if traveling into California via airplane, please call the airline as they may have additional requirements.”

Interstate Pet Exportation

- Accredited and licensed California veterinarians must complete the United States Interstate and International Certificate of Health Examination for Small Animals (APHIS Form 7001) prior to the interstate exportation of dogs and cats. Please check with the specific state regarding specific exportation requirements.
- The form is available at: [aphis.usda.gov/library/forms/pdf/APHIS7001.pdf](https://www.aphis.usda.gov/library/forms/pdf/APHIS7001.pdf)
- For more information: [cdph.ca.gov/programs/vphs/Pages/PetImportation.aspx](https://www.cdph.ca.gov/programs/vphs/Pages/PetImportation.aspx).



# Resources for Current Recommended Veterinary Standards

## Antibiotic-resistance management and prevention guidelines

**Basic Guidelines of Judicious Therapeutic Use of Antimicrobials (2014)** – American Association of Feline Practitioners (AAFP) & American Animal Hospital Association (AAHA). Available at: [catvets.com/public/PDFs/PracticeGuidelines/Guidelines/2014AntimicrobialsGuidelines%20AAHA\\_AAFP.pdf](http://catvets.com/public/PDFs/PracticeGuidelines/Guidelines/2014AntimicrobialsGuidelines%20AAHA_AAFP.pdf).

**Judicious Use of Antimicrobials** – AVMA. Available at: [avma.org/KB/Policies/Pages/Judicious-Therapeutic-Use-of-Antimicrobials.aspx](http://avma.org/KB/Policies/Pages/Judicious-Therapeutic-Use-of-Antimicrobials.aspx).

**Therapeutic antibiotic use patterns in dogs: observations from a veterinary teaching hospital.** Shea A, McCarthy R & Lindenmayer J. J Small Animal Pract (2011). Vol.52(6): 310-318. Available at: [ncbi.nlm.nih.gov/pmc/articles/PMC3106276/pdf/nihms290666.pdf](http://ncbi.nlm.nih.gov/pmc/articles/PMC3106276/pdf/nihms290666.pdf).

**Antimicrobial use guidelines for treatment of urinary tract disease in dogs and cats:** antimicrobial guidelines working group of the international society for companion animal infectious diseases. Weese JS, *et al.* Vet Med Int (2011). Vol.201. Available at: [ncbi.nlm.nih.gov/pmc/articles/PMC3134992/](http://ncbi.nlm.nih.gov/pmc/articles/PMC3134992/).

## Worker safety

**Veterinary Standard Precautions for Zoonotic Disease Prevention in Veterinary Personnel** – National Association of State Public Health Veterinarians (NASPHV). Available at: [nasphv.org/documentsCompendia.html](http://nasphv.org/documentsCompendia.html)

**Brucella canis Infections in Humans (2012)** – NASPHV. Available at: [nasphv.org/documentsCompendia.html](http://nasphv.org/documentsCompendia.html)

## Rabies

**Compendium of Rabies Control and Prevention (2012)** – California Department of Public Health (CDPH). Available at: [cdph.ca.gov/HealthInfo/discond/Documents/Rabies/CARabiesCompendium2012%20FINAL,%20rev%2010\\_13.pdf](http://cdph.ca.gov/HealthInfo/discond/Documents/Rabies/CARabiesCompendium2012%20FINAL,%20rev%2010_13.pdf)

**Animal Rabies** – NASPHV. Available at: [nasphv.org/Documents/RabiesCompendium.pdf](http://nasphv.org/Documents/RabiesCompendium.pdf)

## Vaccination guidelines

**Canine Vaccinations Guidelines (2011)** – AAHA. Available at: [aaha.org/public\\_documents/professional/guidelines/caninevaccineguidelines.pdf](http://aaha.org/public_documents/professional/guidelines/caninevaccineguidelines.pdf)

**Feline Vaccination Guidelines (2013)** – AAFP. Available at: [catvets.com/guidelines/practice-guidelines/feline-vaccination-guidelines](http://catvets.com/guidelines/practice-guidelines/feline-vaccination-guidelines)



# Bite Reporting and Rabies Control

## OVERVIEW

### Background

In the 1920s-1940s, hundreds of rabid dogs were diagnosed each year in LA County. The risk of rabies from dogs and cats is now far lower because of widespread vaccination of pets. However, rabies persists locally in bats. In addition, large numbers of dogs are imported in from countries where the canine variant of rabies still exists (see page 25).



### What You Need to KNOW

- We offer free rabies testing during our working hours. Results are generally available within 2-3 days. Expedited testing may be arranged in high-risk situations.
- Bat variants of rabies circulate in Southern California. Skunk variants of rabies are currently found in Santa Barbara and further north. Bats, skunks, foxes, raccoons, coyotes, **and even opossums** are all considered potential sources of rabies, based on California and national rabies data.
- The State of California mandates rabies vaccination for dogs, but not for cats. Some localities require rabies vaccination and/or licensing of cats. See page 24.
- As of January 2014, the minimum age dogs may receive their first rabies vaccination was changed from four months of age to **three** months of age.
- Pet ferrets are illegal in California. They are reported to California Department of Fish and Wildlife (CDFW).
- In LA County, VPH is responsible for enforcing laws pertaining to bites and rabies control. **Exception: the cities of Pasadena, Long Beach, and Vernon** have their own Health Departments, and they are responsible for enforcing rabies control laws in their own cities.
- Quarantines of owned animals are usually overseen by VPH at the animal's home, unless the animal cannot be contained by the owner. Quarantines may be performed at shelters or veterinary practices, however the animal owner will be responsible for any associated cost.
- Transfers of quarantined animals are not allowed except by special approval from VPH.
- Three types of bite and rabies-related incidents are legally reportable to VPH (**excluding bites from wild rabbits, gophers, squirrels and other rodents**). These incidents are reportable by **anyone aware of a bite**, including veterinarians their staff:
  1. **Mammals (domestic or wild) biting people.**
  2. **Domestic mammals (pets or livestock) that come into contact with wildlife.**
  3. **Neurologic animals suspected of being rabid.**

- Please consult **The California Compendium of Rabies Control (2012)** for more information (Appendix 2).

## 1. MAMMALS BITING PEOPLE

- Any DOMESTIC animal that bit a person must be quarantined and observed for clinical signs of rabies by VPH staff. This is true regardless of the rabies vaccination status of the biting animal.
  - **Dog/Cat/Ferret quarantine period – 10 days.**
  - **Horses/other livestock quarantine period – 30 days.**
  - The animal is under quarantine until VPH staff issues a Quarantine Release Notice.
- Biting animals **are not to be euthanized until after the quarantine period** without special permission from VPH staff. If the domestic animal is gravely ill or injured, it may be euthanized during the quarantine period for humane reasons without prior permission. **In such cases, the head of the animal must be submitted appropriately for rabies testing** (see page 20). Any WILD mammal that has bitten a human shall be humanely euthanized and properly submitted for rabies testing. Exceptions include: species with very low risk, such as a marine mammals, primates, or captive exotic animals. In such cases, the quarantine is a minimum of 30 days.
- **NOTE:** Bites from bats can be very small. If a bat is found near a child or sleeping person it must be reported and tested for rabies, even if a bite is not visualized.

## 2. DOMESTIC MAMMALS THAT COME INTO CONTACT WITH WILDLIFE

- Incidents in which a domestic animal had contact (potential or confirmed bite) with a wild mammal are reportable to VPH, unless the wild animal was a rabbit, gopher, squirrel or other rodent.
- If possible, the wild animal should be humanely euthanized and submitted for rabies testing.
- If the wild mammal tests negative for rabies, no quarantine of the domestic animal is required.
- If the wild mammal is not tested or tests positive for rabies, the domestic animal must be quarantined.
- Quarantine length of the animal depends on its vaccine status:
  - Domestic animal **WAS up-to-date** on rabies vaccination at the time of incident - **30 days**
  - Domestic animal **WAS NOT up-to-date** on rabies vaccination at the time of incident - **180 days**.
- The animal is considered to be under quarantine until VPH staff issues a Quarantine Release Notice.



- NOTE: If a bat is found near a pet or livestock it must be tested for rabies in case a bite occurred.

### 3. NEUROLOGIC ANIMAL SUSPECTED OF BEING RABID

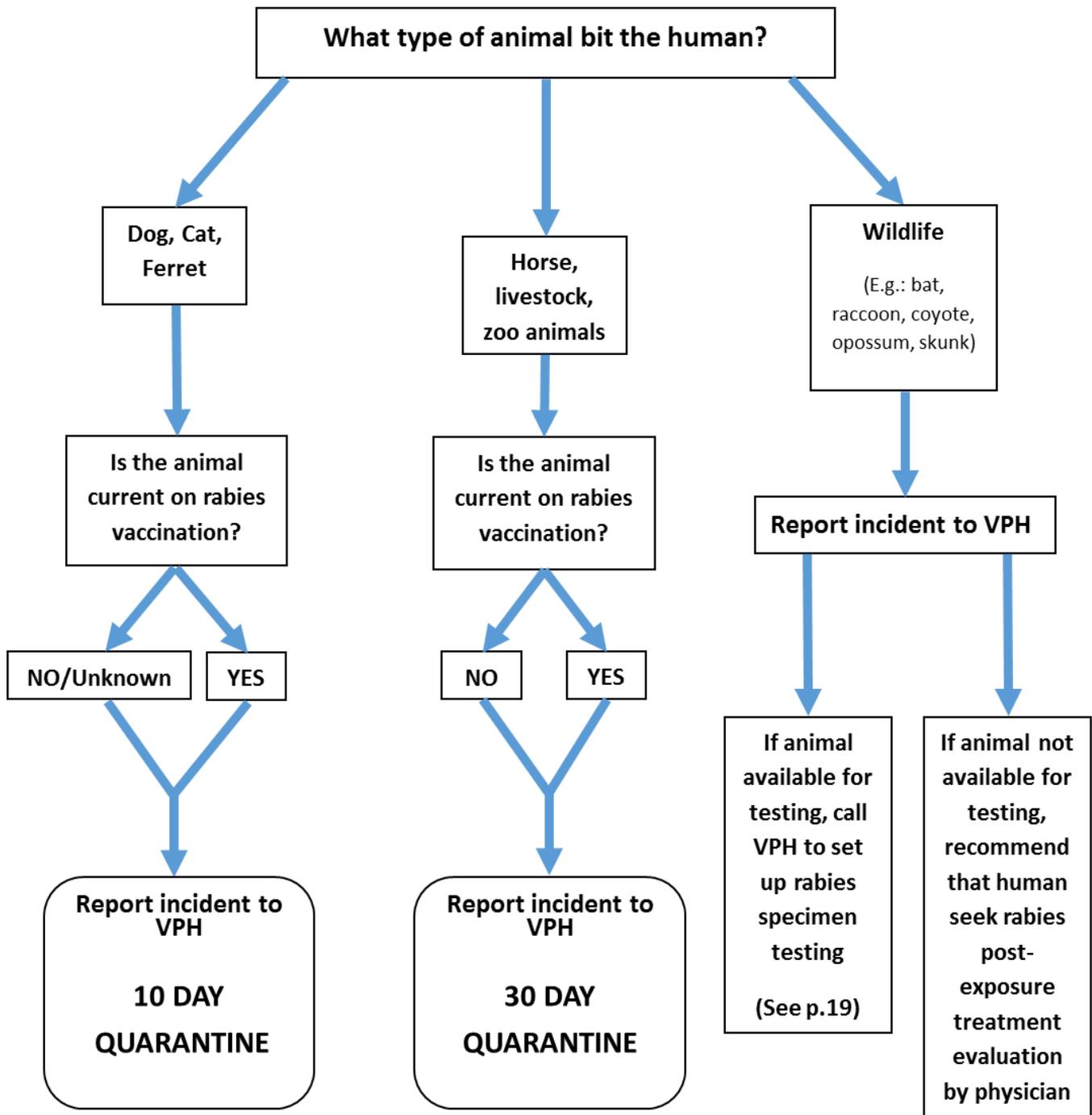
- Expedited rabies testing (<1 day) can be arranged if the situation is urgent. Isolate the animal and contact our office immediately.
- REPORT incident using a Bite Report Form. If no one was bitten, in the Person Bitten section – write “None.”

## What You Need to DO

- Report all three types of incidents to us as described on the previous page.
  - Fill out appropriate form and fax to (213) 481-2375
  - Please also call our office if you are requesting a specimen pickup for rabies testing.
- **Forms:** For bites and rabies-related incidents, use the forms mentioned below:
  - Animal (wild or domestic) bite to a person: Use form on page 46.
  - Wild animal vs. domestic animal: Use form on page 47.
  - Any incident involving a bat: Use form on page 48.
  - Neurologic animal suspected of being rabid: Use Bite Report Form on page 46. If no person was bitten, under the ‘Person Bitten’ field, write ‘none.’
- Learn when and how to submit an animal’s head for rabies testing. See page 20.
- Booster rabies vaccination in domestic animals exposed to wildlife (applies if wild animal is not tested for rabies, or tests positive for rabies):
  - Booster the rabies vaccination as soon as possible, even if it is not due.
    - If the domestic animal was never vaccinated, we recommend the Texas Protocol for unvaccinated animals: give the rabies vaccine on week 0 (i.e. as soon as possible), week 3, and week 8 after the rabies-exposure incident.

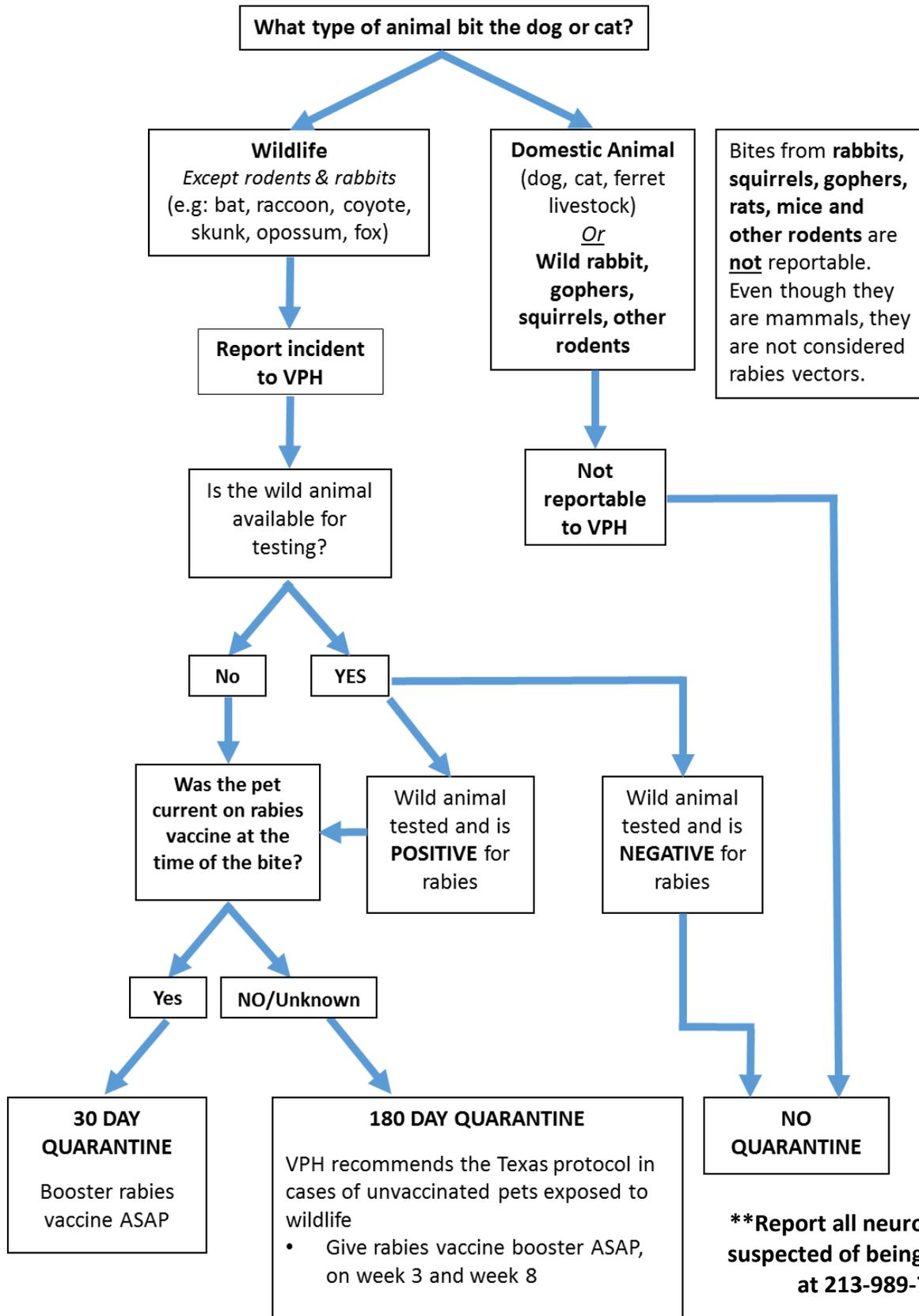


# Human bitten by an animal



- Healthy animals that bit a human are not to be euthanized during the quarantine period.
- Sick or injured animals that are euthanized during the quarantine period due to humane reasons must be tested for rabies.
- If a pet bit a human and was not up to date on the rabies vaccine at the time of the bite, do NOT vaccinate the pet until after the quarantine period.
- Report all neurologic animals suspected for being rabid to VPH at (213) 989-7060

# Domestic animal bitten by another animal



**\*\*Report all neurologic animals suspected of being rabid to VPH at 213-989-7060\*\***



# Rabies Testing – Procedures for Specimen Submission

## What You Need to KNOW

- Rabies testing is performed by Los Angeles County’s Public Health Laboratory (PH Lab), using Direct Fluorescent Antibody (DFA) testing on brain tissue. There is no charge for rabies testing.
- For all animals, except bats, only the head will be accepted for rabies testing. The PH Lab is not equipped to perform decapitation, and has minimal capacity to dispose of carcasses and excess tissue. **DO NOT DECAPITATE A BAT** – submit the entire carcass. After rabies testing, the bat’s body is forwarded to a state laboratory for species identification.
- **Healthy domestic animals that have bitten a human are not to be euthanized during the quarantine period.** Allowing such testing would overwhelm the PH Lab.
- **Gravely ill or injured domestic animals that have bitten a human may be euthanized with permission from VPH** during the quarantine period for humane reasons. In these cases, the head of the animal must be submitted appropriately for rabies testing.
- **Refrigerate** deceased animals to be tested for rabies. **DO NOT FREEZE.** If the sample is accidentally frozen, testing is still possible, but will be delayed and results may be inconclusive.
- Specimen preparation, including decapitation, must be performed by the facility submitting the sample. Only rabies-vaccinated staff should perform decapitations.
- *Packaged specimens that are leaking blood, have specimen visible through the packaging, or that contain live fleas or ticks WILL be rejected by the PH Lab. The submitting clinic may be responsible for collecting rejected specimens from the PH Lab so the sample may be properly prepared and resubmitted.*

## What You Need to DO

1. Complete the appropriate Bite Report Form (or Bat Submission Form). Use this form even if no person was bitten – in that case write “None” in the Person Bitten Section.
2. Assign rabies-vaccinated staff to decapitate the head from the body. Submit only the head for testing. (Exception: for bats, do not decapitate – submit the entire body).
3. If there are live fleas or ticks on the specimen, apply flea/tick spray directly onto the specimen. Packaged specimens that contain live fleas or ticks **WILL** be rejected.
4. Wrap the specimen in newspaper or other absorbent material, and ensure the specimen is not visible. Double bag it in 2 plastic, leak-proof bags.
5. Place the double-bagged specimen into an opaque or non-transparent outer container (e.g. box or firm opaque plastic bag). Seal shut.
6. Attach a copy of a completed Bite Report Form (or Bat Submission Form) to the outside of the container.
7. Specimens will **NOT** be picked up **without the completed Bite Report Form.**
8. Fax a copy of the completed Reporting Form to VPH at (213) 481-2375.
9. Once specimen is ready for pick-up, call VPH office at (213) 989-7060 to request transportation of the specimen to the PH Lab for testing.



## Animal Control Agencies in Los Angeles County

Agency	Telephone Number	Address	On-site Shelter
Avalon City Hall (speak to operator for Animal Control dispatch)	(310) 510-0220 ext 0	209 Metropole Ave, Avalon, CA 90704	Yes nearby
Beverly Hills Animal Control	(310) 285-1119	455 N Rexford Drive, 1st Floor Beverly Hills, CA 90210	No
Best Friends (Mission Hills location)	(818) 643-3989	15321 Brand Ave, Mission Hills, CA 91345	Yes
Best Friends (NKLA – West LA location)	(424) 208-8840	1845 Pontius Ave, West L.A. 90025	Yes
Burbank Animal Control	(818) 238-3340	1150 N. Victory Pl, Burbank, CA 91502	Yes
City of Commerce Animal Control	(323) 887-4460	2535 Commerce Way, Commerce, CA 90040	No
Culver City Animal Control	(310) 837-1221	9770 Culver Blvd., Culver City, CA. 90232	No
Duarte City Animal Control	(626) 357-7938	1600 E. Huntington Dr, Duarte, CA 91010	No
El Segundo Animal Control	(310) 523-2231	350 Main St, El Segundo, CA 90245	No
Hawthorne Animal Control	(310) 349-2948	12501 S. Hawthorne Blvd, Hawthorne, CA 90250	No
Hermosa Beach Animal Control	(310) 524-2750	1035 Valley Dr, Hermosa Beach, CA 90254	No
Huntington Park City Animal Control	(323) 582-6161	6550 Miles Ave., Huntington Park, CA 90255	No
Inland Valley Humane Society	(909) 623-9777	500 Humane Way, Pomona, CA 91766	Yes
Lawndale Animal Control Division	(310) 973-3200	14717 Burin Ave, Lawndale, CA 90260	No
Long Beach Animal Care Services	(562) 570-7387	7700 E. Spring St, Long Beach, CA 90815	Yes
Los Angeles (City of), Department of Animal Services	(888) 452-7381		
Chesterfield (South Los Angeles) Shelter	(888) 452-7381	1850 W. 60th St. Los Angeles, CA 90047	Yes
East Valley Shelter	(888) 452-7381	14409 Vanowen St, Van Nuys, CA 91405	Yes
Harbor Shelter	(888) 452-7381	957 N. Gaffey St., San Pedro, CA 90731	Yes
North Central Shelter	(888) 452-7381	3201 Lacy St, Los Angeles, CA 90031	Yes
West Los Angeles Shelter	(888) 452-7381	11361 W. Pico Bl, Los Angeles, CA 90064	Yes
West Valley Shelter	(888) 452-7381	20655 Plummer Street, Chatsworth, CA 91311	Yes
Los Angeles County Department of Animal Care and Control	(562) 728-4882		
Agoura Shelter	(818) 991-0071	29525 Agoura Rd, Agoura, CA 91301	Yes
Baldwin Park Shelter	(626) 962-3577	4275 N. Elton St, Baldwin Park, CA 91706	Yes
Carson Shelter	(310) 523-9566	216 W. Victoria Ave, Carson, CA 90748	Yes
Castaic Shelter	(661) 257-3191	31044 N. Charlie Canyon Rd, Castaic, CA 91310	Yes
Downey Shelter	(562) 940-6898	11258 S. Garfield Ave, Downey, CA 90242	Yes
Lancaster Shelter	(661) 940-4191	5210 W. Avenue I, Lancaster, CA 93536	Yes
Manhattan Beach Animal Control	(310) 802-5160	420 15th St, Manhattan Beach, CA 90266	No
Monterey Park Animal Control Bureau	626-573-1311	320 W. Newmark, Monterey Park, CA 90640	No
Pasadena Humane Society	(626) 792-7151	361 S. Raymond Ave, Pasadena, CA 91105	Yes
Redondo Beach City Animal Control	(310) 318-0611	415 Diamond St #E, Redondo Beach, CA 90277	No
San Gabriel Valley Humane Society	(626) 286-1159	851 E. Grand Ave, San Gabriel, CA 91776	Yes
Santa Monica Animal Control	(310) 458-8594	1640 9th St, Santa Monica, CA 90401	Yes
Southeast Area Animal Control Authority (SEAACA)	(562) 803-3301	9777 Seaaca St, Downey, CA 90241	Yes
spcaLA Administrative Office	(888) 772-2521	5026 West Jefferson Blvd, LA, CA 90016	No
South Bay Pet Adoption Center	(310) 676-1149	12910 Yukon Ave, Hawthorne, CA 90250	Yes
PD Pitchford Companion Animal Village	(562) 570-7722	7700 E. Spring St, Long Beach, CA 90815	Yes
Torrance Animal Control	(310) 618-3850	2200 Jefferson St, Torrance, CA	No



# Canine Rabies Vaccination Exemptions

## Background

On January 1, 2012 California State Law began allowing rabies vaccination exemptions for dogs if approved by the Local Health Officer (LHO). In some counties in California, the LHO has delegated the responsibility to an animal control agency. In most of LA County (except Pasadena, Long Beach and Vernon) requests are reviewed by VPH.

The law states that an exemption may be granted for the rabies vaccine, if “a rabies vaccination would endanger the dog’s life.” It also requires that the condition warranting the exemption be documented. This state law applies for ***dogs only***. Local jurisdictions may enact similar requirements for licensing of cats. To check which cities in LA County require cat licensing and rabies vaccination, see page 24. The entire law is available at: [leginfo.legislature.ca.gov/faces/codes.xhtml](http://leginfo.legislature.ca.gov/faces/codes.xhtml). Click on the Health and Safety Code. Then enter for Code: HSC and Section: 121690.



## What You Need To KNOW

- In the first year this law came into effect, our office worked to develop consistent standards for reviewing requests, referring to published literature on adverse reactions to rabies vaccinations in dogs.
- In 2014, VPH received 154 requests. We approved 35% and rejected 51%. The remaining 14% were misdirected requests (wrong jurisdiction or rabies vaccine exemption requests for cats).
- The exemption is valid for one year only, after which the dog must either be vaccinated for rabies or another full request must be submitted and approved.
- If the exemption is approved, the dog must be confined to the owner’s premises or must be on a leash not exceeding six feet in length and under the direct control of an adult. The dog should have no contact with any dog or cat that is not currently vaccinated against rabies.
- For dogs living in LA County (except Pasadena, Long Beach, or Vernon), canine rabies vaccination exemption requests are submitted by a veterinarian to our program. See below for details.
  - For dogs living in Pasadena, contact the Pasadena Humane Society at 626-792-7151.
  - For dogs living in Long Beach, contact Long Beach Animal Care Services, at 562-570-7387, or visit: [longbeach.gov/acs/pet-laws-and-licensing/canine-rabies-exemption/](http://longbeach.gov/acs/pet-laws-and-licensing/canine-rabies-exemption/)
  - For dogs living in Vernon, contact the Southeast Area Animal control authority (SEAACA) at 562-803-3301
- Rabies vaccine exemption requests must come from veterinarians only, not from dog owners.
- Cat owners should contact their city to inquire about procedures for getting an exemption.
- Cases where an exemption **may be approved** include:
  - Life-threatening anaphylactic reaction soon after administration of a rabies vaccine
    - Signs consistent with anaphylactic shock

- Mild facial angioedema, hives, or localized reactions do **not** qualify as life-threatening.
- Immune-Mediated Hemolytic Anemia (IMHA), if:
  - Dog is still within first year after diagnosis, or
  - Onset was within 1 month of a rabies vaccination, or
  - More than one episode (i.e. documented relapses)
- Polyradiculoneuropathy if:
  - Dog is still within the first year after diagnosis, or
  - Onset was within 1 month after rabies vaccination.
- Dog currently on immunosuppressive therapy for cancer or immune-mediated disease
  - Low dose prednisone is not considered immunosuppressive therapy.
- Terminal prognosis (dog has fewer than 3 months to live in the opinion of presiding veterinarian)
- Exemptions **will NOT be approved** in the following cases:
  - Old age
  - Positive rabies titers
  - Minor or moderate reactions to rabies vaccination
  - Reaction to vaccinations other than rabies
  - Medical condition not documented or no documentation submitted.
  - Short-term exemptions (e.g. 1 month exemption for recovery from acute illness). In such cases, work with the Animal Control or other licensing agency to request a temporary delay.
  - Illegible requests
- We strive to respond to exemption requests within 5 business days.

## What You Need To DO

- Inform your clients that, if their exemption request is approved, their dog:
  - Will be considered at higher risk for contracting rabies and will be considered legally unvaccinated. This means the animal will be subject to a California state-mandated 180 day quarantine if exposed to a wild animal rather than just 30 days.
  - Must be kept at home, or on a 6 foot long leash controlled by an adult.
  - Cannot live with other unvaccinated animals.
- In order to apply for an exemption, a veterinarian must fill out the **both forms on page 49 and 50**.
  - Submit the forms with **up to** 5 pages of the medical records documenting the dog's condition.
- Respond to any requests from us for additional information (usually sent by fax).
- Provide copies of the final document (Approved or Not Approved) to your client.

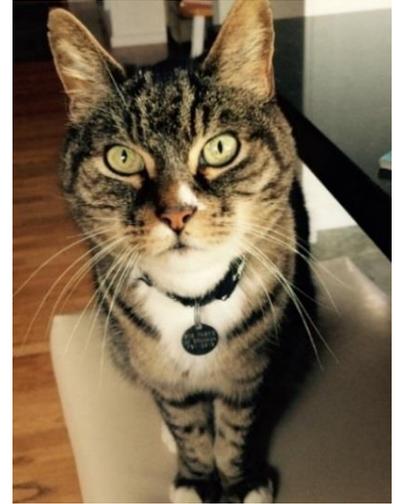


# Cat Rabies Vaccination & Licensing Requirements

Updated January 2019

## Background

Although California State Law does not require rabies vaccination of cats, it is highly recommended. A County of Los Angeles ordinance exists requiring rabies vaccination and licensing of cats. Certain cities uphold this ordinance, where cats must be vaccinated for rabies and licensed (based on owner address, not address of veterinary hospital or clinic). Information regarding licensing in certain cities can be obtained by calling local shelters or animal control services divisions. A summary of licensing and rabies vaccination cities is listed below:



### **Cities of Los Angeles that require both cat rabies vaccination and cat licensing:**

*Artesia, Baldwin Park, Bell, Bradbury, Calabasas, Carson, Compton, Cudahy, El Monte, El Segundo, Hawaiian Gardens, Hidden Hills, Industry, Inglewood, Irwindale, La Habra Heights, La Cañada Flintridge, La Mirada, Lancaster, La Verne, Lawndale, Lomita, Long Beach, Malibu, Maywood, Palmdale, Pomona, San Fernando, Sierra Madre, Walnut, West Hollywood, Westlake Village, Whittier*

### **\*Unincorporated Areas/Communities in LA County require both cat rabies vaccination and licensing**

### **Cities of Los Angeles that require cat rabies vaccination but do NOT require cat licensing:**

*Agoura Hills, Alhambra, Covina, Gardena, La Puente, Lynwood, Monterey Park, Palos Verdes Estates, Rancho Palos Verdes, Rolling Hills Estates, West Covina*

### **Cities of Los Angeles that do NOT require cat rabies vaccination but require cat licensing:**

*Diamond Bar, Santa Clarita*

### **Cities of Los Angeles that do NOT require cat rabies vaccination or cat licensing:**

*Arcadia, Avalon, Azusa, Bell Gardens, Bellflower, Beverly Hills, Burbank, Cerritos, Claremont, Commerce, Culver City, Downey, Duarte, Glendale, Glendora, Hermosa Beach, Hawthorne, Huntington Park, Lakewood, Los Angeles (City of), Manhattan Beach, Monrovia, Montebello, Norwalk, Paramount, Pasadena, Pico Rivera, Redondo Beach, Rolling Hills, Rosemead, San Dimas, San Gabriel, San Marino, Santa Fe Springs, Santa Monica, Signal Hill, South El Monte, South Gate, South Pasadena, Temple City, Torrance, Vernon*

Note: Information is based on review of city municipal codes in 2108. City laws are subject to change. Cat owners are encouraged to contact their city for the latest regulations.

# Imported Puppies and Public Health

## We Need YOUR Help

### Background

Puppies are bred and sold all over the globe. Over 100 dogs arrive at LAX every month. The threat of importing diseases into LA County with these animals is real, as evidenced by the importation of two separate rabid pets that were visibly sick (2004 – dog from Thailand; 1987 – cat from Mexico). Other animals imported into the United States have been diagnosed with Monkey Pox, leishmaniasis, screw worm infestations, distemper, and parvovirus.



The CDC is the federal agency in charge of regulating imported dogs and cats. The USDA is the federal agency that ensures the welfare of animals during and after the importation process. LA County VPH assists the federal government with inspections of some animals at LAX to verify the health status of animals and their ages. VPH also enforces local dog importation quarantines within LA County when an importer has received permission from CDC for a Confinement Agreement prior to importation of the dog.

### New regulations for imported dogs

#### Center for Disease Control and Prevention (CDC)

On August 11, 2014, CDC published new guidance requiring any imported dog, including puppies and service animals, to be healthy and vaccinated against rabies at least 30 days prior to their arrival in the United States. Federal regulation states that dogs cannot be vaccinated for rabies any earlier than 3 months of age. The new guidance allows CDC to **deny entry** to any dog that is not following these requirements. For more information please visit: [cdc.gov/importation/bringing-an-animal-into-the-united-states/dogs.html](http://cdc.gov/importation/bringing-an-animal-into-the-united-states/dogs.html).

#### United States Department of Agriculture (USDA)

On November 17, 2014, the USDA amended their Animal Welfare Act regulation to prohibit the importation of dogs into the United States for the purpose of resale, research, or veterinary treatment, unless the dog is in good health, has received all necessary vaccinations, and is at least **6 months of age**. If an imported dog is intended for resale, an importer must receive an import permit from the USDA prior to shipment. For more information please visit: [aphis.usda.gov/wps/portal/aphis/ourfocus/importexport/sa\\_animals/sa\\_pet\\_travel](http://aphis.usda.gov/wps/portal/aphis/ourfocus/importexport/sa_animals/sa_pet_travel).



## What You Need to KNOW

- **Many imported puppies are under 2 months of age** and may arrive dehydrated and hypoglycemic.
- The most commonly imported breeds are **English and French bulldogs**. The most common exporting countries being include **South Korea, Ukraine, the Czech Republic, and Canada**. Many of the countries of origin have prevalent canine rabies.
- Some imported puppies have **fraudulent paperwork** overstating the dog's age, presumably to avoid federal quarantine laws.
- Currently **no federal or local inspectors** are tasked with examining dogs arriving **at California's border with Mexico**.
- **Frequent importers have websites that advertise the puppies as being bred domestically**. As a result, many new owners do not know that their new puppy is from another country.



## What You Need to DO

- **Inquire about the origin of any new puppy**. If the new puppy owner did not see the parents of the puppy, it could be imported.
- **Check the teeth to verify age of puppy**, and verify that the real age matches the paperwork. This is especially important before giving the rabies vaccine.
- **If the puppy is sick, consider foreign animal diseases, including rabies**. If you suspect rabies or any other infectious disease in the puppy, please report to VPH immediately.
- **Reinforce proper hygiene habits and biosecurity to the owner** (e.g., wash hands after handling the puppy, pick up and discard feces immediately, and don't bring the puppy around other animals until puppy is confirmed to be healthy and fully vaccinated).
- If you are helping an owner **export a pet** to another country, their paperwork needs to be signed off by the local USDA office at: 222 Kansas St, El Segundo, 90245; (310-725-1970)

For more information: [publichealth.lacounty.gov/vet/PetImport.htm](http://publichealth.lacounty.gov/vet/PetImport.htm).



# Animal Disease Reporting and Surveillance SUMMARY

## Background

LA County is very unique. **Many diseases in companion animals and wildlife are legally reportable locally that are not reportable elsewhere.** VPH tracks diseases in all species. LA County passed wide-ranging laws in the 1920s after a devastating Foot-And-Mouth Disease outbreak. These laws required all infectious diseases in animals to be reported. These laws were revived after the anthrax attacks in 2001. In 2007, VPH created a Reportable Disease Priority List for the first time, to clarify what was to be reported (see p. 30 and 31).



Veterinary staff are crucial partners in the effort to track the epidemiology of local diseases. Reporting by veterinary practices and shelters has helped document patterns and changes associated with familiar diseases, such as the increase in rabies in bats and the bi-modal seasonality of parvo in dogs. Reporting by veterinarians has also uncovered new and potentially emerging diseases, such as the highly pathogenic bacteria *Burkholderia pseudomallei* in a local iguana in 2012, and the invasive ocular worm *Onchocerca lupi* in local dogs.

The future will bring additional infectious disease challenges. Antimicrobial resistance confronts clinicians in the exam room and will likely be the focus of increasing amounts of legislation affecting animal care. Pesticide resistance complicates efforts to control disease vectors such as fleas. New, invasive *Aedes* mosquitoes in LA County are drought-resistant and capable of spreading heartworm and other diseases.

By working together to monitor animal disease in the county, veterinarians and public health can work together to address these challenges in order to protect the community.

Additional information on local animal disease epidemiology can be found in our “Animal Disease Surveillance Report, Los Angeles County – 2013”, available on our website (see p.52).

To see the LA County Ordinances related to infectious disease reporting in animals, visit [municode.com/library](http://municode.com/library). Click on the state of California, then Los Angeles County, then click on Title 10. Search for 10.56.010, 10.64.010, 10.64.020, 10.64.030, 10.72.010, 10.72.020, 10.72.030, and 10.72.040.

In 2014, VPH began receiving notification directly from veterinary laboratories about positive test results on three diseases: heartworm, leptospirosis, and coccidioidomycosis. After a notification is received, VPH contacts the veterinarian caring for the animal in order to obtain the full report.

In order to categorize cases of disease consistently our program has developed case definitions. A case definition is a set of criteria used to evaluate reported cases of a disease and determine how they should be counted. A case definition categorizes cases as “confirmed”, “probable” or “suspected”. Laboratory test verification is required for a case to be considered confirmed. VPH is currently the



only public health program in the United States consistently tracking numerous infectious diseases in companion animals. Case definitions are available on VPH's website, at: <http://www.publichealth.lacounty.gov/vet/surveillance.htm>

Please call the VPH office at 213-989-7060 if you have questions. Ask to speak to our Veterinarian-On-Duty.

## What You Need to KNOW

- There is a list of reportable animal diseases for LA County. In 2015, two fungal infections were added: cryptococcosis and histoplasmosis, because fungal infections may increase in a warming climate. Anaplasmosis was also added (see p.30-31).
- If you report a disease which is also reportable to the State of California, VPH will forward the report to CDPH or the California Department of Food and Agriculture (CDFA) on your behalf. There are six diseases in animals are reportable to CDPH: anthrax, plague, tularemia, viral hemorrhagic fevers (e.g. Ebola virus), and *Brucella* species (excluding *Brucella canis*), and rabies. Many diseases of livestock are reportable to CDFA (see CDFA website for further details).
- VPH offers free testing for:
  - **Rabies** – If requesting testing, use only Bite Reporting forms to expedite the process (see p.46).
  - **WNV in birds** – With the help of the California WNV Surveillance Program, **free** testing of dead crows and raptors is offered year-round.
  - **Unusual, emerging, outbreak situations** – **Free** necropsies and other diagnostic tests are available in cases of an outbreak (3 or more animals) or when an emerging, dangerous or foreign pathogen is suspected. Specimen are tested at the California Animal Health and Food Safety Laboratory (CAHFS) in San Bernardino. The dates, locations, and symptoms of each animal in the outbreak must be provided. Carcasses must be fresh and refrigerated, not frozen.
- Veterinary laboratories report positive tests for heartworm, leptospirosis, and coccidioidomycosis to VPH. The list of diseases that are monitored this way may be increased. Veterinary practices are then contacted by our program with a request for a full report.
- Any disease may be reported using our Animal Disease/Death Reporting Form on page 44. Several disease-specific exist (e.g. heartworm, parvo and leptospirosis) are also available on our website (see p.43).



- **If you are reporting a potential rabid animal, use the Bite Report Form on page 46, even if no person was bitten.** If no person was bitten, write “none” in the Person Bitten area. The reason is that reports on this form and other bite and rabies-related forms (pages 46-48) are acted on by our staff automatically, while reports on Animal Disease forms are held for review by a veterinarian.

## What You Need to DO

- Post the lists of reportable diseases in your practice on pages 30 and 31. Available at: [publichealth.lacounty.gov/vet/docs/AnimalReportList2013.pdf](http://publichealth.lacounty.gov/vet/docs/AnimalReportList2013.pdf).
- Respond to a demand from VPH for a full report on a disease, if requested.
- Familiarize yourself with the disease reporting forms. Available at: [publichealth.lacounty.gov/vet/Forms.htm](http://publichealth.lacounty.gov/vet/Forms.htm).
- Call VPH if you have any questions or are seeing something unusual. Ask to speak to our Veterinarian-On-Duty at 213-989-7060, Monday through Friday, 8 AM to 5 PM.
- Report diseases. Read more about disease reporting here: <http://www.publichealth.lacounty.gov/vet/disintro.htm>





Los Angeles County Department of Public Health  
**VETERINARY PUBLIC HEALTH PROGRAM**



**REPORTING ANIMAL DISEASES/DEATHS**

Always report as soon as possible:

- Occurrence of any unusual disease
- Outbreak or cluster (3 or more cases) of animal disease/deaths of any cause
- Animal illness concurrent with human illness
- Disease not endemic to area
- Illness in animal recently imported from another country

**Urgency Reporting Requirements**

- ☎ = Report **immediately** by telephone
- ☒ = Report within **1 working day** of identification
- ⌚ = Report within **7 calendar days** from time of identification

**DISEASE PRIORITY LIST 2015**

<ul style="list-style-type: none"> <li>☒ All Diseases on the Reportable Disease List of the California Department of Food and Agriculture (CDFA)</li> <li>☒ Anaplasmosis</li> <li>☎ Anthrax</li> <li>☒ Babesiosis</li> <li>⌚ Blastomycosis</li> <li>☎ Botulism</li> <li>☒ Bovine Spongiform Encephalopathy</li> <li>☎ Brucellosis (any type)</li> <li>☎ <i>Burkholderia pseudomallei</i></li> <li>☒ Calicivirus, feline virulent</li> <li>⌚ Campylobacteriosis</li> <li>⌚ Chagas Disease</li> <li>☒ Chronic Wasting Disease</li> <li>⌚ Coccidioidomycosis</li> <li>☎ Contamination of food product-suspected</li> <li>⌚ Cryptococcosis</li> <li>⌚ Distemper</li> <li>☒ Domoic Acid Poisoning</li> <li>⌚ Ehrlichiosis</li> <li>☎ Exotic Newcastle Disease</li> <li>☎ Foot-and-Mouth Disease</li> <li>⌚ Giardia</li> <li>☎ Glanders</li> <li>⌚ Heartworm</li> </ul>	<ul style="list-style-type: none"> <li>⌚ Hemorrhagic gastroenteritis (HGE) of dogs</li> <li>☎ Hemorrhagic Fevers, viral (Crimean-Congo, Ebola, Lassa, Marburg)</li> <li>⌚ Histoplasmosis</li> <li>☒ Influenza (any type)</li> <li>⌚ Leptospirosis</li> <li>☒ Listeriosis</li> <li>⌚ Lyme Disease</li> <li>☒ Methicillin-resistant <i>Staphylococcus</i> spp</li> <li>☒ Mycobacterium spp</li> <li>⌚ <i>Onchocerca lupi</i></li> <li>⌚ Parvovirus</li> <li>⌚ Panleukopenia</li> <li>☎ Plague</li> <li>☒ Psittacosis</li> <li>☒ Pseudorabies</li> <li>☎ Q Fever</li> <li>☎ Rabies</li> <li>⌚ Rocky Mountain Spotted Fever</li> <li>☒ Salmonellosis</li> <li>⌚ Salmon Poisoning Disease</li> <li>☎ Screw worm myiasis</li> <li>☒ <i>Streptococcus equi</i> (Strangles)</li> <li>⌚ Tetanus</li> <li>☎ Tularemia</li> </ul>	<ul style="list-style-type: none"> <li>☎ Viral Encephalitis (EEE, WEE, VEE, Japanese Enceph)</li> <li>☒ West Nile Virus</li> <li>☒ Yersiniosis</li> <li>☎ Unusual disease</li> <li>☎ Outbreak of any disease</li> </ul> <p>In Los Angeles County, report all diseases in this list <b>and the list of the California Department of Food and Agriculture (CDFA)</b> to the Los Angeles County Veterinary Public Health office.</p> <p>We will forward reports to the CDFA as needed.</p>
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NOTE: Ringworm and roundworm are not reportable

Reporting Forms: <http://www.publichealth.lacounty.gov/vet/Forms.htm>

Phone: (213) 989-7060 Email: [vet@ph.lacounty.gov](mailto:vet@ph.lacounty.gov) Fax: (213) 481-2375.



**LIST OF REPORTABLE CONDITIONS FOR ANIMALS AND ANIMAL PRODUCTS\***

\*Pursuant to Section 9101 of the California Food and Agricultural Code, Title 3 California Code of Regulations § 797 and Title 9 Code of Federal Regulations Section 161.4(f)

<p><b>WHO MUST REPORT:</b> Any licensed veterinarian, any person operating a diagnostic laboratory, or any person who has been informed, recognizes or should recognize by virtue of education, experience, or occupation, that any animal or animal product is or may be affected by, or has been exposed to, or may be transmitting or carrying any of the following conditions, must report that information.</p> <p><b>WHAT TO REPORT:</b> Immediately report any animal disease not known to exist in the United States, any event with increased mortality and/or morbidity of unknown cause or source and any toxicology condition likely to contaminate animals or animal products (meat, milk or eggs). Report any emergency condition or regulatory condition. All monitored diseases should be reported by diagnostic facilities.</p>		
<p><b>CALL IF YOU SEE:</b> Vesicles, Unusual or Unexplained Illness, CNS Signs, Mucosal Diseases, Hemorrhagic Septicemias, Larvae in Wounds, Uncommon Ticks, High Morbidity or Mortality. Some diseases are listed under the major species of concern; if you see compatible signs for such conditions in another species, please report!</p>		
<p><b>EMERGENCY CONDITIONS</b> Report within 24 Hours of Discovery</p>	<p><b>REGULATORY CONDITIONS</b> Report within Two Days of Discovery</p>	<p><b>MONITORED CONDITIONS</b> Report within 30 Days of Discovery</p>
<p><b>MULTIPLE SPECIES</b></p> <ul style="list-style-type: none"> <li>Anthrax (<i>Bacillus anthracis</i>)<sup>1</sup></li> <li>Crimean Congo Haemorrhagic Fever<sup>1</sup></li> <li>Foot-and-Mouth Disease</li> <li>Heartwater (<i>Ehrlichia ruminantium</i>)</li> <li>Japanese Encephalitis</li> <li>Rabies of livestock<sup>1</sup></li> <li>Rift Valley Fever</li> <li>Screwworm Myiasis (<i>Cochliomyia hominivorax</i> or <i>Chrysomya bezziana</i>)</li> <li>Surra (<i>Trypanosoma evansi</i>)</li> <li>Vesicular Stomatitis</li> <li>Livestock exposed to toxic substances</li> <li>Unexplained high mortality or diseased animals</li> </ul> <p><b>BOVINE</b></p> <ul style="list-style-type: none"> <li>African Trypanosomiasis (Tsetse fly diseases)</li> <li>Bovine Babesiosis (Cattle Tick Fever)</li> <li>Bovine Spongiform Encephalopathy</li> <li>Contagious Bovine Pleuropneumonia (<i>Mycoplasma mycoides mycoides</i> small colony)</li> <li>Foot-and-Mouth Disease</li> <li>Hemorrhagic Septicemia (<i>Pasteurella multocida</i> B/Asian or E/African)</li> <li>Lumpy Skin Disease</li> <li>Malignant Catarrhal Fever (African type)</li> <li>Rinderpest</li> <li>Schmallenberg Virus/ Akabane</li> <li>Theileriosis (<i>Theileria parva parva</i> or <i>T. annulata</i>)</li> </ul> <p><b>CAPRINE/OVINE</b></p> <ul style="list-style-type: none"> <li>Contagious Agalactia (<i>Mycoplasma agalactiae</i>)</li> <li>Contagious Caprine Pleuropneumonia (<i>Mycoplasma capricolum capripneumoniae</i>)</li> <li>Foot-and-Mouth Disease</li> <li>Nairobi Sheep Disease</li> <li>Peste des Petits Ruminants (Goat Plague)</li> <li>Schmallenberg Virus/ Akabane</li> <li>Sheep and Goat Pox</li> </ul> <p><b>PORCINE</b></p> <ul style="list-style-type: none"> <li>African Swine Fever</li> <li>Classical Swine Fever</li> <li>Foot-and-Mouth Disease</li> <li>Japanese Encephalitis</li> <li>Nipah Virus</li> <li>Senecavirus A</li> <li>Swine Vesicular Disease</li> <li>Vesicular Exanthema of Swine Virus (VESV)</li> </ul> <p><b>AVIAN SPECIES</b></p> <ul style="list-style-type: none"> <li>Avian Influenza (H5 or H7)</li> <li>Exotic Newcastle Disease</li> <li>Turkey Rhinotracheitis (Avian Metapneumovirus)</li> </ul> <p><b>EQUINE</b></p> <ul style="list-style-type: none"> <li>African Horse Sickness</li> <li>Dourine (<i>Trypanosoma equiperdum</i>)</li> <li>Glanders (Farcy) (<i>Burkholderia mallei</i>)</li> <li>Hendra Virus (Equine morbillivirus)</li> <li>Japanese Encephalitis</li> <li>Melioidosis (<i>Burkholderia pseudomallei</i>)</li> <li>Venezuelan Equine Encephalomyelitis</li> <li>Vesicular Stomatitis</li> </ul> <p><b>CERVIDS/LAGOMORPHS/CAMELIDS</b></p> <ul style="list-style-type: none"> <li>Viral Hemorrhagic Disease of Rabbits (Calicivirus)</li> </ul>	<p><b>MULTIPLE SPECIES</b></p> <ul style="list-style-type: none"> <li>Brucellosis (<i>B. melitensis</i>, <i>B. abortus</i>, <i>B. suis</i>)<sup>1</sup></li> <li>Tuberculosis (<i>Mycobacterium bovis</i>)<sup>1</sup></li> <li>Pseudorabies (Aujeszky's Disease)</li> <li>Tularemia<sup>1</sup></li> </ul> <p><b>BOVINE</b></p> <ul style="list-style-type: none"> <li>Bovine Brucellosis (<i>Brucella abortus</i>)<sup>1</sup></li> <li>Bovine Tuberculosis (<i>Mycobacterium bovis</i>)<sup>1</sup></li> <li>Trichomonosis (<i>Trichomonas fetus</i>)</li> </ul> <p><b>CAPRINE/OVINE</b></p> <ul style="list-style-type: none"> <li>Caprine and Ovine Brucellosis<sup>1</sup> (excluding <i>Brucella ovis</i>)</li> <li>Scrapie</li> <li>Sheep Scabies (Body Mange) (<i>Psoroptes ovis</i>)</li> </ul> <p><b>PORCINE</b></p> <ul style="list-style-type: none"> <li>Porcine Brucellosis (<i>Brucella suis</i>)<sup>1</sup></li> <li>Pseudorabies (Aujeszky's Disease)</li> <li>Swine Enteric Coronavirus Diseases, excluding Transmissible Gastroenteritis</li> </ul> <p><b>AVIAN SPECIES</b></p> <ul style="list-style-type: none"> <li>Ornithosis (Psittacosis or avian chlamydiosis) (<i>Chlamydia psittaci</i>)</li> <li>Pullorum Disease (Fowl Typhoid) (<i>Salmonella gallinarum</i> and <i>S. pullorum</i>)</li> </ul> <p><b>EQUINE</b></p> <ul style="list-style-type: none"> <li>Contagious Equine Metritis (<i>Taylorella equigenitalis</i>)</li> <li>Eastern Equine Encephalomyelitis</li> <li>Equine Herpesvirus Myeloencephalopathy (EHM)</li> <li>Equine Infectious Anemia</li> <li>Epizootic Lymphangitis</li> <li>Equine Piroplasmosis (<i>Babesia caballi</i> or <i>Theileria equi</i>)</li> <li>Western Equine Encephalomyelitis</li> <li>West Nile Virus</li> </ul> <p><b>CERVIDS/LAGOMORPHS/CAMELIDS</b></p> <ul style="list-style-type: none"> <li>Chronic Wasting Disease in Cervids</li> </ul>	<p><b>MULTIPLE SPECIES</b></p> <ul style="list-style-type: none"> <li>Bluetongue</li> <li>Echinococcosis/Hydatidosis (<i>Echinococcus</i> species)</li> <li>Hemorrhagic Diseases (Bluetongue, Adenovirus, and Epizootic Hemorrhagic disease)</li> <li>Influenza</li> <li>Johne's Disease (Paratuberculosis) (<i>Mycobacterium avium paratuberculosis</i>)</li> <li>Leishmaniasis</li> <li>Q Fever (<i>Coxiella burnetii</i>)</li> </ul> <p><b>BOVINE</b></p> <ul style="list-style-type: none"> <li>Anaplasmosis (<i>Anaplasma marginale</i> or <i>A. centrale</i>)</li> <li>Bovine Genital Campylobacteriosis (<i>Campylobacter fetus venerealis</i>)</li> <li>Bovine Viral Diarrhea</li> <li>Enzootic Bovine Leukosis (Bovine leukemia virus)</li> <li>Infectious Bovine Rhinotracheitis (Bovine herpesvirus-1)</li> <li>Malignant Catarrhal Fever (North American)</li> <li>Bovine Cysticercosis (<i>Taenia saginata</i>)</li> </ul> <p><b>CAPRINE/OVINE</b></p> <ul style="list-style-type: none"> <li><i>Brucella ovis</i> (Ovine epididymitis)</li> <li>Caprine Arthritis/Encephalitis</li> <li>Enzootic abortion of ewes (Ovine chlamydiosis) (<i>Chlamydia abortus</i>)</li> <li>Maedi-Visna (Ovine progressive pneumonia)</li> <li><i>Salmonella abortusovis</i></li> </ul> <p><b>PORCINE</b></p> <ul style="list-style-type: none"> <li>Porcine Cysticercosis (<i>Taenia solium</i>)</li> <li>Porcine Reproductive and Respiratory Syndrome</li> <li>Swine Erysipelas (<i>Erysipelothrix rhusiopathiae</i>)</li> <li>Transmissible Gastroenteritis (Coronavirus)</li> <li>Trichinellosis (<i>Trichinella spiralis</i>)</li> </ul> <p><b>AVIAN SPECIES</b></p> <ul style="list-style-type: none"> <li>Avian Infectious Bronchitis</li> <li>Avian Infectious Laryngotracheitis</li> <li>Duck Viral Hepatitis</li> <li>Infectious Bursal Disease (Gumboro Disease)</li> <li>Mycoplasmosis (<i>Mycoplasma synoviae</i> and <i>Mycoplasma gallisepticum</i>)</li> </ul> <p><b>EQUINE</b></p> <ul style="list-style-type: none"> <li>Equine Rhinopneumonitis (excluding EHM)</li> <li>Equine Viral Arteritis</li> </ul> <p><b>CERVIDS/LAGOMORPHS/CAMELIDS</b></p> <ul style="list-style-type: none"> <li>Camelpox in camels</li> <li>Myxomatosis in rabbits</li> </ul> <p><b>FISH, AMPHIBIAN, CRUSTACEAN, BEE, AND MOLLUSK</b></p> <ul style="list-style-type: none"> <li>The list is compatible with the OIE list. <a href="http://www.oie.int/en/animal-health-in-the-world/oie-listed-diseases-2015/">http://www.oie.int/en/animal-health-in-the-world/oie-listed-diseases-2015/</a></li> </ul>
<p><b>WHERE TO REPORT:</b></p> <p>CA Department of Food and Agriculture Animal Health Branch (AHB) District Offices:</p> <p>Redding 530-225-2140 Modesto 209-491-9350 Tulare 559-685-3500 Ontario 909-947-4462</p> <p>CDFA- Animal Health Branch Mailing Address: 1220 N Street Sacramento, CA 95814 Physical Address: 2800 Gateway Oaks Sacramento, CA 95833 Telephone 916-900-5002 OR US Department of Agriculture Animal and Plant Health Inspection Services Veterinary Services (VS) 10365 Old Placerville Road, Suite 210 Sacramento, CA 95827-2518 Toll free at 1-877-741-3690</p>		

<sup>1</sup> Diseases in green, seen in any species, are also reportable to California Department of Public Health

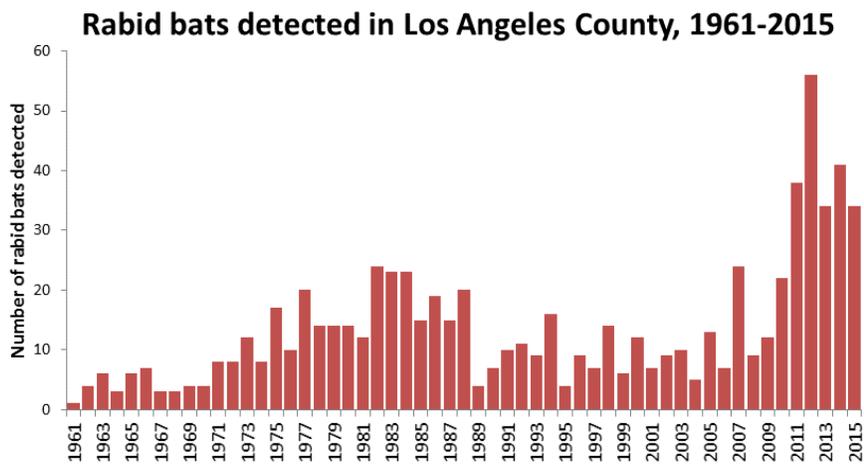
# Rabies Data, Los Angeles County

## Background

Rabies is prevalent in bats in the United States. Throughout California, many other wildlife species have tested positive for rabies in recent years and are considered potential sources of the virus. In 2014, a skunk tested positive for rabies in the city of Long Beach – the skunk was found to have been infected with a Mexican free-tailed bat variant of rabies.

## What You Need to KNOW

- **Rabies surveillance in local bats.** Bats are tested for rabies only after they are reported to be acting abnormally (e.g. weak, sitting in one place for a long time, flying in daylight), or when they are found near people or pets.
- **The number of rabid bats detected is increasing.** Throughout the 1990s and first decade of the 2000s, an average of 9-10 bats tested positive for rabies per year in LA County. Since 2010, that number has risen to 37 per year. The cause of the increase is unknown. One hypothesis is that the drought is causing bats to move closer to areas irrigated by people in order to find insects to eat.



- **Clustering of rabid bats in Santa Clarita.** In 2015, more than half of the rabid bats were found in the city of Santa Clarita (see p.33). It is unknown if there is actually a higher incidence of rabid bats there, or if the residents are more likely to submit bats for rabies testing.
- **Rabid bats can be found in densely populated areas.** Most rabid bats are found in suburban areas, and occasionally in highly urban areas.
- **Most rabid bats are found at private homes.** In 2015, 68% of rabid bats were found at private homes, most in the yard or side of the house.
- **Rabid bats are found indoors.** Even pets that do not go outside can be exposed to rabies. In 2015, one rabid bat was clinging to the underside of a table and bit a person who sat at that table.

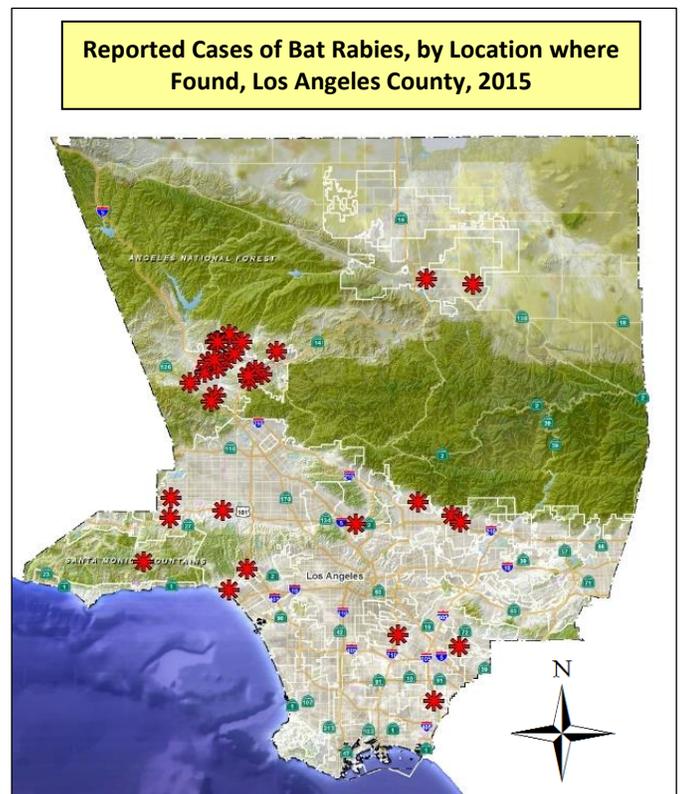


In another case, a rabid bat flew inside a pet grooming business, but was noticed and contained before any animals contact.

- **Bats have tiny teeth.** Bat bites to pets, children or sleeping people may go unnoticed.
- **Imported pets can bring rabies into LA County.** In 2004, a rabid dog was imported through LAX from Thailand, and in 1987 a rabid cat was brought here from Mexico. Hundreds of dogs are imported into our county every year, with many being from countries where the canine rabies variant is still found (see page 25).

## What You Need to DO

- **Vaccinate pets, including indoor cats.** Indoor cats can easily be attracted to a bat in a home and be bitten by it. Virtually every year, at least one confirmed rabid bat is found inside a home in LA County.
- **Educate your clients.** If they find a bat in their home, they should NOT touch it with bare hands. They should cover it with a bucket if possible and call animal control to have it tested for rabies. If a bat is found in a room where someone was sleeping, or near a pet, there is no way to know if that person or pet was bitten. To read more about what to do if a bat is found in the home, visit: [publichealth.lacounty.gov/vet/batinhouse.htm](http://publichealth.lacounty.gov/vet/batinhouse.htm).
- **Make sure you ask your clients if their pet was recently imported.** While rabies is not likely to be found in local dogs, the risk of rabies may be higher in imported dogs. Be suspicious of rabies if you are seeing a sick dog coming from other countries, especially from places where canine rabies is common.



For more information: [publichealth.lacounty.gov/vet/rabies.htm](http://publichealth.lacounty.gov/vet/rabies.htm).



# Heartworm Data, Los Angeles County

## Background

Every year, heartworm disease is diagnosed in pets by veterinarians in LA County. While the majority of cases are infected while outside of Southern California, about a third are infected locally. In 2014, heartworm became reportable in LA County by animal diagnostic laboratories, leading to a dramatic increase in the amount of available data that year. Cases are categorized as “confirmed”, “probable”, or “suspected” by following LA County’s case definition for heartworm disease, available at: [publichealth.lacounty.gov/vet/surveillance.htm](http://publichealth.lacounty.gov/vet/surveillance.htm).



Since 2011, two new invasive mosquito species became established in certain areas of LA County: the Asian tiger mosquito (*Aedes albopictus*) and the Yellow Fever mosquito (*Aedes aegypti*). Both are drought-resistant, daytime biters, and capable vectors for Zika, Dengue and Chikungunya viruses in humans, and heartworm in animals. A third invasive mosquito, the Australian backyard mosquito (*Aedes notoscriptus*) has also been found in LA County – this species is an ideal vector for heartworm. More than ever, veterinarians need to include mosquito control as a core part of their heartworm prevention information for pet owners.

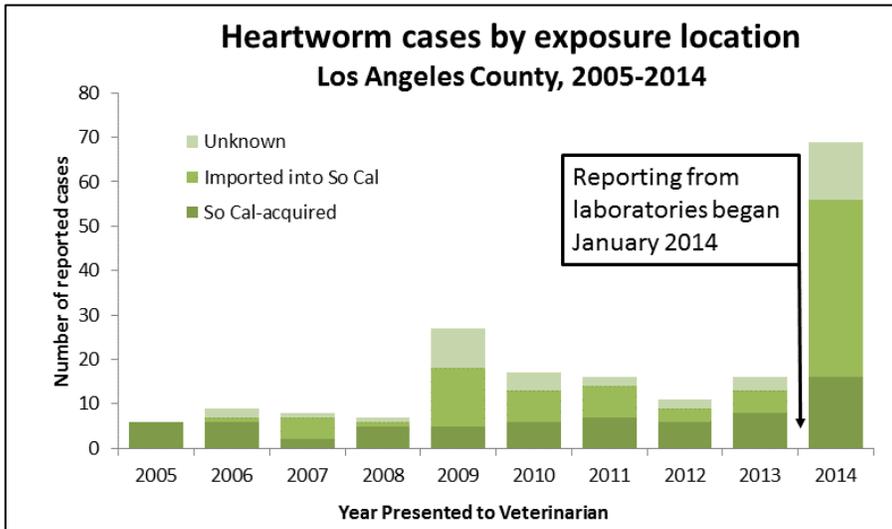
## What You Need to KNOW

- **Heartworm is transmitted locally.** Between 2005 and 2014, a total of 187 cases were reported in 172 dogs and 15 cats. Almost a third (32%) of these cases had not traveled outside of Southern California, and therefore had been infected locally.
- **Most cases are asymptomatic.** Seventy four percent of cases had no clinical signs.
- **Multiple species of local mosquitoes can transmit heartworm.** Since 2011, the arrival of three new species of invasive mosquitoes may have increased the risk of local transmission further.
- **Untreated animals are reservoirs.** Coyotes and completely untreated dogs (15% of cases reported) can maintain heartworm in the local mosquito population.

## What You Need to DO

- **Teach pet owners to fight against mosquito breeding in stagnant water.**
  - Tell clients to remove standing water 1-2 times weekly. Even a bottle cap full of water can breed mosquitoes. Stagnant water forms due to rain, sprinklers, and condensation from fog.
  - Large bodies of stagnant water, such as neglected swimming pools, should be reported to the local vector control agency.
- **Use heartworm preventatives.** Most of these medications have the added benefit of preventing zoonotic intestinal parasites.

- **Test for heartworm.** Include heartworm testing as part of a pet’s yearly physical checkup.
- **Report cases.** Heartworm reporting form: [publichealth.lacounty.gov/vet/docs/Forms/HeartwormReportForm.pdf](http://publichealth.lacounty.gov/vet/docs/Forms/HeartwormReportForm.pdf).

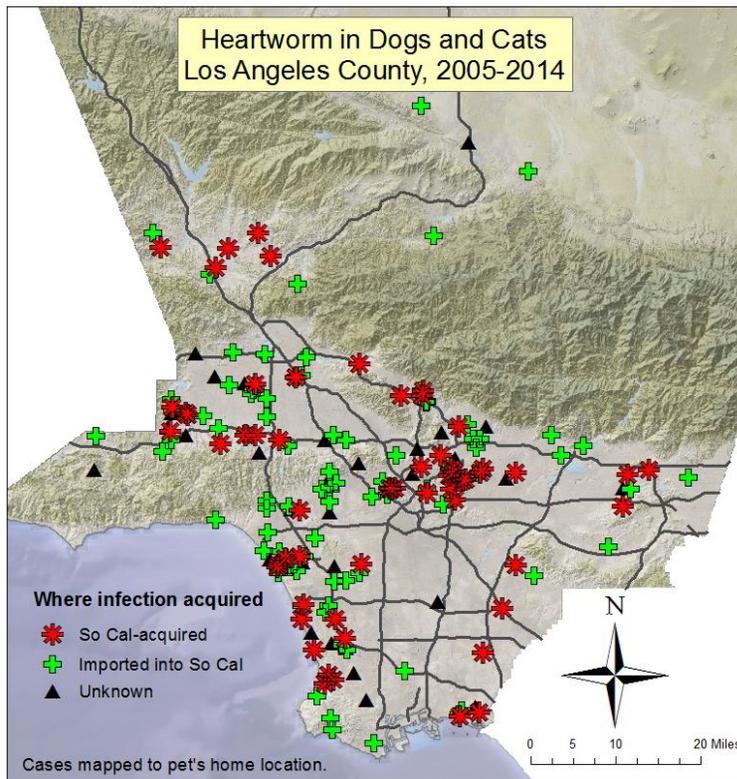


**Case Categories**

**So Cal-acquired** – Pet did not travel outside of Southern California

**Imported into So Cal** – Pet traveled outside of Southern California and likely contracted the infection outside of area

**Unknown** – Not enough history available about pet



Mosquitoes breed in standing water. Even tiny crevices that hold water, such as holes in trees, can breed mosquitoes.

**Teach your clients to locate and empty any standing water on their property 1-2 times weekly.**

For more information: [publichealth.lacounty.gov/vet/heartworm.htm](http://publichealth.lacounty.gov/vet/heartworm.htm).



# Leptospirosis Data, Los Angeles County

## Background

Leptospirosis (lepto) is caused by a water-loving bacteria called *Leptospira*. It can cause illness in humans and dogs. Common wildlife such as raccoons, skunks, opossums and rats can carry lepto in their urine. Raccoons may contaminate pet water bowls, water fountains, or ponds when exploring back yards. People and pets may be exposed to lepto when contaminated urine from animals is in contact with the eyes, nose, mouth or broken skin.



In 2014, lepto became reportable by animal diagnostic laboratories, leading to an increase in the amount of available data. Cases are categorized as “confirmed”, “probable”, or “suspected” by following LA County’s case definition for leptospirosis available at: [publichealth.lacounty.gov/vet/surveillance.htm](http://publichealth.lacounty.gov/vet/surveillance.htm).

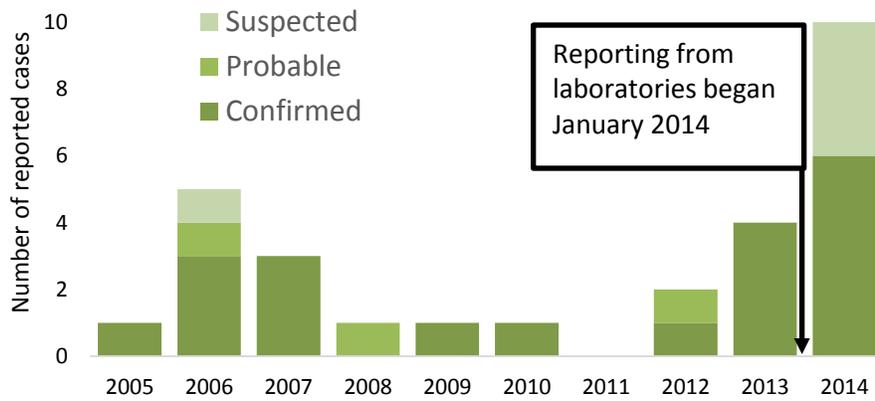
## What You Need to KNOW

- **Lepto is present in LA County.** 28 cases of lepto in dogs were reported between 2005 and 2014.
- **Lepto may be underdiagnosed.** Veterinarians who are not aware that lepto is present locally might not order testing for the disease. The cost of lepto testing may also present a barrier for clients.
- **Most dogs became infected in their own yards.** In several cases, infected dogs rarely left their own neighborhoods, but had direct or indirect encounters with wildlife. In some cases, raccoons were seen putting their front paws in dogs’ water bowls in some cases.

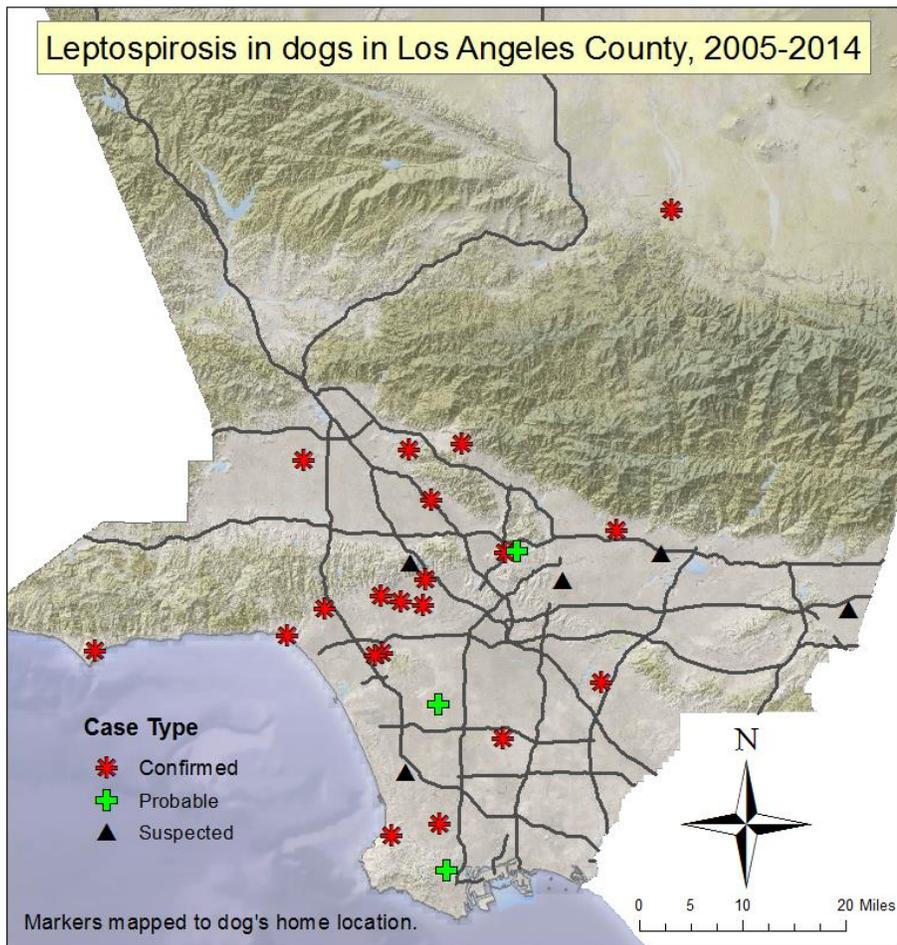
## What You Need to DO

- **Consider lepto vaccination.** Approximately 75% of the reported cases in LA County were unvaccinated against lepto. The other 25% had been vaccinated with a 2-way vaccine. Therefore, the 4-way leptospirosis vaccine should be used instead of the 2-way vaccine.
- **Teach clients to avoid attracting wildlife into their yards.** Clients should keep pet food and water bowls inside the house. Bowls should be routinely cleaned with hot water and soap in case they have been contaminated by wildlife.

## Leptospirosis in Dogs Los Angeles County, 2005-2014



### Leptospirosis in dogs in Los Angeles County, 2005-2014



For more information: <http://publichealth.lacounty.gov/vet/Leptospirosis.htm>.



# Parvo Data, Los Angeles County

## Background

Canine parvovirus is not zoonotic, however, tracking parvo cases is a public health concern. Effective vaccination against canine parvovirus has been a standard part of veterinary preventative care for decades. Therefore, parvo cases serve as a marker for areas in LA County where residents have lower access to, or utilization of, basic veterinary care. Veterinary care includes a combination of preventative services, treatments and education for pet owners that help prevent zoonotic infections of many types. People in areas with less veterinary access face higher risk of exposure to undiagnosed or untreated zoonotic diseases as a result.



## What You Need to KNOW

- **Parvo data highlights areas where veterinary care and education are needed most.** Cases of parvo cluster in areas where there are fewer veterinary practices, and where median household incomes are lower.
- **Parvo is seasonal.** Increases are seen in spring and fall.
- **Education of dog owners can make a difference.** A survey done by VPH at vaccine clinics throughout the county found that 82% of dog owners did not know that a puppy needs 3-4 shots in order to be protected from parvo.

## What You Need to DO

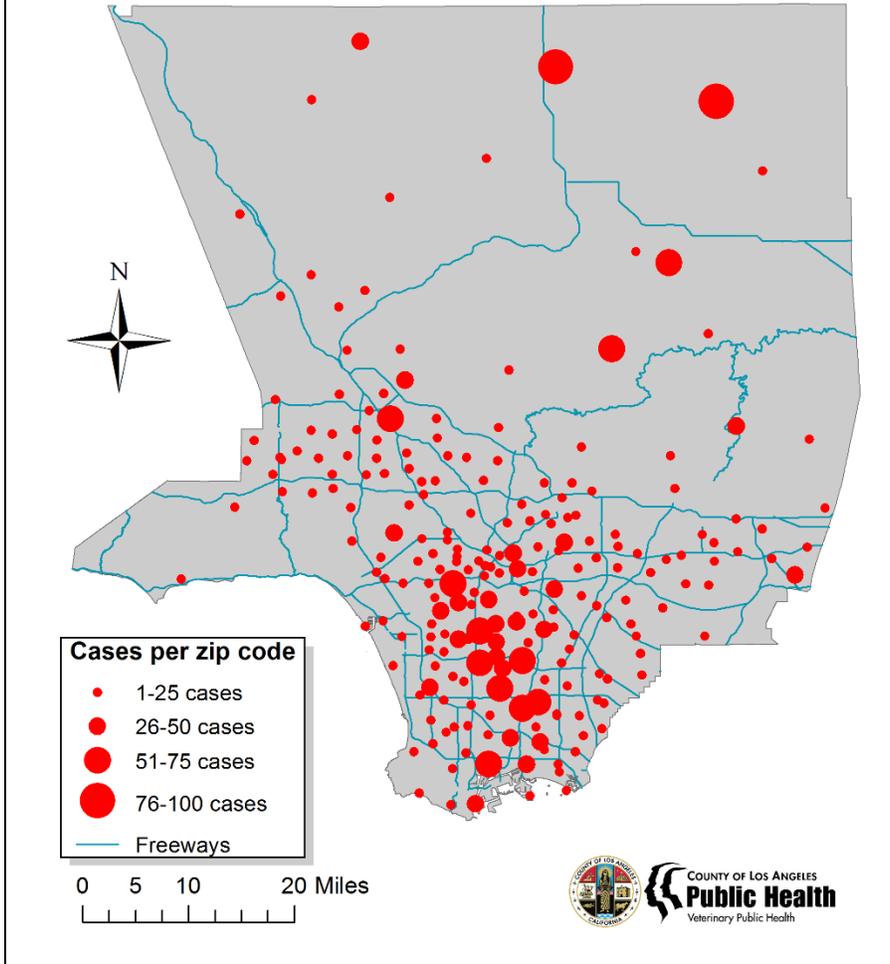
- **Educate pet owners about the disease and the vaccination series.** Veterinary practices, animal shelters, and non-profit groups are encouraged to make education of pet owners a top priority.
- **Promote other preventive care during parvo vaccination.** Behavioral training, vaccination against rabies, deworming, and flea control all help protect the pet owner as well as the pet.
- **Report cases of parvo to us.** Use the Parvo Tracking Sheet (see page 43 for link to reporting forms). Every report is a “vote” for educational and outreach opportunities to focus on the zip code where the dog came from.

For more information: [publichealth.lacounty.gov/vet/parvo.htm](http://publichealth.lacounty.gov/vet/parvo.htm).

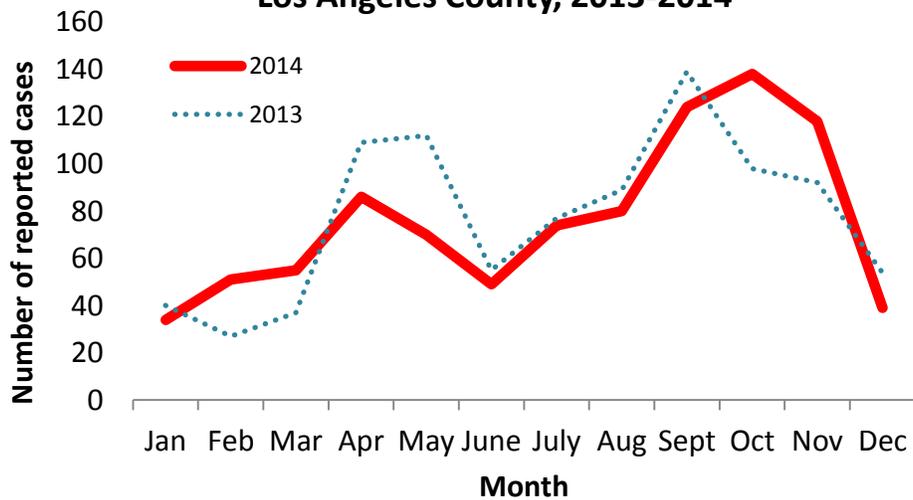


# Canine Parvovirus

Los Angeles County 2008-2014



## Seasonality of Canine Parvovirus Los Angeles County, 2013-2014



# Flea-borne typhus Data, Los Angeles County

## Background

Flea-borne typhus is a disease transmitted through flea bites from animals to people. It is also known as murine typhus or endemic typhus. Flea-borne typhus is endemic in Southern California, Southern Texas, and Hawaii. Cases have been increasing in number and spreading to new areas in Southern California since 2010. It is caused by bacteria called *Rickettsia typhi* and *Rickettsia felis*.



An **urban cycle** of flea-borne typhus, involving rats and rat fleas, is present in downtown Los Angeles. Elsewhere in LA County the disease is transmitted within the **suburban cycle**, involving cats, opossums, other animals, and the cat flea. There is evidence that fleas can pass the bacteria to their offspring, making them not only a vector, but also a reservoir for typhus.

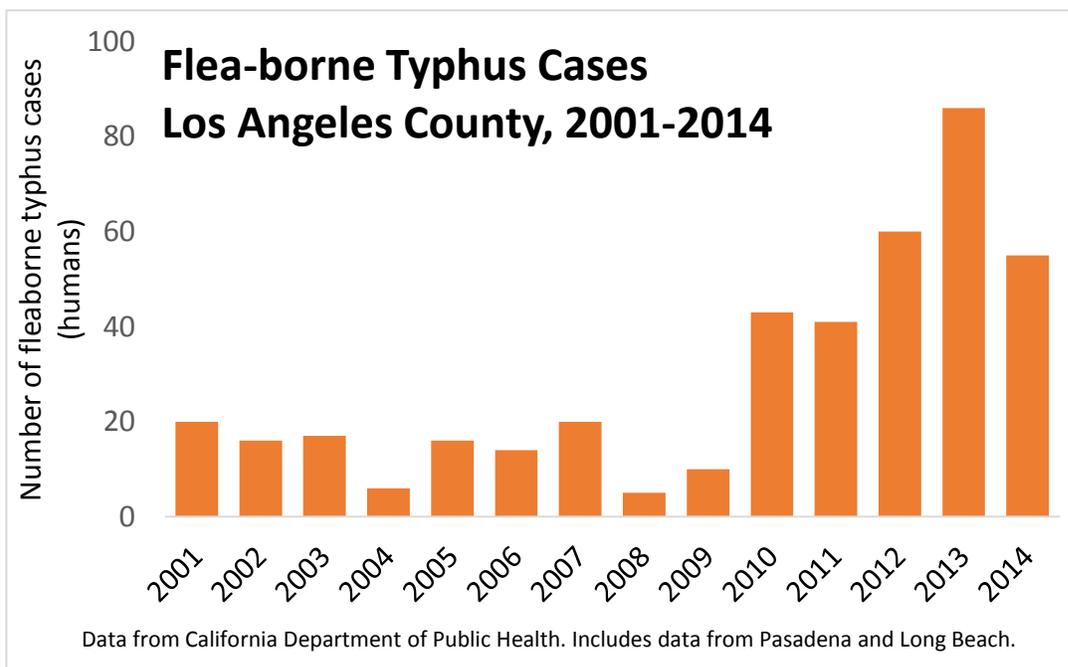
## What You Need to KNOW

- **Fleas in Southern California can spread flea-borne typhus.** Many people are unfamiliar with this disease because it is not found in most areas of the United States.
- **Animal health workers face higher risk of exposure to flea-borne typhus.** Due to their close contact with flea-infested animals, veterinary staff, wildlife rehabilitators, and animal control workers are more likely to be exposed.
- **It is spread through flea feces (“flea dirt”).** Fleas defecate while biting. People may become infected when they scratch a flea bite and drag flea feces across the bite wound, or when flea feces get into their eyes, nose, or mouth.
- **Clinical signs can be severe.** Most people who become ill develop fever, headache, chills, muscle pain, and sometimes a rash on the chest/back/legs. However, the disease can also cause meningitis. The majority of reported cases were severe, with about 80% being hospitalized.
- **Animals do not get sick from flea-borne typhus.** Animals infected with the bacteria do not show clinical signs, nor do they spread the disease directly to people. However flea-infested animals spread typhus in the community by increasing flea populations and transporting infected fleas to new areas.
- **In LA County, Public Health notifies veterinarians about cases.** In late 2015, VPH began notifying private veterinary practices by email about nearby typhus cases (either in the same zip code as the practice, or in an adjacent zip code), in order to heighten awareness of the importance of flea control.



## What You Need to DO

- **Promote flea control in pets.** Proper flea control requires more than just using chemical flea control products. Flea eggs should be frequently removed from the home by vacuuming and laundering pet bedding. Attracting feral and wild animals in the yard should be minimized by: trimming vegetation, sealing crawl spaces, keeping trash sealed, picking up fallen fruit from trees and keeping pet food indoors.
- **Protect yourself from fleas and flea feces.** Make sure you and your staff use gloves when dealing with patients with flea infestations, and practice good hand washing habits.
- **Never relocate flea-infested wild or feral animals.** Moving fleas spreads this disease.



For more information: [publichealth.lacounty.gov/acd/vectortyphus.htm](http://publichealth.lacounty.gov/acd/vectortyphus.htm).





# APPENDIX 1

## Reporting Forms for Veterinary Clinics

Please visit our website for reporting forms on specific diseases and conditions at:  
[publichealth.lacounty.gov/vet/Forms.htm](http://publichealth.lacounty.gov/vet/Forms.htm).

[List of Reportable Animal Diseases, LA County, 2013](#)  
[Veterinary Public Health Reporting Guide, 2013](#)

### Bite and Rabies Reporting Forms

[Suspected Rabid Animal - instructions and form](#)  
[Animal-Bite-To-Human Report Form](#)  
[Wild Mammal vs. Domestic Incident Report Form](#)  
[Bat Submission Form](#)  
[Rabies specimen submission procedures](#)  
[All Bite and Rabies Reporting Forms](#) (4 pages)

### Animal Disease Reporting Forms

[Animal Disease Report Form](#) (general purpose)  
[Brucellosis](#)  
[Coccidioidomycosis](#)  
[Heartworm](#)  
[Hemorrhagic Gastroenteritis](#)  
[Imported Animal Illness](#)  
[Influenza](#)  
[Leptospirosis](#)  
[MRSA/MRSS/MRSP](#)  
[Parvo](#) (also see Vaccine Preventable Disease)  
[Psittacosis, avian](#)  
[Tick-borne Disease](#)  
[Vaccine Preventable Disease](#)  
[All Animal Disease Reporting Forms](#) (13 pages)





**VETERINARY PUBLIC HEALTH-RABIES CONTROL PROGRAM**  
 Tel. (213) 989-7060 Email: [vet@ph.lacounty.gov](mailto:vet@ph.lacounty.gov)  
[publichealth.lacounty.gov/vet](http://publichealth.lacounty.gov/vet)



## Animal Disease/Death Reporting Form

(if the disease you are reporting has a specific form, ideally use that form instead)

Date form completed \_\_\_\_\_

SUSPECTED DISEASE/CONDITION BEING REPORTED: \_\_\_\_\_

### 1. Animal Information

Type of animal involved:  Domestic Pet  Livestock  Wild animal  
 Exotic  Zoo animal  
 Number of animals:  One  Multiple (give number \_\_\_\_\_)  
 Species of Animal \_\_\_\_\_  
 Other Identifying Information:  
 Breed \_\_\_\_\_ Color \_\_\_\_\_  
 Sex \_\_\_\_\_ Name \_\_\_\_\_  
 Age \_\_\_\_\_ IMPOUND # \_\_\_\_\_

### 2. Animal Owner (if applicable)

Name(s) \_\_\_\_\_  
 Address \_\_\_\_\_  
 City, ZIP \_\_\_\_\_  
 Telephone: \_\_\_\_\_  
 Is it okay for Public Health to call the owner(s) to ask more about the history?  YES  NO

### 3. Animal Location (where in community animal originated, if not same as owner)

Name(s) \_\_\_\_\_  
 Address \_\_\_\_\_  
 City, ZIP \_\_\_\_\_

### 4. Reporting Veterinary Clinic or Shelter

Name of veterinarian or technician: \_\_\_\_\_  
 Vet Clinic Name: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 City, ZIP: \_\_\_\_\_  
 Telephone \_\_\_\_\_ Fax \_\_\_\_\_ E-mail: \_\_\_\_\_

### 5. History

Date of onset of first symptoms \_\_\_\_\_ Date of presentation \_\_\_\_\_  
 Date of death(s), if applicable \_\_\_\_\_  
 History (include vaccine history, if applicable): \_\_\_\_\_



**6. Clinical Findings**

Highest body temperature measured \_\_\_\_\_

Physical Examination

	<b>Normal</b>	<b>Comments</b>
General:	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____
Skin:	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____
Head Area:	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____
Respiratory:	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____
Cardiovascular:	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____
Abdomen/digestive:	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____
Urogenital:	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____
Musculoskeletal:	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____
Nervous:	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____
Lymph nodes:	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____
Other:	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____

**7. Treatment.** Please describe treatment given, particularly antibacterial, antiviral, antifungal, antiparasitic.

Treatment Date	Describe Treatment
1. _____	_____
2. _____	_____
3. _____	_____

**8. Laboratory results** Please fax all laboratory results to us along with this form.

**9. Additional comments.** Please use an additional sheet if needed.



**VETERINARY PUBLIC HEALTH-RABIES CONTROL PROGRAM**  
 TEL: (213)-989-7060 or (877) 747-2243 FAX: (213) 481-2375  
[publichealth.lacounty.gov/vet](http://publichealth.lacounty.gov/vet)



**BITE REPORTING FORM - VETERINARY CLINICS**

Use this form to report animals suspected of being rabid, even if no bite occurred. If there was no bite, write "None" in the PERSON BITTEN section.



PERSON BITTEN			
Victim name (last and first)		Date of Birth	Address (number, street, city and zip)
Victim phone number		Reported by:	Reporter phone number
Date bitten	Time bitten	Address where bitten (if no address make sure to put city and zip code)	Body location bitten
How bite occurred (explain)			
Date Treated	Hospitalized <input type="checkbox"/> Yes <input type="checkbox"/> No	Treated by	Phone number
Type of treatment			
ANIMAL			
Owner Name (last and first)		Address (number, street city and zip)	
Phone Number	Type of animal <input type="checkbox"/> Dog Breed _____ <input type="checkbox"/> Cat Breed _____ <input type="checkbox"/> Other _____	Description of animal (sex, color)	
Animal vaccinated for rabies? <input type="checkbox"/> Yes <input type="checkbox"/> No	Date last vaccinated:	Animal sterilized? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Was animal euthanized? <input type="checkbox"/> YES <input type="checkbox"/> NO Date _____	Reason euthanized: <input type="checkbox"/> Injured <input type="checkbox"/> Sick <input type="checkbox"/> other Please explain:	Specimen prepared for rabies testing? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable	
CLINIC			
Clinic Information			Contact person
Name:			
Address (include number, street, city, state and zip)			Phone Number
Remarks			
Submit a copy of the animal's rabies certificate, if available			
Date	Time	Faxed: <input type="checkbox"/> yes <input type="checkbox"/> No	Initials

Form (H-1561) Vet

5/2013

2013





# VETERINARY PUBLIC HEALTH – RABIES CONTROL PROGRAM

Tel. (213) 987-7060 Email: [vet@ph.lacounty.gov](mailto:vet@ph.lacounty.gov) Fax: (213) 481-2375

[publichealth.lacounty.gov/vet](http://publichealth.lacounty.gov/vet)



COUNTY OF LOS ANGELES  
**Public Health**

## DOMESTIC ANIMAL vs. WILD MAMMAL INCIDENT REPORT FORM

DOMESTIC ANIMAL – PET INFORMATION				
Owner last name		Owner first name		Owner address. Number and street City and zip code
Owner area code & phone		Species <input type="checkbox"/> Dog <input type="checkbox"/> Cat		Breed Sex Age
Date bitten	Time bitten	Reported by		Reporter area code & phone number
Address where bitten. Number and street		City and zip code		Type of injury to domestic animal
Animal vaccinated prior to contact with wildlife? <input type="checkbox"/> Yes <input type="checkbox"/> No		Date vaccinated prior to contact with wildlife:		Animal vaccinated after coming into contact with wildlife? <input type="checkbox"/> Yes <input type="checkbox"/> No
Date vaccinated after coming into contact with wildlife:		Domestic animal impounded? <input type="checkbox"/> Yes <input type="checkbox"/> No		Animal Shelter Impound # Was animal euthanized? <input type="checkbox"/> Yes <input type="checkbox"/> No
Was animal taken to vet? <input type="checkbox"/> Yes <input type="checkbox"/> No		Name of Veterinary Hospital		Address, city and zip
Current location of animal: <input type="checkbox"/> Home address <input type="checkbox"/> Veterinary clinic listed above <input type="checkbox"/> Other _____				
WILD LIFE INFORMATION (animals other than dog or cat)				
Type of wild animal <input type="checkbox"/> Coyote <input type="checkbox"/> Skunk <input type="checkbox"/> Raccoon <input type="checkbox"/> Bat <input type="checkbox"/> Other (explain)			Wild animal disposition: <input type="checkbox"/> Left area/not located <input type="checkbox"/> Appeared sick <input type="checkbox"/> Captured/destroyed/died	
Wild animal specimen prepared for rabies testing? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable		Location of wild animal specimen (clinic or shelter)		Date euthanized Time
Veterinary Clinic or Animal Control Agency taking report:			Impound# of wild animal (if applicable)	
Address of Veterinary Clinic or Animal Control Agency				
Comments:				
Submit a copy of the animal's rabies certificate(s), if available				
Report by:		Date taken:		Initials Faxed by: Date:



2015





**VETERINARY PUBLIC HEALTH-RABIES CONTROL PROGRAM**  
 TEL: (213)-989-7060 or (877) 747-2243 FAX: (213) 481-2375  
 publichealth.lacounty.gov/vet



**BAT SUBMISSION FORM**

**INSTRUCTION:**

- All bats submitted to animal shelters must be reported to the Health Department immediately.
- Please FAX all information to (213) 481-2375
- Fill out as much information as possible.
- DO NOT DECAPITATE specimen.
- DO NOT FREEZE specimen.

1. Bat Impound # \_\_\_\_\_ Date \_\_\_\_\_

Shelter \_\_\_\_\_ ACO \_\_\_\_\_

Phone Number \_\_\_\_\_

2. Name of person who captured bat \_\_\_\_\_

3. Name of owner/business where bat was found \_\_\_\_\_

4. Address (where found) \_\_\_\_\_

5. Phone Number of premise \_\_\_\_\_

6. Capture location of bat:  Home (circle one: INDOORS or OUTDOORS)  Garage  
 Business (circle one: INDOORS or OUTDOORS)  
 Public place (circle one: INDOORS or OUTDOORS)  
 Other

7. Time of capture or pickup \_\_\_\_\_

8. Method used to capture bat \_\_\_\_\_

9. State of bat when captured (check one)  Live or  Dead

10. Did any people or animals have potential physical contact with bat?  Yes  No

Explain:

Names:	Addresses:	Phone:
_____	_____	_____
_____	_____	_____
_____	_____	_____



**VETERINARIANS:**

**Please contact the Veterinary Public Health Program (VPH) for copies of the Rabies Vaccine Exemption forms.**

**Forms are also available in the physical binder delivered to your clinic**

**(delivery time July – December 2016)**

Phone: 213-989-7060

Fax: 213-481-2375

Email: [vet@ph.lacounty.gov](mailto:vet@ph.lacounty.gov)



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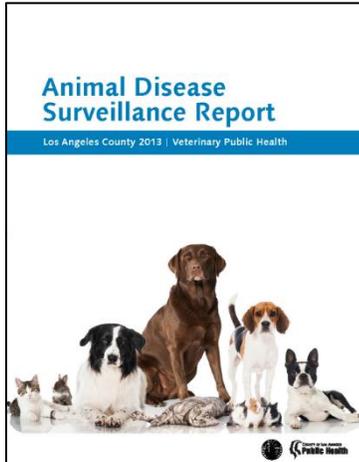


# Reports and publications

VPH has developed several reports and guides for both pet owners and veterinarians.

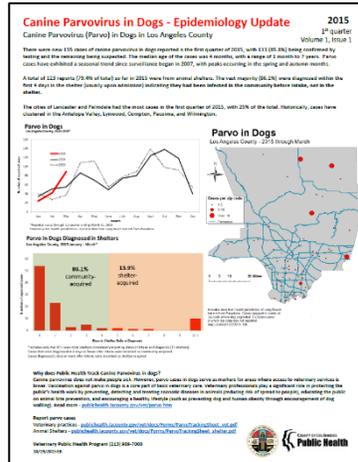
Please visit the following link to download them: [publichealth.lacounty.gov/vet/Reports.htm](http://publichealth.lacounty.gov/vet/Reports.htm).

## ANNUAL REPORTS



**Animal Disease Surveillance Report (2013)**

## EPIDEMIOLOGY UPDATES



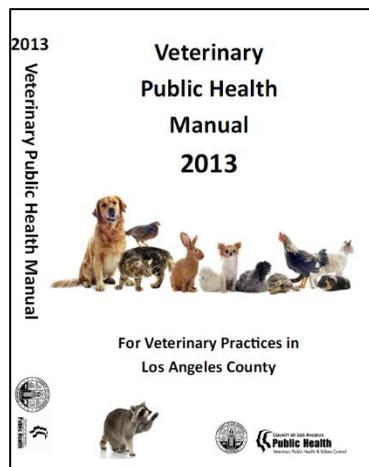
**Canine Parvovirus – Epidemiology update (Quarterly)**

## SPECIAL REPORTS



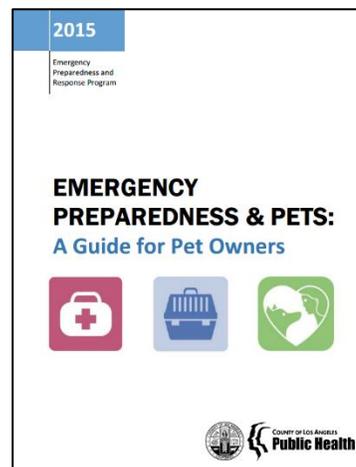
**Healthy Pets, Healthy Families Initiative (2014)**

## VETERINARY PUBLIC HEALTH MANUALS



**Veterinary Public Health Manual (2013)**

## GUIDES



**Emergency Preparedness & Pets – A guide for Pet Owners (2015)**



# CALIFORNIA COMPENDIUM OF RABIES CONTROL AND PREVENTION



California Department of Public Health  
Veterinary Public Health Section, 2012



**CALIFORNIA COMPENDIUM OF RABIES CONTROL AND PREVENTION  
2012**

**Veterinary Public Health Section  
Infectious Diseases Branch  
Division of Communicable Disease Control  
Center for Infectious Diseases  
California Department of Public Health  
1616 Capitol Ave, MS 7308  
P.O. Box 997377  
Sacramento, CA 95899-7377**

**Phone (916) 552-9740, Fax (916) 552-9725**

**[vetph@cdph.ca.gov](mailto:vetph@cdph.ca.gov)**

**<http://www.cdph.ca.gov/programs/vphs/Pages/default.aspx>**

## **Introduction**

This publication of the California Department of Public Health (CDPH) provides information on rabies to California's public health officials, medical professionals, practicing veterinarians, animal control officers, and other parties concerned with rabies control in the State. The recommendations contained herein are reviewed and updated on a periodic basis to reflect the current status of rabies and rabies prevention activities in California. Updates are based on current rabies research and scientific literature, rabies prevention guidelines published by the federal Advisory Committee on Immunization Practices (ACIP)<sup>1,2</sup> and by the National Association of State Public Health Veterinarians<sup>3</sup>, California state statute and regulations, and established rabies control practices and procedures.

Recommendations by state and federal experts and existing standards of practice outlined in this document are intended to provide guidance to individuals and agencies involved with rabies prevention and control in California. Except for statutes and regulations specifically cited, the information contained in this document are recommendations provided for informational purposes only and are not intended to be regulatory in effect.

# Part I.

## Animal Rabies Control

### A. Principles of rabies control

#### 1. Human rabies prevention

Human rabies can be prevented by a) eliminating exposure to rabies virus, b) providing appropriate rabies pre-exposure prophylaxis, and c) prompt local treatment of bite wounds combined with appropriate rabies post-exposure prophylaxis. Human rabies pre- and post-exposure prophylaxis are addressed in Part II of the Compendium.

#### 2. Domestic animal rabies control

The California Health and Safety Code (HSC), §121690, mandates that the governing body of each city, city and county, or county maintain or provide a rabies control shelter system and a rabies control program. The primary components of a rabies control program for companion animals are: immunization and licensing; stray animal control; reporting, investigation, and isolation of animals involved in bite incidents; and public education.

#### 3. Wild animal rabies control

Rabies virus is maintained in populations of wild animals and occasionally spills over into domestic animals and humans. In California, skunks and bats comprise over 90 percent of animal rabies cases reported each year. Prevention and control of rabies in bats and terrestrial mammals pose considerable challenges. It is generally not possible or desirable to control rabies by reducing the size of wild carnivore or bat populations. Selective population reduction may be attempted in terrestrial rabies outbreaks of limited geographic scope, but these efforts can be labor and resource intensive and provide effective control only until immigration or reintroduction of the incriminated species. Immunization of wildlife by widespread distribution of vaccine-impregnated oral baits has shown variable success toward arresting the propagation of rabies in raccoons and coyotes in other states. The effectiveness of oral rabies vaccination programs has not been demonstrated for skunks and such programs would be infeasible for bats. Principles of rabies prevention should focus on excluding wild animals from areas of human and domestic animal habitation and activity, and avoidance of contact with possibly rabid wild animals. Public education on the risks of rabies transmission from wild animals is paramount to effective disease prevention.

### B. Rabies control methods for domestic and confined animals

#### 1. Animal bite reporting (Title 17, California Code of Regulations [CCR], §2606)

The local health officer or designee shall be immediately notified of any person or animal bitten

by or potentially exposed to a rabid or suspected rabid animal. In addition, the local health officer or designee shall be notified when any person is bitten by a mammal. Potential human rabies exposures are then evaluated and rabies post-exposure prophylaxis (PEP) recommendations made.

## **2. Isolation of biting animals (17 CCR §2606)**

### **(a) General considerations**

Dogs, cats, and ferrets that bite a human or another dog, cat, or ferret are subject to isolation and observation, or euthanasia and testing. If the bite is judged by the local health officer to be unusual or to represent an increased risk for rabies (e.g., unprovoked attacks, bites to the face, or considerable deep tissue damage), the animal should be euthanized and tested immediately. The National Association of State Public Health Veterinarians recommends that if an animal under isolation develops clinical signs suggestive of rabies, the animal should be humanely euthanized and the head submitted for rabies testing through the local public health laboratory.<sup>3</sup> Any unclaimed or stray animal that bites a human may be euthanized and the head promptly submitted to the local public health laboratory for rabies testing. Protocols for submitting samples for rabies testing are available from the local public health laboratory. Rabies or other immunizations should not be administered to a dog, cat, or ferret during isolation because adverse reactions may be misinterpreted as clinical signs of rabies.<sup>3</sup>

### **(b) Dogs and cats (17 CCR §2606(b)(2))**

Domestic dogs and cats that bite or otherwise expose humans must be isolated in strict confinement and in compliance with the local health officer's isolation order. The biting dog or cat must be either a) observed daily for signs of rabies for ten (10) days following the exposure date, regardless of the animal's vaccination status, or b) euthanized immediately and tested for rabies in a public health laboratory. If an isolated dog or cat is healthy at the end of the ten-day period, there is no risk of a rabies exposure from the original bite wound.

### **(c) Ferrets**

It is illegal in California to possess a ferret as a pet (California Fish and Game Code [FGC] §2118). Nevertheless, bites from these animals occur. If a ferret bites a human in California, it should be isolated in strict confinement and in compliance with the local health officer's isolation order. The biting ferret should be either a) observed daily for signs of rabies for ten (10) days following the exposure date, regardless of the animal's vaccination status, or b) euthanized immediately and tested for rabies in a public health laboratory. Biting ferrets should be confiscated by the animal control agency and isolations conducted under the direction of the local health officer in an animal control shelter or veterinary hospital. If an isolated ferret is healthy at the end of the ten-day period, there is no risk of a rabies exposure from the original bite wound. Because pet ferrets are illegal in California, any ferret isolated for a human bite should be reported to the California Department of Fish and Game for disposition following the isolation.

### **(d) Other domestic and nondomestic species**

The incubation period, clinical presentation, and pre-clinical period of rabies virus shedding are well described only for dogs, cats, and ferrets. The period in which other domestic, non-domestic, and wild animals shed rabies virus prior to showing clinical

signs of rabies is generally not known. Biting wild, nondomestic, or domestic animals other than dogs, cats, and ferrets should not be isolated for observation but should be euthanized and tested for rabies immediately.

While isolation of biting animals other than dogs, cats, and ferrets is not recommended for the reasons given above, local health officers have the prerogative to forego euthanasia and testing in rare special circumstances. If the biting animal has a comprehensive and reliable history that precludes opportunity for exposure to rabies virus, and the risk of rabies in the biting animal is judged by the health officer to be acceptably low, the health officer may institute a prolonged (30-day) isolation of the biting animal. Under the care of a physician, the bite victim could be started immediately on rabies PEP. This special allowance can be considered due to the low risk for exposure, the reliable efficacy of rabies PEP, and the low incidence of serious adverse reactions with that treatment.

### **3. Isolation of animals exposed to rabies (17 CCR §2606)**

Any animal bitten by, scratched by, or having direct contact with a wild mammal (especially bats and skunks) that is not available for rabies testing should be regarded as having been exposed to rabies.

#### **(a) Dogs, cats, and ferrets**

Dogs, cats, and ferrets that are currently vaccinated should be revaccinated immediately and placed in strict isolation for 30 days. While isolation provisions are at the discretion of the local health officer, “strict isolation” must preclude contact between the isolated animal and other animals and the public. Any other dogs, cats, or ferrets for which contact with the bitten animal cannot be absolutely prevented during the isolation period should be held to the same restrictions for the entire isolation period. Ferrets must be confiscated by the animal control agency and isolation conducted under the direction of the health officer in an animal control shelter or veterinary hospital. Because ferrets are illegal to possess as pets in California, any ferret must be reported to the California Department of Fish and Game for disposition following the isolation. Unvaccinated dogs, cats, and ferrets exposed to a rabid or suspect rabid animal should be euthanized immediately.<sup>3</sup> An alternative to euthanasia is immediate vaccination of the animal and placement in strict isolation for six months (180 days). Euthanasia is strongly recommended for unvaccinated juvenile animals due to their higher susceptibility to rabies infection. Protocols for the post-exposure vaccination of previously unvaccinated animals have not been validated, and there is evidence that the use of vaccine alone in a post-exposure setting may not prevent the disease.

#### **(b) Livestock**

All livestock species--horses, cattle, sheep, goats, llamas/alpacas, swine--are susceptible to rabies infection. Cattle and horses are the livestock species most frequently diagnosed with rabies. Unvaccinated livestock bitten by or exposed to a rabid or suspect rabid animal should be euthanized.<sup>3</sup> If the animal is slaughtered within seven days after being exposed, the tissues may be consumed without risk of infection, provided liberal portions of the exposed area are discarded. However, the slaughtered animal cannot be sold commercially as a source of food; federal (United States Department of Agriculture [USDA]) meat inspectors are required to reject for slaughter any animal known to have been exposed to rabies within the past eight months.<sup>3</sup> Neither tissue nor milk from a

rabid animal should be used for human or animal consumption.<sup>3</sup> However, because heat inactivates rabies virus, persons who inadvertently drink pasteurized milk or eat fully cooked meat from an animal subsequently identified as rabid are not considered to have been exposed to rabies.

An alternative to euthanizing exposed livestock is to vaccinate the animal immediately with an approved vaccine and to place it in strict isolation for six months during which time the animal may not be transported, sold, or slaughtered unless approved by the local health officer and the California Department of Food and Agriculture. Livestock that are currently vaccinated should receive a rabies booster immediately and be placed in strict isolation for 30 days.<sup>3</sup> In general, an isolation order for the entire herd is not indicated unless the animals have been held in close confinement that would allow for multiple animals exposed to the same rabies source (e.g., a wild animal). It is unusual to have more than one rabid animal in a herd. In such cases, it is more likely that multiple animals were exposed by a single rabid wild animal or dog than that rabies virus was transmitted from herbivore to herbivore. Animals in a herd where a rabies death has occurred should be examined immediately for evidence of bite exposures.

**(c) Wild, nondomestic, and other mammals**

Wild, nondomestic, and other mammals bitten by or exposed to a rabid or suspect rabid animal should be euthanized immediately.<sup>3</sup>

**4. Animal rabies vaccination**

**(a) Rabies vaccine administration (HSC §121690, §121700)**

Animal rabies vaccines are restricted for sale to licensed veterinarians, biological supply companies, and government agencies that conduct rabies control programs. All animal rabies vaccines are restricted to use by, or under the supervision of, a California-licensed veterinarian. The level of supervision shall be consistent with Title 16, CCR, §2034-2036.5 of the California Veterinary Medicine Practice Act. The veterinarian whose signature is on the rabies certificate retains legal responsibility that the person administering the vaccine is appropriately trained in vaccine storage, handling, administration, and management of adverse events.<sup>3</sup> Rabies vaccines should be administered in accordance with the specifications of the vaccine product label or package insert. Rabies vaccine should be administered in a new, sterile needle and syringe. The re-use of cleaned and sterilized needles and syringes is strongly discouraged. Single use of the needle and syringe is consistent with vaccine manufacturers' recommendations.

**(b) Accidental human exposure to rabies vaccine**

Accidental human inoculation may occur during administration of an animal rabies vaccine. Such exposure to inactivated rabies vaccine does not constitute a risk for rabies infection.

**(c) Contraindications and adverse events**

There are no absolute contraindications to administration of rabies vaccine to appropriate species. Veterinarians should, if possible, postpone vaccinating animals that are ill or immunocompromised to ensure a robust immune response. There is no epidemiologic association between a particular licensed vaccine product and adverse events, including

vaccine failure. Adverse reactions to vaccination should be reported to the USDA, Center for Veterinary Biologics ( [http://www.aphis.usda.gov/animal\\_health/vet\\_biologics/vb\\_adverse\\_event.shtml](http://www.aphis.usda.gov/animal_health/vet_biologics/vb_adverse_event.shtml), Tel: 800-752-6255, e-mail: [CVB@usda.gov](mailto:CVB@usda.gov)).

Beginning in the 1990s, an association between the administration of certain vaccines, including rabies, and the development of cancer (sarcoma) in some cats was identified. However, this risk appears to be extremely low (1-2 cases per 10,000 vaccinated cats). The public health implications of rabies in domestic cats outweigh the low risk of a sarcoma developing at a vaccination site. To facilitate management of vaccine-associated sarcomas, to avoid injection of multiple vaccines at a single site (a putative risk factor for sarcoma formation), and to aid in documenting vaccine placement, the American Association of Feline Practitioners recommends that rabies vaccine be administered subcutaneously on the right hind limb distal to the stifle joint.

**(d) Canine rabies vaccination (HSC §121690; 17 CCR §2606.4, §2606.6 )**

The owner of every dog over the age of four months shall ensure that the dog is vaccinated for rabies by a licensed veterinarian and will secure a license for the pet as provided by local city or county ordinance. A current rabies vaccination certificate must accompany dogs over four months of age entering the state. Dogs less than four months of age must be confined at home or kept under close leash supervision by the owner when off property.

Twenty-eight days after primary vaccination peak rabies antibody level is reached and a dog is considered currently vaccinated for one year.<sup>3</sup>

Regardless of the age of the dog at primary vaccination, a booster vaccination should be given one year later. All vaccines approved for use in dogs in California follow a three-year booster schedule thereafter. There are no laboratory or epidemiologic data to support the annual or biennial administration of three-year vaccines following the initial immunization series. Because a rapid anamnestic response is expected, a dog is considered currently vaccinated immediately after receiving a booster vaccination. An animal that is overdue for a rabies booster should be vaccinated as soon as possible and the three-year booster schedule re-established.<sup>3</sup>

Only canine rabies vaccines licensed by USDA and approved by the California Department of Public Health (CDPH) can be used in the California Rabies Control Program (17 CCR §2651). The rabies vaccines currently approved for use in California are listed in Part III of the Compendium.

**(e) Feline rabies vaccination**

Vaccination of domestic cats for rabies is not mandated by California statute. However, because cats are the domestic species that is most frequently reported as rabid in the United States, feline rabies vaccination is required by some local ordinances and is strongly recommended for all cats. A USDA-licensed feline rabies vaccine should be administered according to the vaccine label instructions (see Part III of the Compendium). Cats are considered currently vaccinated from 28 days to one year following primary vaccination, and 1, 3, or 4 years following booster vaccinations, depending on the vaccine used.<sup>3</sup>

**(f) Ferret rabies vaccination**

It is illegal in California to possess a ferret as a pet (FGC §2118). Nevertheless, owners of illegally kept ferrets may occasionally seek veterinary care (California Business and Professional Code §4826.2). As a public health measure, veterinarians should vaccinate ferrets against rabies using a USDA-licensed rabies vaccine administered according to vaccine label instructions (see Part III of the Compendium). Ferrets are considered currently vaccinated from 28 days to one year following primary vaccination, and for one year following each booster.<sup>3</sup>

**(g) Livestock rabies vaccination**

Routine vaccination of all livestock against rabies is economically inpractical. However, vaccination of horses and livestock with a USDA-licensed vaccine (see Part III of the Compendium) should be considered in areas where wildlife rabies is highly endemic, for valuable individual animals, for horses kept in boarding stables or racetracks or traveling interstate, and for animals having frequent contact with humans (e.g., petting zoos).<sup>3</sup>

**(h) Wildlife and non-domestic rabies vaccination**

No rabies vaccines are licensed for use in animal species other than dogs, cats, cattle, horses, sheep, and ferrets in the U.S. The effectiveness of rabies vaccination in other species is unknown. Because of their susceptibility to rabies, wild carnivores and bats should not be kept as pets.<sup>3</sup> Bats and certain species of carnivores may not enter California without an importation permit from CDPH (17 CCR §30070-86) and are subject to a 90-day rabies quarantine upon importation into California. Carnivores and bats must be housed in a manner that precludes direct contact with the public.<sup>3</sup> Due to the special rabies risk, the trapping, transport, sale, and exchange of skunks in California is prohibited (17 CCR §2606.8). Zoos and research institutions may establish vaccination programs intended to protect valuable animals, but these programs do not substitute for appropriate preventive measures to protect humans.

The effectiveness of rabies vaccination in the progeny of domestic dogs or cats bred to wild animals (e.g., wolf-dog hybrids, civet-cat hybrids) is unknown. Complete rabies vaccine challenge and viral shedding studies have not been conducted for these animals. There is no definitive evidence that the vaccine is protective in these animals. Vaccination may afford some rabies protection to the animal; however, there are no rabies vaccines currently licensed for use in wild animals or in domestic-wild animal hybrids. Vaccination of these animals is considered an extra-label use of a biologic.

State law does not prohibit the use of rabies vaccines in domestic-wild animal hybrids. However, it is illegal to license domestic-wild canine hybrids as “dogs” under the California Rabies Control Program because they are considered wild animals (14 CCR §671(c)(2)(K)). A rabies vaccine certificate issued for a vaccinated hybrid must identify the animal as a "domestic-wild animal hybrid." Local jurisdictions may institute domestic dog-wolf hybrid permitting programs and issue such permits in order to identify these animals in the community (HSC §121695). Canine or feline hybrids previously vaccinated are nonetheless considered “unvaccinated” for purposes of isolation/ observation in the event of a bite incident or contact with a rabid or suspect rabid animal. All hybrids are considered "wild animals" under these circumstances and managed according to sections 2(d) and 3(c) in this Compendium.<sup>3</sup>

**(i) Canine licensing and vaccination procedure (17 CCR §2606.4)**

The vaccination of all dogs four months of age or older is required for licensure. Completion of the licensing procedure consists of issuing a license tag or vaccination tag bearing the license data only after presentation of a current valid official rabies vaccination certificate. Official rabies vaccination certificates must contain the following information:

- (a) name, address, and telephone number of the dog's owner;
- (b) description of the dog, including breed, color, age, and sex;
- (c) date of immunization;
- (d) type of rabies vaccine administered;
- (e) name of the manufacturer, product, and lot number of the rabies vaccine used.

Each certificate must bear the signature of the veterinarian administering the vaccination or a signature authorized by him or her. The certificate must be stamped, printed, or typed with the vaccinating veterinarian's name, address, and telephone number.

**(j) Rabies immunization exemptions (HSC §121690)**

A veterinarian may request from the local health officer an exemption from rabies vaccination for a dog for which the veterinarian determines that vaccination would endanger the dog's life because of disease or other considerations. If approved by the local health officer, the exempted dog may be issued a license but is considered unvaccinated and confined to the premises of the owner. Licensure of an exempted dog may not extend beyond one year; at or before the end of the one-year license period, the dog must be vaccinated for rabies or a request for vaccination exemption must be resubmitted to and reapproved by the local health officer.

**(k) Rabies serologic testing**

Serologic evidence of rabies neutralizing antibodies in an animal is not a substitute for current rabies vaccination in managing rabies exposures or determining the need for booster vaccinations.<sup>3</sup> Serum antibody titer is a measure of the animal's response to vaccine or infection and not a reliable indicator of protection. Elevated serologic titers do not necessarily indicate protection from rabies, nor do low or undetectable serologic titers reflect absence of protection. An ability to measure and interpret all the immunologic factors that play a role in protecting against rabies is not well developed.

**6. "Actual cost" rabies vaccination clinics (HSC §121690)**

Each city, city and county, or county shall provide or arrange for canine rabies vaccination clinics in the community. No charge in excess of the actual cost may be made for vaccination administration. The CDPH establishes the actual cost that vaccination clinics may charge. Fees in excess of the CDPH-established actual cost require cost documentation and prior approval by CDPH. Procedures and forms to request approval are available in the California Rabies Control Program Public Vaccination Clinic Manual (<http://www.cdph.ca.gov/HealthInfo/discond/Pages/rabies.aspx>).

# Part II.

## Human Rabies Prevention

### A. Rabies post-exposure prevention

Prevention of rabies following a possible exposure to rabies virus consists of two fundamental components: immediate cleaning and medical attention of the site of virus deposition, and post-exposure prophylaxis (PEP)--administration of human rabies immune globulin (HRIG) and rabies vaccine. Persons who have transdermal or mucous membrane contact with saliva or nervous tissue from a confirmed rabid animal, whether by bite or other means, should begin rabies PEP immediately. Persons exposed to a suspected rabid animal should begin PEP if rabies testing of the animal is not immediately available. To appropriately manage potential human exposure to rabies, the risk of infection must be accurately assessed. It is important to remember that rabies PEP is a medical urgency, not a medical emergency. With the exception of direct inoculation of rabies virus into the central nervous system (e.g., severe bite to the head that penetrates the neurocranium), there is time for information to be assembled and the risk to be rationally assessed. Nevertheless, decisions regarding PEP should not be delayed.

Extensive field experience from many parts of the world indicates that prompt wound treatment, passive immunization, and vaccination are uniformly effective in preventing development of clinical rabies when administered appropriately. However, rabies has developed in humans when recommended preventive protocols were not performed completely or correctly. Rabies PEP can be effective when initiated any time prior to onset of clinical disease. There have been many instances in which rabies PEP was not initiated until months after exposure due to delays in recognition of the exposure. Although onset of clinical rabies typically occurs between 60 and 90 days following exposure, incubation periods of one year or more have been reported. PEP should not be denied solely because a prolonged period of time has elapsed since the exposure event.

#### 1. Rabies exposure

Rabies exposure is defined as transdermal or mucous membrane contact with saliva--or, rarely, nervous tissue--from a rabid animal. A break in the cutaneous barrier that permits virus access to subdermal tissue may be created concomitant with (e.g., classic animal bite) or prior to (e.g., open wounds, abrasions, or scratches) deposition of saliva or contact with nervous tissue. Contact with other tissues (e.g. skin, hair, blood), secretions (e.g., skunk spray), or excretions (e.g., urine, feces) of a rabid animal does not constitute an exposure. Rabies virus is inactivated by exposure to ultraviolet radiation and by desiccation, though the exact time required to render the virus inactive varies according to environmental conditions. Dried saliva or neurologic tissue is generally considered noninfectious. Scenarios for secondary exposure or "contact-transfer" of

rabies virus (e.g., dog bites a skunk and then licks a human) are hypothetical and very unlikely to transmit rabies.

## **2. Assessment of rabies exposure**

Anti-rabies biologics are generally safe and in ready supply. Nevertheless, PEP should be allocated judiciously and reserved for individuals for whom exposure to rabies virus is likely. Decisions on PEP are ultimately made by the exposed individual and his/her health care provider, following a thorough assessment of the exposure incident and consultation with public health officials. No single set of criteria can determine the appropriateness of PEP for all situations. PEP decisions should be based on as much information about the exposure incident as can be assembled in a timely fashion. Factors that should be considered in PEP decisions include: species of biting animal, the physical and mental health of the biting animal, whether the bite was provoked, the severity of the bite, whether immediate wound care was implemented, the availability of the biting animal for isolation/observation or euthanasia/testing, and the bite victim's personal anxiety about rabies. Concerns about the bite victim's pre-existing medical conditions or ability to pay should never preclude initiation of PEP for an exposure incident in which PEP would be otherwise indicated (See Sections D and E).

Bats represent an important reservoir for rabies that deserves special consideration. Epidemiologic data suggest that transmission of rabies virus from bats can occur from very minor or even unrecognized bites. The limited injury inflicted by a bat bite (in contrast to wounds caused by carnivores) and equivocal recall of recognized exposure can hinder a health-care provider's ability to assess the risk of rabies resulting from an encounter with a bat.

Between 2000 and 2009, 18 human cases of rabies were identified in the U.S. with natural exposure to a bat variant virus. For only seven of these patients was a definite bat bite known; eight had known bat contact but no apparent bite, and for three no known contact with a bat was identified during the case investigation.

In all instances where a human is possibly exposed to a bat, the bat in question should be safely collected, if possible, and tested for rabies. Rabies PEP is recommended for all persons who experience a bite, scratch, or mucous membrane contact with a bat, unless the bat is available for testing and is negative for evidence of rabies. Rabies PEP may be appropriate even when a bite, scratch, or mucous membrane contact is not apparent if there is reasonable probability that such exposure might have occurred.

Rabies PEP should be considered when direct contact between a bat and a human has occurred, unless the exposed person can be certain that a bite, scratch, or mucous membrane exposure did not occur. In instances in which an apparently healthy bat is found indoors and there is no history of bat-human contact, the likely effectiveness of rabies PEP must be balanced against the low risk that such exposures appear to present. In this setting, rabies PEP can be considered for persons who were in the same room as the bat and are uncertain whether a bite or direct contact occurred (e.g., a sleeping person awakens to find a bat in the room or an adult witnesses a bat in the room with a previously unattended child, mentally disabled person, or intoxicated person) and rabies cannot be ruled out by testing the bat. Rabies PEP would not be warranted for other household members.

## **3. Local treatment of wounds**

Immediate and thorough washing of any bite or scratch wound with soap and water is an

indispensable measure in preventing rabies. Animal experiments have shown that simple local wound cleaning and irrigation can markedly reduce the likelihood of rabies. Victims of animal bites should consult with their health care provider; medical or surgical attention, a tetanus toxoid booster, and antibiotic prophylaxis may be indicated independent of the assessed risk of rabies transmission.

#### **4. Passive immunization**

Human Rabies Immune Globulin (HRIG) is administered only once, at the beginning of rabies PEP, to previously unvaccinated persons to provide immediate antibodies until the patient responds to rabies vaccination by actively producing antibodies. If HRIG is not given with the first dose of vaccine, it can be given up to Day 7 of the vaccine series. After Day 7, HRIG should be avoided due to possible interference with the developing vaccine immune response. HRIG is administered at a dose of 20 IU/kg body weight for all age groups. No more than the recommended dose of HRIG should be used due its potential to partially suppress active immunization. As much as possible of the calculated dose of HRIG should be infiltrated into the subcutaneous tissue and/or muscle around the wound site(s). Any remaining amount of HRIG should be administered intramuscularly at an anatomic site distant from vaccine administration. HRIG should never be administered in the same syringe or at the same anatomical site as vaccine and should never be administered in the gluteal area unless that is the site of exposure. In the absence of a bite or other known site of virus introduction, the full dose of HRIG should be administered at a site distant from vaccine administration (e.g., contralateral deltoid). Regardless of the interval between exposure and initiation of PEP, both HRIG and vaccine should be administered for both bite and nonbite exposures in persons not previously rabies immunized.

#### **5. Active immunization**

Human Diploid Cell Vaccine (HDCV) or Purified Chick Embryo Cell Vaccine (PCEC) is administered in conjunction with HRIG at the beginning of postexposure treatment. A regimen of four 1-ml doses of HDCV or PCEC is given intramuscularly. The first dose should be given as soon as possible following an exposure (Day 0), with subsequent doses given on Days 3, 7, and 14. Vaccine should always be administered intramuscularly in the deltoid (lateral aspect of the upper arm). For pediatric patients, vaccine may be administered intramuscularly in the anterolateral aspect of the thigh. Rabies vaccine should never be administered in the gluteal region, as this may result in lower, possibly inadequate neutralizing antibody levels.

Rabies PEP should always include both vaccine and HRIG except in persons who have previously received complete immunization regimens (pre- or post-exposure prophylaxis) with a cell culture vaccine, or persons previously vaccinated with another type of vaccine who have documentation of adequate rabies virus neutralization antibody titers. These persons should immediately receive two 1-ml booster doses of HDCV or PCEC vaccine administered intramuscularly on Days 0 and 3.

Because antibody response has been universally satisfactory in persons receiving the currently recommended rabies PEP schedule, routine post-treatment serologic testing is not recommended. Verification of adequate neutralizing antibody levels by serologic testing may be indicated in unusual circumstances, such as when the patient is known to be immunosuppressed. Immunosuppressive agents should not be administered during rabies PEP unless they are essential for the treatment of other conditions.

## **B. Pre-exposure prophylaxis**

Persons at frequent risk of exposure to rabies virus should consider pre-exposure prophylaxis (PreEP). Occupations considered to be in the "frequent risk" category include veterinarians, animal handlers, animal control officers, laboratory workers potentially exposed to rabies virus, and others who have frequent contact with mammals likely to have rabies. PreEP might be considered for other persons who are likely to come into contact with potentially rabid animals, such as wild mammal rehabilitators and persons traveling to foreign countries where canine rabies is endemic.

### **1. Primary or pre-exposure vaccination**

Three 1.0 ml injections of HDCV or PCEC are administered intramuscularly in the deltoid (lateral aspect of the upper arm) on days 0, 7, and 21 or 28. Multiple studies have documented development of rabies antibodies that meet or exceed recommended neutralizing titers ( $>0.5$  IU/ml) in all persons vaccinated according to this regimen. Persons who are immunosuppressed due to medication or illness should postpone PreEP if possible. Immunosuppressed persons who are at risk of rabies exposure can be vaccinated and should have their antibody titers measured following completion of the regimen.

### **2. Booster vaccination**

Routine rabies booster vaccination is not indicated for any pre-immunized group. The need for booster vaccination should be individually assessed based on current rabies antibody levels and the person's risk of exposure to rabies virus. Persons classified as having "frequent risk" (see B above) should have a serum sample tested for rabies antibody every two years--or every six months for persons working with rabies virus in a laboratory setting--following PreEP. If the titer is less than complete neutralization at 1:5 by the Rapid Fluorescent Focus Inhibition Test (RFFIT), the person should receive a single booster dose of rabies vaccine.

Several laboratories offer RFFIT testing at a cost of approximately \$35-\$45 per sample. Instructions for submission of samples and pricing are available by calling the numbers below. (RFFIT testing may also be available through other laboratories.)

The Rabies Laboratory  
Kansas State University  
Manhattan, KS 66502  
(785) 532-4483 Phone  
(785) 532-4474 Fax  
<http://www.vet.ksu.edu/depts/dmp/service/rabies/index.htm>

Maryland State Rabies Laboratory  
Maryland Department of Health  
201 W. Preston Street  
Baltimore, MD 21201  
(410) 767-6177 Phone  
<http://www.dhmh.state.md.us/labs>

Atlanta Health Associates, Inc.  
309 Pirkle Ferry Road, Suite D300  
Cumming, GA 30040  
(770) 205-9091, (800) 717-5612 Phone

## C. Rabies immunizing products available in the United States

1. Human rabies vaccine stimulates an active immune response including production of neutralizing antibodies. These antibodies develop in approximately 7-10 days and usually persist for at least 2 years. The two vaccines currently available in the U.S. are considered equally efficacious and safe when used as indicated. The 1.0 ml dose of either HDCV or PCEC can be used for PEP or PreEP.

(a) **Human Diploid Cell Vaccine (HDCV) - Imovax® Rabies**

HDCV is prepared from the Pitman-Moore rabies virus strain grown in MRC-5 human diploid cell culture. The vaccine is concentrated by ultrafiltration and inactivated with beta-propiolactone. A single-dose vial containing lyophilized vaccine is reconstituted with diluent to a volume of 1.0 ml just before administration. Imovax® Rabies is manufactured and distributed by Sanofi Pasteur, Inc. (phone 800-VAC-CINE [800-822-2463], <http://www.vaccineplace.com/products>).

(b) **Purified Chick Embryo Cell Culture (PCEC) - RabAvert®**

PCEC is prepared by growing the Flury LEP fixed-virus strain in primary culture of chicken embryonic fibroblasts. The virus is inactivated with beta-propiolactone, and further processed with zonal centrifugation in a sucrose density-gradient to separate the final product from media and cell culture antigens. The vaccine is then lyophilized after addition of a stabilizer solution. RabAvert® is manufactured and distributed by Chiron Vaccines (phone 800-CHI-RON8 [800-244-7668], <http://www.rabavert.com/>).

2. **Rabies Immune Globulin - Human (HRIG)** provides immediate passive immunity that endures for only a limited time (half-life of approximately 21 days).

**Imogam® Rabies-HT, HyperRab™ S/D**

Human rabies immune globulin (HRIG) is available from Sanofi Pasteur, Inc., (Imogam® Rabies-HT; phone 800- VAC-CINE [800-822-2463], <http://www.vaccineplace.com/products>), and Talecris Biotherapeutics, Inc., (HyperRab™ S/D; phone 800-243-4153, <http://www.talecris-pi.info/>). HRIG is an antirabies gamma globulin concentrated by cold ethanol fractionation from plasma of hyperimmunized human donors. Rabies neutralizing antibody content is standardized to 150 international units (IU) per ml. HRIG is supplied in 2 ml and 10 ml vials for pediatric and adult use, respectively. Imogam® Rabies-HT is heat treated but has no preservatives. It must be administered within an hour once the seal is broken. Both HRIG preparations are considered equally efficacious and safe when used as indicated.

## D. Adverse reactions to rabies immunizing products

### 1. Vaccine

Local reactions such as pain, erythema, and swelling or itching at the injection site were reported in approximately 30-75 percent of patients receiving HDCV or PCEC. Mild systemic reactions such as headache, malaise, dizziness, muscle aches, nausea, and abdominal pain have been reported in 5-50 percent of recipients. Anaphylactic, encephalitic, or neuromuscular events have been rarely reported.

## 2. **HRIG**

Local pain and tenderness at the injection site commonly occur following receipt of HRIG. A majority of recipients also experience mild systemic symptoms such as low grade fever and headache. No serious adverse events such as hypersensitivity or immune complex disease have been associated with HRIG.

HyperRab™ and Imogam® Rabies-HT undergo multiple viral clearance procedures during preparation. There is no evidence that hepatitis B virus, human immunodeficiency virus, or other bloodborne pathogens have ever been transmitted by commercially available HRIG in the U.S.

## 3. **Management of adverse reactions**

Once initiated, rabies PEP should not be interrupted or discontinued because of local or mild systemic adverse reactions to rabies vaccine. Usually such reactions can be successfully managed with non-steroidal anti-inflammatory and antipyretic agents (e.g., ibuprofen or acetaminophen). For more severe reactions, consideration should be given to switching to another product. When a person with a history of hypersensitivity must be given rabies vaccines, pre-medication with antihistamines may be considered; epinephrine should be readily available to counteract anaphylactic reactions, and the person should be carefully observed immediately after administration.

Systemic anaphylactic or neuroparalytic reactions occurring during the administration of rabies vaccines, though rare, pose a serious dilemma for the attending physician. A patient's risk of developing rabies must be carefully considered before deciding to discontinue vaccination. The use of corticosteroids in the treatment of life-threatening neuroparalytic reactions carries the risk of inhibiting the development of active immunity to rabies. It is especially important in these cases that the patient's serum be tested for rabies antibodies following vaccination.

All serious systemic, neuroparalytic, or anaphylactic reactions to a rabies vaccine should be reported to the Vaccine Adverse Event Reporting System (VAERS) via a 24-hour toll-free telephone number (800- 822-7967).

## 4. **Precautions and contraindications**

### a. **Immunosuppression**

Persons with compromised immune function—whether by pre-existing medical condition (e.g., neoplasia) or exogenous immunosuppressives (e.g., corticosteroids)—may fail to develop complete and protective immunity after vaccination. Patients who are immunosuppressed should postpone PreEP if possible and consider avoiding activities for which rabies PreEP is indicated. Immunosuppressed persons for whom PreEP is critical should have their antibody titers checked following completion of the vaccine series. Failure to seroconvert after the third dose should be managed in consultation with appropriate public health officials. Immunosuppressive agents should not be administered during rabies PEP unless essential for the treatment of other conditions.

### b. **Pregnancy**

Because of the potential consequences of inadequate treatment of a rabies exposure, pregnancy is not considered a contraindication to rabies PEP. No increased incidence of abortion, premature births, or fetal abnormalities has been associated with rabies vaccination. If the risk of exposure to rabies is substantial, PreEP might also be indicated

during pregnancy. Rabies vaccine given to a nursing mother does not affect the safety of breastfeeding for either mother or infant, and breastfeeding is not a contraindication to rabies vaccine.

**c. Antimalarials**

Concurrent use of antimalarial drugs may interfere with the immune response to rabies vaccination. In one study of persons undergoing PreEP with an intradermal rabies vaccine, individuals who were concurrently taking chloroquine had a lower geometric mean titer of anti-rabies antibodies at all test points compared to persons who were not taking antimalarials.<sup>4</sup> Nevertheless, all study subjects had serum antibody titers that exceeded the threshold that is considered adequate for protection (complete neutralization at 1:5 on RFFIT). Data are not available as to whether this same immunosuppressive effect occurs with other antimalarial drugs or with rabies PreEP using an intramuscular vaccine.

**d. Allergies**

Persons who have a history of serious hypersensitivity to rabies vaccine should be revaccinated with caution.

**5. Cost**

Coverage for rabies immunization, for both PreEP and PEP, varies among health insurance plans. Options are available to persons in need of PEP who are uninsured or otherwise cannot afford treatment.

- a. Rabies vaccine (CPT Codes 90675/90676, and 90460/90461 or 90471/90472) and HRIG (CPT Codes 90375/90376 and 96372) are covered for Medi-Cal eligible persons. Eligibility may need to be determined by emergency certification request at the county welfare office.
- b. For individuals who are ineligible for Medi-Cal, have annual income at or below 200 percent of the federal poverty level, and reside in participating counties, the cost of rabies PEP may be covered through the California County Medical Services Program.
- c. Both rabies vaccine manufacturers have patient assistant programs that provide medications to uninsured or underinsured patients. To be eligible, patients must be indigent, uninsured, ineligible for Medicare or Medi-Cal, have household income below federal poverty level, and the attending physician must waive all fees associated with treatment. Eligibility requirements differ between companies and they should be contacted directly to discuss whether a patient is eligible for their program. Sanofi Pasteur's Indigent Patient Program (providing Imogam<sup>®</sup> Rabies-HT and Imovax<sup>®</sup> Rabies) is administered through the National Organization for Rare Disorders. Information is available by telephone (877-798-8716) or e-mail ([nnadiq@rarediseases.org](mailto:nnadiq@rarediseases.org)). Information on Novartis Pharmaceuticals' Patient Assistance Program for RabAvert<sup>®</sup> is available at 800-277-2254 or <http://www.patientassistancenow.com/info/programstoaccessmedicines/patientassistanceinformation.jsp>.

## References

<sup>1</sup> Human Rabies Prevention - United States, 2008, Recommendations of the Advisory Committee on Immunization Practices. MMWR 2008; 57(RR-1):1-28. <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5703a1.htm>

<sup>2</sup> Use of a Reduced (4-Dose) Vaccine Schedule for Postexposure Prophylaxis to Prevent Human Rabies Recommendations of the Advisory Committee on Immunization Practices. MMWR 2010; 59(RR-2):1-9. <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5902a1.htm>

<sup>3</sup> Compendium of Animal Rabies Prevention and Control, 2011, National Association of State Public Health Veterinarians. <http://www.nasphv.org/documentsCompendia.html>

<sup>4</sup> Pappaioanou M, Fishbein DB, Dreesen DW, et al. Antibody response to pre-exposure human diploid cell rabies vaccine given concurrently with chloroquine. N Engl J Med 1986; 314:280–4.

**Part III.**  
**California Department of Public Health**  
**Compendium of U. S. Licensed Animal Rabies Vaccines - 2012,**  
**and Their Application in Animals Under the California Rabies Control Program**  
- continued -

Product Name	Produced By	Marketed By	For Use In	Dosage/Route*	Minimum Age at Primary Vaccination	Booster Recommendation
<b>A) MONOVALENT – INACTIVATED</b>						
CONTINUUM RABIES	Intervet Inc. License No. 165A	Intervet Inc.	<b>Dogs</b> Cats	1 ml SC 1 ml SC	3 months 12 weeks	1 year later & triennially 1 year later & quadrennially
DEFENSOR 1	Zoetis License No. 189	Zoetis	<b>Dogs</b>  Cats	<b>NOT APPROVED FOR USE IN CALIFORNIA</b>		
DEFENSOR 3	Zoetis License No. 189	Zoetis	<b>Dogs</b> Cats Sheep Cattle	1 ml IM or SC 1 ml SC 2 ml IM 2 ml IM	3 months 3 months 3 months 3 months	1 year later & triennially 1 year later & triennially Annually Annually
NOBIVAC 1	Merck Animal Health License No. 189	Intervet Inc.	<b>Dogs</b>  Cats	<b>NOT APPROVED FOR USE IN CALIFORNIA</b>		
NOBIVAC 3 CA	Merck Animal Health License No. 189	Intervet Inc.	<b>Dogs</b> Cats Sheep Cattle	1 ml IM or SC 1 ml SC 2 ml IM 2 ml IM	3 months 3 months 3 months 3 months	1 year later & triennially 1 year later & triennially Annually Annually
EQUI-RAB	Merck Animal Health License No. 165A	Intervet Inc.	Horses	1 ml IM	4 months	Annually
RABVAC 1	Boehringer Ingelheim Vetmedica, Inc. License No. 112	Boehringer Ingelheim Vetmedica, Inc.	<b>Dogs</b>  Cats	<b>NOT APPROVED FOR USE IN CALIFORNIA</b>		
RABVAC 3	Boehringer Ingelheim Vetmedica, Inc. License No. 112	Boehringer Ingelheim Vetmedica, Inc.	<b>Dogs</b> Cats Horses	1 ml IM or SC 1 ml IM or SC 2 ml IM	3 months 3 months 3 months	1 year later & triennially 1 year later & triennially Annually
RABVAC 3 TF	Boehringer Ingelheim Vetmedica, Inc. License No. 112	Boehringer Ingelheim Vetmedica, Inc.	<b>Dogs</b> Cats Horses	1 ml IM or SC 1 ml IM or SC 2 ml IM	3 months 3 months 3 months	1 year later & triennially 1 year later & triennially Annually
PRORAB-1	Intervet Inc. License No. 165A	Intervet Inc.	<b>Dogs</b>  Cats Sheep	<b>NOT APPROVED FOR USE IN CALIFORNIA</b>		
IMRAB 3	Merial, Incorporated License No. 298	Merial, Incorporated	<b>Dogs</b> Cats Sheep Cattle Horses Ferrets	1 ml IM or SC 1 ml IM or SC 2 ml IM or SC 2 ml IM or SC 2 ml IM or SC 1 ml SC	3 months 12 weeks 12 weeks 12 weeks 12 weeks 12 weeks	1 year later & triennially 1 year later & triennially 1 year later & triennially Annually Annually Annually
IMRAB 3 TF	Merial, Incorporated License No. 298	Merial, Incorporated	<b>Dogs</b> Cats Ferrets	1 ml IM or SC 1 ml IM or SC 1 ml SC	3 months 12 weeks 12 weeks	1 year later & triennially 1 year later & triennially Annually
IMRAB Large Animal	Merial, Incorporated License No. 298	Merial, Incorporated	Cattle Horses Sheep	2 ml IM or SC 2 ml IM or SC 2 ml IM or SC	3 months 3 months 3 months	Annually Annually 1 year later & triennially
IMRAB 1	Merial, Incorporated	Merial, Incorporated	<b>Dogs</b>	<b>NOT APPROVED FOR USE IN CALIFORNIA</b>		

**Part III.**  
**California Department of Public Health**  
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- continued -

	License No. 298		Cats	1 ml SC	12 weeks	Annually
IMRAB 1 TF	Merial, Incorporated License No. 298	Merial, Incorporated	<b>Dogs</b> Cats	<b>NOT APPROVED FOR USE IN CALIFORNIA</b>		
				1 ml SC	12 weeks	Annually
Product Name	Produced By	Marketed By	For Use In	Dosage/Route*	Minimum Age at Primary Vaccination	Booster Recommendation
<b>B) MONOVALENT- RABIES GLYCOPROTEIN, LIVE CANARY POX VECTOR</b>						
PUREVAX Feline Rabies	Merial, Incorporated License No. 298	Merial, Incorporated	Cats	1 ml SC	8 weeks	Annually
<b>C) COMBINATION - INACTIVATED RABIES</b>						
CONTINUUM DAP-R	Intervet Inc. License No. 165A	Intervet Inc.	Dogs	1 ml SC	3 months	1 year later & triennially
CONTINUUM Feline HCP-R	Intervet Inc. License No. 165A	Intervet Inc.	Cats	1 ml SC	12 weeks	1 year later & triennially
EQUINE POTOMAVAC + IMRAB	Merial, Incorporated License No. 298	Merial, Incorporated	Horses	1 ml IM	3 months	Annually
<b>D) COMBINATION – RABIES GLYCOPROTEIN, LIVE CANARY POX VECTOR</b>						
PUREVAX FELINE 3/ RABIES	Merial, Incorporated License No. 298	Merial, Incorporated	Cats	1 ml SC	8 weeks	Annually
PUREVAX FELINE 4/ RABIES	Merial, Incorporated License No. 298	Merial, Incorporated	Cats	1 ml SC	8 weeks	Annually

ROUTES AND SITES OF INOCULATION IN DOGS: Approved canine vaccines must be administered to dogs according to the manufacturer's recommendations either intramuscularly (IM) or subcutaneously (SC). Administration via other sites or routes may reduce effectiveness or be unsafe. For species other than dogs, refer to the vaccine label.

Adapted from the Compendium of Animal Rabies Prevention and Control, 2011, National Association of State Public Health Veterinarians, Incorporated Rev. 10/15/13, 12/31/13

\* Intramuscularly (IM)  
Subcutaneously (SC)

**Let's keep in touch!**  
Los Angeles County Department of Public Health  
Veterinary Public Health program

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