**Health, Housing, and Community Services Department**

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# CITY OF BERKELEY PUBLIC HEALTH ALERT

## Addressing Leptospirosis at Harrison Street Encampments

**January 12, 2026**

- **ALERT** – conveys the highest level of importance; warrants immediate action or attention.
- **ADVISORY** – provides important information for a specific incident or situation.
- **UPDATE** – provides updated information regarding an incident or situation.

## I. KEY MESSAGES

### 1. Leptospirosis Transmission at Harrison Street Encampments

Numerous rats and at least 2 dogs in and near Harrison Street encampments tested positive for Leptospirosis in 2025 – a treatable disease that can have severe and potentially fatal impacts to people and dogs who are exposed to infected water or mud. Rats and their urine are the vectors for Leptospirosis.

### 2. Risk to humans and their pets in and around Harrison Street Encampments and Recommended Actions

The presence of rats that are transmitting Leptospirosis has made the area unsafe for human encampment conditions in the vicinity of Harrison Street encampments in the area generally bounded by San Pablo Avenue, Gilman Street, Codornices Creek and the railroad tracks.

The City's Health Officer strongly recommends that encampment residents move out of the defined encampment "RED ZONE" area as soon as possible and at least 1/3 of a mile away due to the public health risk caused by the rat infestation transmitting Leptospirosis in the area. Any items removed from encampments and exposed to mud

and standing water should be disinfected. Immediate departure from these encampments will reduce risk to encampment residents and their dogs, and to the surrounding neighborhood, while also allowing the City to mitigate the currently uncontained Leptospirosis contagion associated with the rat population.

There are simple and readily attainable precautions to take for people in the neighboring area who have indoor shelter and plumbing, and access to safe storage of food, continuous disposal of garbage, and ability to prevent rat infestation in their homes and businesses. These available precautions can be taken for themselves and for their pets, such as dogs and free roaming pet cats.

### 3. Clinical Aspects of Leptospirosis

This dangerous Leptospira bacteria exists in the urine and body tissue of its rat vector and stays alive for 30 days or more in water and mud contaminated with infected rat urine. People or animals who touch or drink contaminated water or mud are potentially exposed to the bacteria. The disease is transmitted to humans and animals when the contaminated water touches mucous membranes – such as eyes, nose, mouth or skin cuts. This disease is not spread in the air or by coughing or sneezing.

## II. SUMMARY AND BACKGROUND

### A. What is Leptospirosis?

Leptospirosis is a bacterial disease that affects both humans and animals. It is caused by bacteria of the genus Leptospira. For more information, please visit the official CDC Leptospirosis webpage[1] and the CDPH Leptospirosis webpage[2].

**In Humans:** Leptospirosis is usually asymptomatic. If symptoms occur, they are typically “flu-like” in nature and can be treated with common antibiotics. In some people, this infection can lead to severe and potentially fatal symptoms.

**Transmission:** The bacteria live in the urine and body tissue of infected rats and most commonly spreads in mud and water infected with this rat urine. Humans, dogs, and other animals are at risk of infection from rats carrying Leptospirosis. Humans, dogs and other animals infected with Leptospirosis are not thought to represent risk of spreading to other animals or humans but can become seriously ill if infected. There is antibiotic treatment for humans, dogs and cats. An effective vaccine exists for dogs and cats. This disease is not airborne and is not spread by coughing or sneezing.

### B. Treatment and Prevention Vaccination:

[1] https://www.cdc.gov/leptospirosis/about/index.html.
[2] https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/Leptospirosis.aspx.

**Clinical Treatment and Prevention:** In both animals and humans, the infection is treated with oral antibiotics and with other forms of supportive care for those who become seriously ill with the disease. A vaccine is available for dogs and cats. This vaccine is a two-shot series.

**Exposure Protocol:** If you or your pets have possibly been exposed to Leptospirosis and you have concerns, contact your healthcare provider or veterinarian and inform them of the potential exposure. Healthcare providers and veterinarians are encouraged to contact the Public Health Officer if they have any questions, concerns or new cases to report.

### C. Identification of Leptospirosis transmission at the Harrison Street Encampments

Leptospirosis was identified by veterinarians treating sickened dogs at the Harrison Street encampment and by Alameda County Vector Control testing rats in November-December 2025. At the request of the City of Berkeley, Vector Control trapped rats at the encampment in December 2025 due to the concern raised by the Leptospirosis infections in dogs at the encampment. Subsequent testing confirmed the presence of the bacteria in the rats tested. This was of particular concern because testing of rats trapped at encampments over the last 5 years by Alameda County Vector Control across the County, including in Berkeley, had never previously produced any findings of Leptospirosis in rats. There is an ongoing public health investigation into the status of Leptospirosis transmission at this encampment site and in the surrounding area.

The City of Berkeley's actions in response to this public health concern included:

a. Coordinating with Alameda County Vector Control to post notices around the area of the encampment, where the rats were trapped, to alert the neighborhood of the Leptospirosis risk.

b. Informing the people living in the encampment of the risk through outreach by Alameda County Health Care for the Homeless and Street Health teams.

c. Planning a Health Outreach event on January 13, 2026 (and possibly more in the future if needed) at the encampment to enhance communication, support and response for the population. d. Ongoing plans for continued rat testing and abatement efforts.

## III. THE IMPERATIVE FOR IMMEDIATE AND ONGOING RESPONSE:

*Risk of continued Leptospirosis transmission in Rats and potentially to Dogs, Humans and other animals from Rat Vectors at the Harrison Street Encampment*

This Public Health Alert is issued in conjunction with the attached Court Declaration of a Public Health Threat by the City of Berkeley Health Officer (January 6, 2026). Findings outlined in the attached declaration include:

**Evidence of Active Transmission:** Following two canine infections in November 2025 associated with the encampment, targeted rat testing for Leptospirosis was performed. Unlike the previous negative test results across Alameda County over the last 5 years of rats associated with encampments, numerous rats trapped at the Harrison Street site in late December 2025 tested positive for active infection. Previously no positive Leptospirosis testing in rats had been found in the last 5 years. This proves the potentially deadly bacteria is circulating at potentially hazardous levels within the local rodent population and environment at the Harrison Street encampment.

**Environmental Reservoir:** The verdant corridor of Codornices Creek, adjacent to the encampment, combined with human-generated food and harborage sources, has created a year-round potential Leptospirosis "reservoir" associated with the environmental conditions in the Harrison Street encampment. The bacteria require water and mud to spread. Current Harrison Street encampment conditions (tents, refuse, uncontained food, RVs, standing water) prevent standard vector control teams from accessing and destroying rat nesting sites. Rodent eradication, ongoing rat testing for Leptospirosis, and remediation of the area to prevent a growing rat infestation is a medical and public health safety necessity that cannot be successfully completed while the encampment is occupied by temporary dwellings, people and dogs.

**Health Management:** Under the current conditions and during the rat abatement process, people should minimize contact with infected materials and rats and seek medical attention for themselves and their pets if there is concern of Leptospirosis exposure. A strategy for protecting the health of the community throughout this rat abatement process will be enhanced by continued education of the community. These public health communication efforts have already begun and are ongoing.

## IV. Geographic Risk Zones and response targeted at preventing further Leptospirosis Transmission

To aid with response to this public health threat of Leptospirosis contagion and tracking of the outcomes, two geographic Public Health risk zones are identified. It is the intention of the City of Berkeley's Public Health Division to respond to this public health threat in such a manner that the Red and Yellow risk zones identified will transition to Green (no known risk) by the end of the response period.

**RED:** Risks are greatest for those who lack indoor shelter, functional plumbing, secure garbage, safe food storage and the ability to prevent rat infestations in their home or business.

Unmitigated environmental conditions are present for people living in the Harrison Street encampments. These conditions led to uncontrolled rat population growth in this area due to factors that include uncovered garbage, lack of running water, lack of contained food storage, and lack of access to rat burrows for vector control efforts. There is current evidence of Leptospirosis transmission from rat vectors to dogs.

**YELLOW :** area in 1/3 mile zone around the RED ZONE in which there is lower risk for people not living in encampments. The risk in this zone is due to the close proximity to the red zone.

**GREEN (no known risk):** no current known risk of rat infestation and Leptospirosis transmission and not in proximity to the red zone.

## V. INSTRUCTIONS FOR ENCAMPMENT RESIDENTS ON OR NEAR HARRISON STREET (RED AND YELLOW ZONES)

Per the Health Officer's Declaration, the following actions are required to prevent the continued transmission of Leptospirosis associated with the Harrison Street Encampment Red Zone:

**Vacate the Area:** Individuals are strongly urged to move at least 1/3 mile away from the Encampment Zone to allow for intensive cleaning and vector control. This requires moving outside the yellow zone area.

**RV Safety and Destruction:** Vehicles with long-term rat infestations are classified as irremediable biohazards. Due to structural contamination of insulation, ducting, and flooring, destruction is recommended for public safety.

**Mandatory Cleaning of Property:** All non-porous items (bicycles, metal tools, hardware) should be cleaned of all mud before removal from the encampment:

- **Pre-Clean:** Scrub away all visible mud/debris with soap and water.
- **Disinfect:** Apply a 1:10 bleach-to-water solution.
- **Contact Time:** Surfaces must remain wet for at least 10 minutes.

**Property and Food Disposal:** Destroy contaminated soft goods (blankets, tents) in extended contact with the ground. Dispose of Food and stored drinks and water that has potentially been in contact with mud or rats.

**PPE:** when contacting mud, standing water or items exposed to mud/water in the encampment, use waterproof boots, masks, protective eyewear and nitrile/rubber gloves. Avoid skin, mouth, nose, or eye contact with mud, runoff, or unclean water.

## VI. VACATING THE ENCAMPMENTS (RED AND YELLOW ZONES)

*Area of High Risk for transmission of Leptospirosis and ongoing exposure*

The map below defines the area within which there should be no encampment while this Health Alert is active. People in encampments in this area should leave for their own health as well as for the general public. It is important to ensure a sufficient safety buffer to the RED ZONE, of 1/3 mile, within which Vector Control will work to eliminate the rat population there. This 1/3 mile safety buffer will be a focus of prevention activities to block the further spread of Leptospirosis risk.


## VII. GUIDANCE FOR THE SURROUNDING NEIGHBORHOOD (YELLOW ZONE)

*This* area indicates Lower Risk of exposure and Transmission of Leptospirosis. These lower risks are strongly tied to having indoor shelter, functional plumbing, secure garbage, safe food storage and the ability to prevent rat infestations in their home or business.

The Yellow Zone is the 1/3-mile *area surrounding the encampment red zone. In the lower risk yellow zone there is no evidence of active transmission of Leptospirosis or of unmitigated rat populations. However, proximity to the encampment red zone creates risk and need for prevention efforts***.**

**Street Runoff:** For the general public, treat the creek and all water in gutters or puddles on side streets within the 1/3-mile buffer as contaminated until Leptospirosis

transmission control goals are achieved at the encampment. Avoid walking or biking through standing water or touching the water in the creek.

**Pet Safety:** Ensure dogs have the Leptospirosis vaccine. Keep pets on a short leash; bring water on walks, do not allow them to drink from other sources. If you have free roaming cats, consider also having them vaccinated for Leptospirosis.

**Gardening Precautions:** Bacteria from rat urine can be present in mud and standing water in areas where people may grow fruits and vegetables. Wear gloves and protective foot coverings, such as rubber boots. Wash all fruits and vegetables thoroughly before consumption.

**VIII. CLINICAL RECOGNITION AND REPORTING For People:** If you have had possible Leptospirosis exposure and you are ill, for example with Flu-like symptoms such as fever, red eyes, headache, and muscle aches, or other concerning symptoms, seek medical care immediately and mention the possible exposure to Leptospirosis. Because Leptospirosis is rarely seen by doctors in the US, as it is usually associated with tropical conditions, it is important to let your health care provider know that you may be impacted by the conditions described in this Health Alert.

**For Pets:** If you believe your pet has been exposed or is showing signs of illness—such as fever, jaundice, or changes in urination—contact your veterinarian immediately to discuss testing, antibiotic treatment, or the Leptospirosis 2 dose vaccine.

**For veterinarians, physicians and other clinicians** with questions, concerns or any information about possible Leptospirosis cases, please contact City of Berkeley to reach the Public Health Officer.

**Contact Information:**
City of Berkeley:
Telephone: (510) 981-5460
Email: leptoinformation@berkeleyca.gov

**Attachment:** Declaration of a Public Health Threat Dated January 6, 2026

**Attachment:** Flyers and Handouts

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CITY OF BERKELEY

BERKELEY HOMELESS UNION, et al.

Plaintiffs,

v.

CITY OF BERKELEY, THOMAS GREGORY, PAUL BUDDENHAGEN, PETER RADU, OKEYA VANCE, RASHI KESERWANI, DOES 1-10,

Defendant.

Case No. 3:25-CV-01414-EMC

**DECLARATION OF NOEMI DOOHAN, M.D, Ph.D., M.P.H, IN SUPPORT OF CITY OF BERKELEY'S STATUS REPORT**

**Judge:** Hon. Edward M. Chen

I, Noemi Doohan, declare as follows:

1. I have a PhD in Biochemistry/Molecular Biology from the University of California Santa Barbara (1995), a MD from Stanford University (2003), Board Certification in Family Medicine from the Contra Costa Regional Medical Center in Martinez CA (2006), and an MPH from the University of Massachusetts Amherst (2019). I am the Public Health Officer for the City of Berkeley with prior experience as a Public Health Officer since 2019 in three other local jurisdictions (Mendocino County, Santa Barbara County and Lake County) and with the State of California Department of Public Health ("CDPH"). I am also a practicing hospitalist physician (for hospitalized patients) and a faculty member in the Stockton Dignity St. Josephs Family Medicine Residency Program with over 20 years of experience in primary care and hospitalist medicine practice, including as faculty in Family Medicine Residency programs prior to my

current faculty role in Stockon, CA (prior hospital medicine faculty roles: Eisenhower Medical Center, Rancho Mirage CA; University of California Riverside at Desert Regional Medical Center Palm Springs; Ukiah Valley Medical Center, Ukiah CA; Scripps Mercy Chula Vista Hospital, Chula Vista CA). I have founded and led two Street Medicine Programs in California (Doctors Without Walls, Santa Barbara CA starting in 2005 and Ukiah Valley Medical Center Street Medicine, Ukiah CA starting in 2015) with extensive experience caring for patients in encampment- and street-level environments as well as hospitalized unhoused patients. I also have extensive pre-pandemic global health clinical experience in Haiti and Ethiopia from 2010-2018, during which time I became familiar with neglected tropical diseases like Leptospirosis. This educational and professional background makes me an expert in matters related to public health, clinical medicine and specifically with regard to best practices for the identification, characterization, and mitigation of infectious diseases in the human population including unhoused populations.

2. I am the City of Berkeley ("City") sworn Public Health Officer ("PHO"). Every county in California must have a Local Health Jurisdiction (LHJ) and PHO. Three cities in the state also have their own LHJ and PHO (Berkeley, Long Beach, and Pasadena). In addition to this role, I am on the Executive Board of the California Conference of Local Health Officers ("CCLHO")[1] and I am an active member of the Association of Bay Area Health Officials ("ABAHO"). In my capacity as PHO, I rely upon my educational background and professional experience to carry out the core duties of the Health Officer including: responding to and controlling local and regional risks of contagion including outbreaks; epidemiologic evaluation of the Public's health; maintenance of Vital Statistics and Vital Records; vaccination programs for the public; disaster preparedness and response; education of and communication with local health care partners; Maternal Child and Adolescent Health Programs; and over 100 duties required by statute in the California Health and Safety Code. I perform these duties pursuant to authority granted under

[1] The CCLHO is established by statute to consult with CDPH to establish standards and make regulatory recommendations. *See* Cal. Health & Safety Code § 100925. The CCLHO consists of all legally appointed local health officers in the state. *Id.*

state and local law, including California Health and Safety Code, sections 101040[2], 101080[3], and 120175[4].

3. The facts or data described herein are those which I have personally observed or have been made aware of. The facts or data described herein are the kinds of facts or data that professionals and experts in the field of local governmental public health in general and PHOs specifically reasonably rely on in forming opinions and making decisions. If called as a witness, I could and would testify competently and truthfully to the facts and opinions set forth in this declaration

4. Leptospirosis (often called "Lepto") is a bacterial disease that lives in the kidneys and blood of their animal hosts, especially rats.[5] It is spread through their urine or by coming into direct contact with the animal.[6] The bacteria enter the environment (soil, mud, or water) when an animal urinates.[7] Humans, dogs and other animals get infected with Lepto when contaminated water or soil touches a cut/scrape or their eyes, nose, or mouth.[8]

5. In humans, Lepto symptoms can include sudden high fever, throbbing headache, severe calf/leg pain, and red eyes (conjunctivitis).[9] Without treatment, leptospirosis in people can

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[2] "The local health officer may take any preventive measure that may be necessary to protect and preserve the public health from any public health hazard during any 'state of war emergency,' 'state of emergency,' or 'local emergency,' as defined by Section 8558 of the Government Code, within his or her jurisdiction." Cal. Health & Safety Code § 101040(a).

[3] "[W]henever there is an imminent and proximate threat of the introduction of any contagious, infectious, or communicable disease, . . . the local health officer may declare a local health emergency in the jurisdiction or any area thereof affected by the threat to the public health." Cal. Health & Safety Code § 101080.

[4] "Each health officer knowing or having reason to believe that any case of the diseases made reportable by regulation of the department, or any other contagious, infectious or communicable disease exists, or has recently existed, within the territory under his or her jurisdiction, shall take measures as may be necessary to prevent the spread of the disease or occurrence of additional cases." Cal. Health & Safety Code § 120175.

[5] Brito, et al., *Pathology and pathogeneisis of human leptospirosis: a commented review*, Rev Inst Med Trop Sao Paulo (May 28, 208), https://pmc.ncbi.nlm.nih.gov/articles/PMC5975557/.

[6] *Id.*

[7] U.S. Centers for Disease Control and Prevention: Leptospirosis (Aug. 8, 2025), https://www.cdc.gov/leptospirosis/about/index.html.

[8] *Id.*

[9] U.S. Centers for Disease Control and Prevention, Leptospirosis Fact Sheet for Clinicians (Jan. 30, 2018), https://www.cdc.gov/leptospirosis/pdf/fs-leptospirosis-clinicians-eng-508.pdf.

progress to kidney damage, meningitis (inflammation of the membrane around the brain and spinal cord), liver failure, trouble breathing, and even death.[10]

6. Lepto is very dangerous for pregnant women and their fetuses.[11] It is my understanding that the City is aware of at least one pregnant person residing recently in the Harrison Street encampment, placing them and their fetus at particular risk for serious harm.

7. Lepto symptoms in dogs include excessive thirst, vomiting, shivering, and lethargy and can progress to liver failure if untreated. Lepto can also be fatal to dogs.[12]

8. There is a Lepto vaccine available for dogs, but not for humans.

9. It is important to note that Leptospirosis is considered a "neglected tropical disease" which is prevalent in underdeveloped tropical countries and associated with insufficient sanitation and barriers to access health care.[13] Leptospirosis is rare in developed countries. As such it is rarely seen by clinicians practicing in the US as this lethal disease is known to have very low prevalence in the US. The exception is homeless encampments in the US which are considered high risk for rat infestations and associated Lepto outbreaks in rats.[14] The rats are a vector for contagion and can potentially spread the Lepto disease through their urine and body fluids and via unsanitary accumulations of water and mud to humans, dogs and other animals living in the encampment or passing nearby the areas around the encampment. The contagion can also be transmitted in bodies of water containing the urine and body fluids of infected animals. Of note there is a creek adjacent to the Harrison Street encampment called Codornices Creek.

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[10] U.S. Centers for Disease Control and Prevention: Leptospirosis, https://www.cdc.gov/leptospirosis/about/index.html.

[11] Selvarajah, Ran, Roberts, and Nair, *Leptospirosis in pregnancy: A systematic review*, PLOS Neglected Tropical Diseases (Sept. 14, 2021), https://journals.plos.org/plosntds/article?id=10.1371/journal.pntd.0009747.

[12] U.S. Centers for Disease Control and Prevention: Leptospirosis in Animals (Apr. 4, 2025), https://www.cdc.gov/leptospirosis/pets/index.html.

[13] Munoz-Zanzi, Dreyfus, Limothai, Foley, Srisawat, Picardeau, Haake, *Leptospirosis—Improving Healthcare Outcomes for a Neglected Tropical Disease*, Open Forum Infect. Dis. (Feb. 10, 2025), https://pmc.ncbi.nlm.nih.gov/articles/PMC11832045/.

[14] *See* Angela Nelson, *Urban Rats Spread Deadly Bacteria as They Migrate, Study Finds*, Tufts Now (May 5, 2025), https://now.tufts.edu/2025/05/05/urban-rats-spread-deadly-bacteria-they-migrate-study-finds.

10. For both dogs and humans, the best way to prevent contracting and spreading Lepto is to stay away from potential infection sources, particularly water or soil containing urine or body fluids from infected animals, especially rats.

11. Due to the known association between rats, insecure housing/encampments and Lepto[15], Alameda County Public Health has been testing rats associated geographically with encampments in Alameda County, including Berkeley, for the last five years. City of Berkeley Public Health jurisdiction has requested Alameda County Public Health jurisdiction to test the rats in Berkeley around encampments including Harrison Street. Alameda County Vector Control's 2024 annual report states that from 2020 through 2024, Leptospirosis was not detected in the 457 rats tested from County trap sites, including 71 rats tested in 2024 and 47 rats from Berkeley throughout the time period. A true and correct copy of an excerpt of the Alameda County Vector Control 2024 annual report is attached hereto as **Exhibit A**.

12. Due to a dog which lives in the Harrison Street encampment being sickened with Leptospirosis (see paragraph 13 below), a campaign to trap rats around the encampment and test them for Lepto was initiated by the PHO (myself) in partnership with Alameda County Vector Control in late 2025. All of the Winter 2025 samples from a subset of 40 rats captured at the Harrison Street encampment by Alameda County Vector Control tested positive for current or previous Leptospirosis infections among the rats tested, including a strain that can infect humans. This testing was done, as is standard, with pooled samples from rats. Samples from 15 of the rats were pooled such that the samples from three rats were combined into one pooled sample. This resulted in five samples which were sent to the Oregon State Public Health lab which specializes in Lepto testing. All five samples tested positive. This a significant change, from a prior history of no positive Lepto tests from rats, in Alameda County/Berkeley to a new finding of all submitted

[15] *See* Sykes, et al., *A global one health perspective on leptospirosis in humans and animals*, Journal of the American Veterinary Assoc. (Oct. 1, 2022), https://avmajournals.avma.org/view/journals/javma/260/13/javma.22.06.0258.xml ("The growth of homeless encampments in association with the pandemic; the close proximity between rodents, dogs, and humans in these encampments; increased environmental contamination by pathogenic leptospires in association with climate change–associated flooding events; and the similar clinical manifestations between COVID-19 and leptospirosis present a 'perfect storm' for unrecognized outbreaks of leptospirosis in developed countries such as the United States.")

tests being positive from one location at one point in time is alarming and possibly represents a new presence of Leptospirosis in rats in Berkeley associated with the Harrison Street encampment environment. This finding of Leptospirosis infection in rats poses possible imminent danger of serious illness and even death to the humans and dogs and other animals living in and around this encampment.

13. At least one puppy (five months old) living at the encampment, and owned by one of the residents of the encampment who breeds dogs, was confirmed in early December 2025 as having been infected with Leptospirosis. This dog was taken to the Berkeley Animal Shelter where it was seriously ill but has since recovered. The dog tested positive for Lepto at the animal shelter. The report to the PHO of this sickened dog, led me to request that Alameda County Vector Control and City of Berkeley Environmental Health initiate an investigation into the source of Lepto contagion at the Harrison Street encampment. This investigation included the trapping and testing of 40 rats for Lepto at the Harrison Street encampment starting in December 2025 (described in paragraph 12 above).

14. Another 5-month-old dog is strongly suspected to have died from Lepto, because it was known to have the same owner, and be a litter mate (also five months old), and was sick around the same time as the confirmed canine case. This dog was taken to a private veterinarian and euthanized due to being critically ill and with signs of Lepto such as liver failure; however, it was not tested for Lepto.

15. Since 2024 there have been other confirmed and suspected cases of Lepto in dogs in and around the Harrison Street encampment. These earlier cases occurred before any positive findings of Lepto in rats associated with the encampment had been made. I started in my role as PHO in April 2025, and therefore my historical knowledge about the sickened dogs from prior to April is dependent on review of email correspondence primarily. The five-month-old dogs described above were sickened when I was established in my role and thus all information about these cases is from direct experience and communications with me. It is my opinion that it is highly likely that the burden of Lepto disease among rats has possibly risen to such a high level in the encampment since 2024, and that more cases of dog Lepto (infected by the rat urine or contact

with bodily fluid) could be present. These new dog cases would likely not be detected unless widespread testing was performed on all the dogs in the encampment.

16. Although transmission of Lepto from dogs to humans is unlikely, the presence of Lepto in dogs at the encampment demonstrates the imminent risk present to human health because the method of transmission from infected rats to humans is essentially the same as for dogs (*i.e.*, exposure to rat urine, or contaminated soil or water).

17. I recently inspected the encampment, looking for signs of risk for continued spread of Lepto in this area. I also discussed the conditions with the City of Berkeley Environmental Health Division. Conditions at the encampment include extensive, uncontained and long standing harborage of rats, presumably including in the encampment dwellings and vehicles themselves; standing water and mud in puddles throughout the encampment including around the dwellings which can spread the Lepto from infected animal urine and body fluids to humans; lack of containment of food which attracts and can feed rats and contribute to expansion of the rat vector for this contagion; lack of containment of dogs which might be asymptomatic or mildly symptomatic and infected with Lepto and spread the contagion; and an adjacent creek which may be used for bathing and spread the contagion given there is no clean running water at the encampment to bathe in regularly. Of note, on the opposite shore of the creek, there is a large University of California housing complex for families, and the creek itself has a park and bike path that runs along it with the possibility of wild animals (such as racoons), people and their pets being exposed to the water in the creek which could be contaminated with Leptospirosis. The spread of Lepto from infected animals would be through their urine or body fluids into water. As the rats and dogs are uncontained, there is risk to the public beyond the confines of the area of the encampment. Lepto can spread to other animals (including neighbors' pets) that are exposed to infected urine containing water and encampment human residents as well as neighbors and passers-by if they are exposed to the infected urine. For example, if a person was walking through a puddle infected with Lepto and they have a cut on their foot and are wearing open-toed shoes, they could be potentially infected. Given the low prevalence of Lepto in the US, an infected person might not be tested for Lepto if they presented sick to a clinician, and their diagnosis could

go untested and untreated.

18. The water in the creek has not yet been tested for the presence of Lepto; however, the presence of Lepto so close to the creek means that there is also a significant risk of the disease spreading to the creek and wildlife if the nearby infected rodent population is not controlled.

19. Lepto is found throughout the world, particularly among marginalized communities that do not have access to indoor and refrigerated food storage, running water, and indoor plumbing. This describes the conditions in the Harrison Corridor as well.

20. Temporary sanitation/hygiene services like port-a-potties and outdoor washing stations would not have prevented the current situation because they would not have prevented the prevalence of rats. Additionally, such services would be ineffective to address the current occurrence of Leptospirosis.

21. In order to remove the risk of further spread of rat borne Lepto, the entire encampment (tents, structures, vehicles) must be removed to allow for complete eradication of rodent burrows.

a. Vehicles—especially RVs that stay in one place for a long time—are attractive rodent harborages, so cleaning around them is not sufficient.

b. People should be instructed not to re-encamp within 1/3 mile because rats can travel and will travel to a new encampment site with similar unsanitary conditions including lack of proper food storage. Studies of Lepto spread via rat vectors support that rats can travel 1/3 of a mile from the epicenter of rat outbreaks.[16]

c. Cleanup will take at least 30 days because that is how long Lepto can live in the soil. Additionally, eradication of rats requires many cycles of baiting the rats with poison in their underground burrows, removing the carcasses and rebaiting over a period of time.

22. The City of Berkeley Local Public Health Jurisdiction ("LHJ") intends to work with Alameda County LHJ and its community partners to contain this Lepto outbreak in rats, and possibly in dogs (which as of yet have not been tested other than those that were sick and dying), and to protect the public. There is a high level and urgent public health concern for the health of

[16] Stone, et al., *Host population dynamics influence Leptospira spp. transmission patterns among Rattus norvegicus in Boston, Massachusetts, US*, PLOS Neglected Tropical Diseases (Apr. 15, 2025), https://journals.plos.org/plosntds/article?id=10.1371/journal.pntd.0012966.

the people living in and around the Harrison Street encampment as they are at risk for being infected with Leptospirosis, which is a potentially deadly disease. To protect the people living in the encampment, they must leave that environment permanently because the eradication cannot be done if the encampment is there, including the dwellings and vehicles which harbor the rats. Alameda County Vector Control has reported to me that from prior experience, when rat abatement is done at an encampment and residents return to the encampment environment, the rats also return. With the high burden of Lepto disease in this population of rats at the Harrison Street encampment (as proven by the recent testing), it is unsafe to allow this rat population to reemerge after eradication efforts. To track outcomes, ongoing trapping and testing of rats is underway now and will continue on indefinitely into the future with the goal of ultimately containing this apparent surge in Lepto infection in rats, and possibly dogs. Of note, the encampment is not only within 1/3-mile proximity to a creek but also to a business district with restaurants, a brewery, and an urban community farm. Thus, if this outbreak is not contained, the risk to human life and other animal life could be substantial and widespread.

23. At this time, only animals have been confirmed to be infected with Lepto in and around Harrison Street. The absence of confirmed human cases is reassuring but does not remove the risk of undiagnosed cases or future cases. If a human case were confirmed, that would elevate the urgency of the recommended response to protect human life and other animal life in the City of Berkeley.

24. The current injunction in the matter *Berkeley Homeless Union v. City of Berkeley* prevents the City of Berkeley from implementing fully effective eradication efforts for the Lepto rat outbreak at the Harrison Street encampment. As a result, the City is using alternative means to protect the health of the people and animals living in the encampment and those passing by. For example, Alameda County Vector Control has posted informational flyers, and the Health Care for the Homeless Street Medicine Health team has been doing in person education and handing out flyers at the encampment warning about the health risks of Lepto. However, these alternatives cannot adequately address the risks to human health posed by the presence of Lepto in the Harrison Street encampment.

I declare under penalty of perjury that the foregoing is true and correct, and that this declaration was executed on January 6, 2026, in Berkeley, California.

Signed by:
FA1EC03C415F47C...

NOEMI DOOHAN, M.D., Ph.D., M.P.H.

# EXHIBIT A

ALAMEDA COUNTY
VECTOR CONTROL

# ANNUAL REPORT 2024

# Mission

The mission of the Vector Control Services District is to prevent the spread of vector-borne diseases, injury, and discomfort to the residents of the District by controlling insects, rodents, and other vectors and eliminating causal environmental conditions through education and integrated pest management practices.

# Introduction

This 2024 Annual Report for County Service Area (CSA) VC 1984-1 for Vector Control is presented to the Alameda County Board of Supervisors (BOS) in compliance with Section 25214 and 25215.3 of the Government Code; County Service Area Law Chapter 13.20, and California Health and Safety Code Section 116110-116180.


This report gives a history on how and why the County Service Area (CSA) (known as the Alameda County Vector Control Services District, or "the District") was formed, explains how the assessments are calculated, and includes assessment tables since the CSA was formed in 1984.

In addition, this report includes highlights from the District's field operations as well as a summary of disease surveillance activities and our public outreach program.

This report is available for public review at the Vector Control Services District, 1131 Harbor Bay Parkway, Suite 166, Alameda, CA 94502, and is also posted on our website at https://www.acvcsd.org.

**Among the 2024 highlights were the following:**

- The District received the highest number of calls for voles since record keeping started in 2006.
- The District saw a significant decline in skunk calls, receiving the lowest number since record keeping started in 2006.
- District staff responded to a highly unusual poultry bug infestation at a federal building in the City of Livermore.
- In June 2024, the District celebrated its 40-year anniversary.

# District Services

## Request for Service: Overview

- Conduct investigations in response to requests for service from the public for rodent, wildlife, and insect vectors of disease, assess environmental conditions for vector harborage and access, and recommend solutions to reduce vector activity and associated public health risks.
- Investigate reported public health and vermin problems related to rodents, cockroaches, flies, fleas, bed bugs, lice, stinging insects (yellowjackets and bees), ticks, mites, and spiders, and render or recommend the appropriate control services based on integrated pest management strategies.
- Provide insect, tick and spider identifications and recommend the least-toxic control strategies.
- Conduct surveys of rodents, insects, and arthropods of public health importance, and maintain a reference collection.
- Survey and control cockroaches in public sewers, utility boxes and storm drains.
- Conduct yellowjacket and bee control in public areas.

## Wildlife Management and Rabies: Case Investigation

- Conduct investigations of nuisance wildlife problems relating to bats, skunks, opossums, raccoons, turkeys, feral pigs, foxes, coyotes, dogs, cats, rabbits, and birds (especially pigeons).
- Trap nuisance animals when preventive alternatives or exclusion practices are not possible or unlikely to be effective.
- Work in coordination with local animal control agencies and the Alameda County Public Health Department to monitor and test wildlife (bats, skunks, opossums, cats, etc.) for rabies and submit an annual report to the California Department of Public Health.

## Rodent Control

- Provide recommendations for rodent proofing and population control in homes, neighborhoods, open areas, and businesses.
- Conduct rodent suppression during vector-borne disease outbreaks, public health emergencies, or when residents are experiencing a public health risk from rodents and their ectoparasites.
- Conduct surveys of rat populations to assess species abundance, distribution, and disease-carrying potentials.
- Conduct inspections and rodenticide baiting of sanitary sewers for rats within the City of Oakland.
- Inspect and test sewer laterals and mains to detect breaks, which may provide an egress for rats to move into adjacent neighborhoods.

## Solid Waste Problems

- Investigate complaints regarding solid waste involving garbage, human or animal wastes, and odors at residential properties and businesses. These issues often attract or harbor rodent and wildlife vectors.

## Vector-Borne Disease Surveillance and Control

- Investigate reports of animal or human cases of disease such as Lyme disease, Psittacosis, Plague, Hantavirus (HCPS), Flea-borne Typhus, Tick Relapsing Fever, Chagas disease, Reptilian salmonellosis, Ehrlichiosis, Anaplasmosis, and Rabies to determine cause, incidence, distribution, and appropriate prevention and remediation measures.

- Assist the public with tick identification and submissions of ticks to laboratories for Lyme disease testing.

- Collect rodent ectoparasites and determine Plague potential (or other vector-borne disease transmission potentials) and implement rodent suppression and ectoparasite elimination strategies as required.

## Public Education and Information

- Provide educational presentations to schools, civic groups, property managements, homeowner associations and the general public.

- Disseminate educational materials on vector-borne diseases to residents and interested groups.

- Engage with the public through interactive outreach booths at local health fairs, special events, and the Alameda County Fair.

- Post annual shellfish harvesting quarantine notices at the Alameda County bay shoreline.

- Maintain a current, informative, and interactive web site.

- Provide timely and informative media releases on vector control issues.

## Legal Enforcement

- Provide assistance to local code enforcement agencies to enforce state laws, regulations, and local ordinances related to rodent, wildlife, or insect vectors that pose a threat to public health and safety.

| Date | Site | Specific Location | Species | Number Tested | Result |
|---|---|---|---|---|---|
| 3/28 | Brushy Peak Regional Preserve | Brushy Peak Regional Preserve | *Reithrodontomus megalotis* (Harvest Mouse)<br>*Peromyscus maniculatus* (Deer mouse)<br>*Mus musculus* (House Mouse) | 13<br>14<br>2 | Negative<br>Negative<br>Negative |
| 6/18 | Pleasanton | Mission Hills | *M. californicus* (California Vole)<br>*P. maniculatus* | 10<br>2 | Negative<br>Negative |
| 6/18 | Livermore | Sycamore Grove | *M. californicus* | 20 | Negative |
| 7/18 | Livermore | Livermore Wetlands Preserve | *M. californicus*<br>*P. maniculatus* | 26<br>10 | Negative<br>Negative |
| 8/7 | Brushy Peak Regional Preserve | Brushy Peak Regional Preserve | *P. maniculatus*<br>*M. californicus* | 16<br>7 | Negative<br>Negative |
| 9/17 | Brushy Peak Regional Preserve | Brushy Peak Regional Preserve | *P. maniculatus*<br>*M. californicus* | 3<br>1 | Negative<br>Negative |

*Table 2. Hantavirus Surveillance 2024*

## Seoul Virus Surveillance

Seoul virus belongs to the Hantavirus family of rodent borne viruses. This family also includes Sin Nombre virus, which is the most common hantavirus in the United States. Seoul virus is transmitted from rats to humans after exposure to aerosolized urine, droppings, or saliva of infected rodents, or after exposure to dust from their nests or bedding. This virus has been found in both pet rat and wild rat populations around the world. The natural hosts for Seoul virus are the Norway rat (*Rattus norvegicus*) and the roof rat (*Rattus rattus*). Seoul virus cases have been reported in patients with exposure to wild rats in Texas, Maryland, and Washington DC. In 2017, the United States Center for Disease Control and Prevention (CDC) conducted a multistate outbreak investigation after the confirmation of Seoul virus infections in people and pet rats in the states of Wisconsin and Illinois. The symptoms and signs of Seoul virus infection are not specific, but may include fever, headache, nausea, joint pain, cough, and a mild to moderate form of hemorrhagic fever with renal syndrome.

In 2019, the District began collecting rat blood samples as a part of our Seoul virus surveillance program. From 2019-2023, a total of 960 Norway and roof rat blood samples have been tested serologically by our lab or submitted to the CDC recommended diagnostic lab to test for Seoul virus. Due to a shortage of resources, Seoul virus surveillance was suspended in 2024. To date, we have not had any rat blood samples test positive for Seoul virus infection.

## Leptospirosis Surveillance

Leptospirosis is the most widespread zoonosis in the world and is most common in temperate and tropical zones. It is caused by a bacterium that is spread through the urine of infected animals, which can get into water and soil where it can survive for weeks to months at a time. Various domestic and wild animals can carry the bacteria and excrete it for months to several years. Dogs are the most infected domestic animal. Humans can become infected through contact with urine, or other bodily fluids (except saliva) from infected animals or contact with soil, water or food that has been contaminated with the urine from infected animals. People most at risk are those that work outdoors or with animals.

Symptoms in humans range from mild to severe, with most cases going unnoticed. Leptospirosis was reinstated as a nationally notifiable disease by the CDC in 2013.

The District began screening blood serum of rats for Leptospirosis in 2020 using a commercially available test kit. In 2024, a total of 67 Norway rats and 4 roof rats from seven cities in the County were tested for infection and none of the blood samples were positive for Leptospira. To date, Leptospira has not been detected in the 457 rats tested from County trap sites (Table 3).

| City | # of Rats Tested | Species |
|---|---|---|
| Alameda | 26 | Norway & Roof Rat |
| Albany | 10 | Norway Rat |
| Berkeley | 47 | Norway Rat |
| Oakland | 329 | Norway Rat & Roof Rat |
| San Leandro | 1 | Norway Rat |
| Fremont | 20 | Norway & Roof Rat |
| Livermore | 5 | Roof Rat & Roof Rat |
| Pleasanton | 3 | Roof Rat |
| Union City | 13 | Roof Rat |
| Emeryville | 3 | Norway Rat |

*Table 3. Summary of 2020-2024 Leptospirosis testing*

## Plague Surveillance

Plague is a bacterial disease associated with certain rodents, other small mammals, and their fleas. It is famously known as the "black death" and was responsible for killing millions throughout Europe during the Middle Ages. The bacteria that cause this disease – *Yersinia pestis* – can currently be found in parts of Africa, Asia, and the Western United States. However, prior to its introduction this pathogen was not present in the US. It is believed that it was introduced to the West Coast from rat-infested ships arriving to San Francisco from China in 1900. Within 2-3 years, over 100 known plague cases were reported in San Francisco and by 1909 plague was detected in Alameda County in rats, ground squirrels, and humans. By 1910, plague had spread to eight California counties. Over the decades surveillance and detection of plague in Alameda County has been sporadic and minimal. It was last found in 1981 in the eastern part of the County when a ground squirrel and two coyotes tested positive. In 2023, in conjunction with the California Department of Public Health, District staff conducted plague surveillance in small mammals for the first time in decades. In total, five ground squirrels and 20 *Peromyscus* mice were trapped and tested. All samples were negative for plague. There are plans to resume plague surveillance soon.

## West Nile Virus Surveillance

Our District has been assisting with monitoring for the presence and spread of West Nile Virus in Alameda County for many years. Initially this program consisted of testing live mosquitoes, dead birds, and sentinel chickens. Currently, the District maintains a sentinel chicken flock as part of its disease surveillance program for both avian and mosquito-borne diseases. This program is implemented in conjunction with the California Department of Public Health's (CDPH) Vector Borne Disease Section. In 2024, one of the sentinel chickens at the District's flock in the City of Livermore tested positive for the West Nile Virus. CDPH and Alameda County Mosquito Abatement District used this data to help inform their West Nile Virus programs and responses.

ALAMEDA COUNTY
VECTOR CONTROL

1131 Harbor Bay Parkway, Ste. 166
Alameda, CA 94502 • (510) 567-6800 • www.acvcsd.org

Alameda County Environmental Health Department

**Leptospirosis Resources for Encampments near Harrison Street**
**City of Berkeley**

Numerous rats and at least 2 dogs in and near Harrison Street encampments tested positive for Leptospirosis – a treatable disease that can have severe and potentially fatal impacts to people and dogs who are exposed to contaminated water.

**How Leptospirosis spreads:** This aggressive bacteria exists in the urine of infected rats and stays alive for 30 days or more in water and mud. People or animals who touch or drink contaminated water or mud are potentially exposed to the bacteria. The risk of disease is present if the contaminated water touches mucous membranes – such as eyes, nose, mouth or skin cuts.

**Symptoms and prevention:** The rats have made conditions unsafe for encampments in the area bounded by San Pablo Avenue, Gilman Street, Codornices Creek and the railroad tracks.

The City's Health Officer strongly recommends that encampment residents move out of the defined area and least 1/3 of a mile away. Moving away significantly reduces risks to you and your dogs while also allowing the City to address the rat population.

For your safety, strive to avoid taking muddy or wet possessions as they might be contaminated. Or wash them yourself using a 10:1 mixture of clean water and bleach.

Seek care from a provider (see back of this flyer) if you have any concerns. You should see a provider if you have been living in the encampments in this area and you are sick or have these flu-like symptoms:

- Fever - Chills - Headache - Red eyes - Sore muscles

Encampment residents should take these actions however possible:

- wear protective clothing
- cover scratches or cuts with waterproof bandages
- Wash or shower after potential exposure
- Clean your wounds
- Don't touch sick or dead animals
- Consume clear, clean, drinking water

**Care, treatment and vaccine for Dogs:** Leptospirosis has killed at least 2 dogs in the encampments. Encampment residents with dogs should seek veterinary care for pet symptoms that include: fever; vomiting; jaundice; or urine that's abnormally colored or excessive in quantity.

There is effective vaccination for dogs. Come the morning of January 13 to get a vaccination voucher for your dog. (See back side for more resources.)

Date Finalized: 1/12/26

**Leptospirosis Resources for Encampments near Harrison Street**
**City of Berkeley**

Neither dogs nor people should wade in – or drink from – nearby water, mud, puddles, or Codornices Creek. Provide clean water for your pets, and keep them away from sick or dead animals.

## Leptospirosis Outreach Day: Testing, Screening & Resources Clinic

January 13, 2026
9am – 1pm
Harrison Street between 6th and 7th streets

Resources will include:

- general information and education
- distribution of a health kit
- Assessments for possible shelter
- Health screenings
- Substance abuse and mental health support
- Information, vaccine vouchers and resources to keep your pets safe

## Where to go for Medical Care

**If you have severe symptoms (shortness of breath/difficulty breathing, chest pain etc):**

- call 911 or go to the nearest emergency room immediately.

**If you have an unexplained fever or flu-like illness and think you were exposed to contaminated water or soil, seek care as soon as possible using these options:**

- **If you have a Primary Care Provider:**
  Call the doctor listed on your Medi-Cal card first for an urgent appointment.

- **If you do not have Primary Care Provider or are a LifeLong Patient**:
  Call: Lifelong Trust Clinic: (510) 981-4100 **OR**
  Visit during Drop-in Hours:
  Monday-Friday 8:30am -4:30pm, except Tuesday when hours are 10:00am-4:30pm
  830 University Ave, Berkeley, CA

## For dog owners – Where to go for Veterinary Care

East Bay SPCA (reduced rates for low-income clients)8323 Baldwin Street, Oakland, CA 94621
Phone 510-569-1606; clinic@eastbayspca.org
Monday – Friday, 7:30 a.m.–5 p.m. (by appointment only)

Date Finalized: 1/12/26

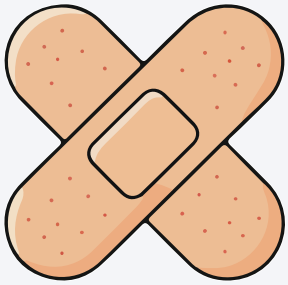
CITY OF BERKELEY
HEALTH, HOUSING, AND COMMUNITY SERVICES

# Leptospirosis: Recommendations for the general public in northwest Berkeley

## Guidance for people with access to indoor shelter, running water, secure garbage and safe food storage who also live or work in the area generally bounded by Codornices Creek, Gilman Street, San Pablo Avenue and the railroad tracks

**Leptospirosis is a sickness caused by bacteria that lives in water that can spread to people and dogs. You can get it from water, dirt, or food that infected by the urine of infected rats or dogs**

Wear protective clothing



Cover scratches or cuts with waterproof bandages

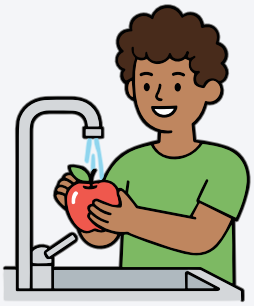
Don't wade or swim in potentially contaminated water

Wash or shower after potential exposure

Clean your wounds

Don't touch sick or dead animals

Consume clear, clean, drinking-water



Wash fruits and vegetables picked from gardens or farms in this area

**Leptospirosis is treatable. The disease is transmitted to humans and animals when the contaminated water touches mucous membranes – such as eyes, nose, mouth, or cuts to the skin. Most people have no symptoms. However, if you think you were exposed in this area and have flu-like symptoms – fever, chills, headache, red eyes, and muscle aches – contact your primary care provider, such as the one listed on your Medi-Cal card for an urgent appointment.**

**If you do not have a medical provider, contact Lifelong Trust Health Center for screening and treatment**
**830 University Ave., Berkeley, CA 94710**

**Berkeley Public Health Leptospirosis voicemail to leave tips, questions: 510.981.5460, leptoinformation@berkeleyca.gov**

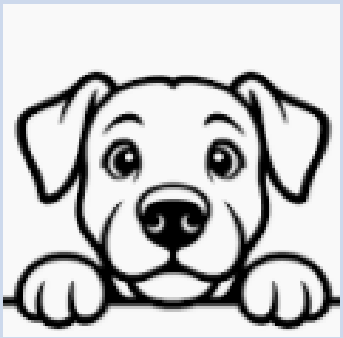
Leptospirosis

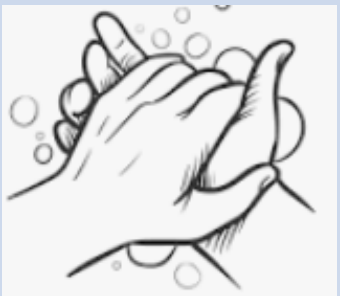
# Pet Owner Safety Guide

**LEPTOSPIROSIS IS A DISEASE THAT SPREADS FROM ANIMALS TO PEOPLE. RISK IS HIGHER IN BERKELEY NOW BECAUSE OF WILDLIFE AND RAIN.**

## PREVENT THE SPREAD

- WASH HANDS AFTER TOUCHING PETS OR THEIR THINGS.
- NO FACE LICKING.
- USE ANTIBACTERIAL SPRAYS OR WIPES.
- SUNLIGHT KILLS GERMS—KEEP LIVING SPACE CLEAR OF WET DEBRIS.





- VACCINATE DOGS (4-WAY LEPTO).
- CONTROL RODENTS—SEAL TRASH, REMOVE FOOD BOWLS.
- GIVE FRESH WATER ONLY—NO PUDDLES OR CREEKS.

## IF YOUR PET HAS LEPTO

- GIVE ALL MEDICINE AS PRESCRIBED.
- WEAR GLOVES WHEN CLEANING PEE.
- PICK A SUNNY POTTY SPOT AWAY FROM GARDENS AND PUDDLES.
- NO POWER WASHING—USE GENTLE RINSE AFTER DISINFECTING.
- WASH BEDDING IN HOT WATER WITH DETERGENT AND BLEACH.
- IF PREGNANT OR IMMUNOCOMPROMISED, AVOID CLEANING UP AFTER A SICK PET FOR 2 WEEKS.

**Stay Safe. Protect Your Pets. Protect Your Family.**