

Interim Guidance for Dog or Cat Quarantine after Exposure to a Human with Confirmed Ebola Virus Disease

Released November 10, 2014

American Veterinary Medical Association (AVMA) Ebola Companion Animal Response Plan Working Group:

Casey Barton Behravesh MS, DVM, DrPH, DACVPM, Centers for Disease Control and Prevention (chair); Derron A. Alves, DVM, DACVP, Veterinary Services, Defense Health Agency; Gary Balsamo, DVM, MPH, National Association of State Public Health Veterinarians and State Public Health Veterinarian and Louisiana Department of Health and Hospitals; Tammy Beckham, DVM, PhD, Texas A&M University System; Susan Culp, DVM, Texas Animal Health Commission; Thomas M. Gomez, DVM, MS, US Department of Agriculture/Animal and Plant Health Inspection Service/Veterinary Services; Holly Hughes-Garza, DVM, Texas Animal Health Commission; Barbara Knust, DVM, MPH, DACVPM, Centers for Disease Control and Prevention; John Poe, DVM, MPH, Kentucky Department for Public Health; John P. Sanders, Jr., DVM, DACVPM, US Department of Homeland Security; Thomas Sidwa, DVM, MPH, Texas Department of State Health Services; Jessica Spengler, DVM, PhD, MPH, Centers for Disease Control and Prevention; Shelley Stonecipher, DVM, MPH, DACVPM, Texas Department of State Health Services; J. Scott Weese, DVM, DVSc, DACVIM, University of Guelph; Kyoungjin J. Yoon, DVM, MS, PhD, DACVM, Iowa State University.

AVMA Staff: Cheryl L. Eia, JD, DVM, MPH; Sharon Granskog; Kristi Henderson, DVM; Christine Hoang DVM, MPH, CPH; Kendall Houlihan, DVM; Kimberly A. May, DVM, MS; Amy Miller.

Disclaimer: This interim guidance document was developed by the AVMA Ebola Companion Animal Response Plan Working Group which is made up of a variety of experts representing multiple agencies and organizations. The information and recommendations in this document are those of the Working Group and do not necessarily represent the official position of the AVMA or the agencies and organizations with which Working Group members are affiliated. Because limited scientific data on Ebola Virus Disease (Ebola) and companion animals are currently available, this guidance was developed in part by extrapolating scientific information from other species including humans and non-human primates (e.g., apes, monkeys). This document contains basic guidelines that should be considered by state animal and human health officials. Local or state jurisdictions may require additional criteria in a specific situation. Information in this interim guidance is subject to change, and additional guidance may be released as new information becomes available.

Contact: Questions regarding animals and Ebola virus or about this guidance may be directed to the CDC Ebola Animal-Human Interface Team (eocevent92@cdc.gov) or by calling the CDC Emergency Operations Center at 770-488-7100 (24/7).

Purpose

This interim guidance document was developed by the AVMA Ebola Companion Animal Response Plan Working Group for local and state animal health and public health officials to facilitate preparation of state response plans. The intent of this interim guidance is to provide guidance for companion animals, specifically dogs and cats with exposure to a person with Ebola, based on the latest scientific evidence and recommendations from national organizations. This interim guidance describes the process for conducting a risk assessment for exposure of dogs or cats that had contact with a human with laboratory-confirmed evidence of Ebola, and it describes how to implement quarantine of dogs or cats if deemed appropriate by state and federal human and animal health officials.

Background

The ongoing [Ebola outbreak in West Africa](#) has raised questions about how Ebola affects animals. The natural host of Ebola virus or other related species in the genus *Ebolavirus* is thought to be fruit bats. At this time, only certain mammals (for example, humans, monkeys, and apes) are known to become infected with Ebola virus. In addition to humans, Ebola virus or viral RNA in Africa has only been detected in bats, nonhuman primates, and forest duikers (an African antelope).

At this time, there have been no reports of dogs or cats becoming sick with Ebola or of being able to spread Ebola to people or animals including in areas in Africa where Ebola is present. One study of dogs in communities in Africa where an Ebola virus outbreak was underway found antibodies to Ebola virus, but virus RNA was not detected, nor were any clinical signs of disease observed (Allela et al., 2005). Antibody evidence of previous infection was not surprising, it was reported that some dogs scavenged animal carcasses that had potentially died of Ebola or had direct contact with infected humans. There is no evidence of active infection in dogs, and to date, Ebola virus has not been isolated from dogs. Antibodies to the virus have been detected in dogs known to have high risk exposure to the virus in nature. Clinical disease has never been reported in dogs. Altogether, this suggests that dogs exposed to high quantities of virus can be infected, but the infection is likely transient and non-productive. It is not known whether an animal's body, feet, or fur can act as a carrier to transmit Ebola to people or other animals. In the current epidemic and in previous Ebola outbreaks, exposure to dogs is not a risk factor for human infections.

The situation with dogs in Africa is very different from that of a companion animal in the United States. At this time due to the very low number of people with Ebola in the US, the overall likelihood of a dog or cat being exposed to Ebola is very low. Exposure requires contact with blood or body fluids of a person with Ebola while the person is symptomatic. As a result, it is recommended to keep all animals away from blood or body fluids of a person who may have Ebola (based on [symptoms and epidemiologic risks](#)) in order to avoid possible risk to the pet or the need to place a pet into quarantine.

Protocol to Assess Whether Quarantine is Necessary for a Pet that had Contact with a Confirmed Ebola Patient

If a person with a confirmed Ebola infection had contact with a pet, either in the patient's home or elsewhere, a rapid risk assessment will need to be conducted in collaboration with human and animal health officials to determine how to handle the pet(s) and whether quarantine of the pet is warranted. To facilitate the risk assessment, local or state public health officials should collect the information outlined below. Once the information is collected, a consultation will be made between the relevant state and local public and animal health authorities and CDC to determine if the animal has had a possible risk of exposure to Ebola and whether quarantine is warranted.

Additional guidance is available for public health officials on pets of Ebola virus disease contacts (See separate document titled "Interim Guidance for Public Health Officials on Pets of Ebola Virus Disease Contacts").

A state health official should contact the CDC Ebola Animal-Human Interface Team by email (eocevent92@cdc.gov) or by calling the Emergency Operations Center at 770-488-7100 (available 24/7). If the animal in question is a species other than a dog or cat, it is not covered by this guidance. The situation will be handled on a case-by-case basis, in collaboration with local, state, and federal human and animal health officials.

Information to Collect for Risk Assessment

A public health veterinarian in collaboration with public health officials should collect the information on identification and medical history of the pet, assessment of risk of exposure and infection, and assessment of contacts of the pet with other animals and people.

Identification and Medical History

Information should be collected on standard identification of the pet and its relevant medical history, including the following:

- Identifying information on the pet.
 - Species (i.e., dog, cat)
 - Breed
 - Sex and Spay/Neuter status
 - Age
 - Markings (Take multiple photos of the animal to capture markings and unique identifiers)
 - Other identifying characteristics
 - Microchip or tattoo number (if present, collect number)
- Contact information for alternative decision maker on pet(s) in the event the owner is unavailable to make decisions.
- Information on history of the animal that might be needed to help with decisions in the event quarantine is warranted.
 - Vaccination history, most importantly rabies vaccination details
 - Medical history/need for medications

- Diet, including brand, type, variety of pet food
- Any other information specifically required by the state/jurisdiction where the animal is located or to be confined.

Assessment of Risk Exposure and Infection

Information should be collected to help evaluate the pet's history of exposure to the patient with Ebola and possible risks of acquiring Ebola due to these exposures, including the following:

- Types of contact and interactions with a human Ebola patient; questions should be asked for the time period since the Ebola patient's symptoms began.
 - Exposure to blood or body fluids of human Ebola patient (including, but not limited to, urine, saliva, sweat, feces, and vomit); this includes licking, consuming, or walking through any of these fluids
 - Sitting in the lap of patient
 - Being cuddled or kissed by patient
 - Licking the patient, including the face or mouth
 - Sleeping in the same bed as the patient
 - Sharing food with the patient
 - Any other types of contact or interactions with the Ebola patient
- Clinical history of the pet to determine if any signs or symptoms may cause concerns for health monitoring during quarantine.
 - Recent history of decreased appetite, fever, vomiting, diarrhea, lethargy, (or other signs or symptoms) since the onset of the Ebola patient's symptoms
 - Medical history in the last year, including history of gastrointestinal illness or bleeding disorders
- Presence of other humans or animals in the household (If other animals present, conduct a risk assessment for each animal).
- Travel history of the pet, particularly outside of the U.S.
- Any additional information that might be helpful to evaluate the pet's history of exposure to the patient and the pet's interactions with other humans or animals in the household.

Assessment of the Pet's Activities

Information should be collected to help assess potential contact with other humans and animals following exposure to the symptomatic Ebola patient. This information should also be used to help develop any potentially necessary risk communication messages to areas where the pet may have visited.

- Collect information on timing and nature of interactions; questions should be asked for the time period since the Ebola patient's symptoms began.
 - Walks
 - Visits to dog parks
 - Visits to groomer
 - Visits to animal clinic
 - Is this a working animal (military dog, therapy, assistance, service)?
 - Other outings

- Any additional information that might be helpful to evaluate potential contacts of this pet with other humans or animals.

Guidance for the Quarantine of a Pet

In the event that quarantine is required, a local or state public or animal health official should be designated as the point of contact (henceforth called “designated official”) during the quarantine of the pet. In humans, transmission of Ebola virus within the first 48 hours of onset of symptoms is believed to be less likely than in later stages of disease. Human patients with Ebola should be isolated from people and animals at onset of symptoms, in consultation with local or state health departments. Animal exposure will be assessed based on nature of interactions and symptom onset of human Ebola patient.

In the event that quarantine of a pet is indicated because of contact with a confirmed Ebola patient, the following minimum criteria should be met:

Transportation of Pet to Quarantine Facility

- Any animal handlers should be appropriately trained on and fitted for personal protective equipment (PPE).
- Individual(s) removing animal from home must follow PPE guidance for caretakers listed below.
- Collar, clothing, etc., should be removed from the animal so all possibly contaminated objects are left in the home.
- Only the animal is to be removed from premises. Do not bring food, dishes, crate, bedding, toys, or other pet items from the home since these items could be contaminated.
- A barrier (i.e., temporary fence) should be in place around the exit of the home to prevent escape of the animal during crating process.
- Put new collar on pet, preferably after it is removed from premises.
- Place animal in new crate once removed from the home.
- Transport in vehicle with back area closed off from driver.
- Lock crate securely to ensure that animal does not escape during transportation.
- Remove PPE after animal is placed into transport vehicle; use hand hygiene (hand washing preferred over hand sanitizer if hands are visibly soiled) after PPE is removed.
- Clean and disinfect vehicle after arrival at quarantine facility. (See Additional Resources).
- Consider having Animal Control on site for advice in the event the animal is difficult to capture.

Criteria for Quarantine Facility or Enclosure

- Minimum of two physical containment levels (i.e., crate/kennel housed in secured facility).

- Secure primary enclosure (for example, a kennel or crate) to prevent escape (for example, no climbing over or digging out) and approved by the designated official.
- Facility should:
 - Exclude access by other animals (domestic or wild) or unauthorized personnel
 - Allow animal to remain clean and dry
 - Protect animal from harm
 - Provide place for eating, drinking, urinating, and defecating
 - Enclosure guidance should consider space requirements in the Animal Welfare Act (AWA) regulations and allow animals to make normal postural adjustments
 - There should be free access to drinking water
 - The same brand, type, variety of pet food the animal typically eats should be obtained to feed the animal during the quarantine period in order to avoid gastrointestinal episodes that could confuse the clinical picture
- Quarantine may be subject to additional conditions specified by the designated official to protect the public health and animal welfare. While pets moved and confined due to Ebola may not be a regulatory issue, further guidance on transport and housing animals may be found in local, state, and Federal Animal Welfare Regulations.
- At the end of quarantine period, clean and disinfect the facility (See Additional Resources).

Criteria for Caretakers

- Be limited to as few individuals as possible (minimum of two, so a backup is available in the event the primary caretaker is not available).
- Have experience handling the appropriate animal species.
- Is required to be appropriately trained on and fitted for PPE.
- Wear PPE when caring for the animal, while in its enclosure, or when handling waste material.
 - PPE shall consist of, **at a minimum**
 - Double gloves, with outer glove taped to the suit with waterproof tape
 - Splash-resistant disposable hooded suit, with foot covers impervious to fluids
 - Eye protection (goggles or face shield)
 - Air purifying respirator (N-95 or equivalent level of protection)
 - Additional protective equipment might be required in certain situations (i.e., heavy duty or puncture-resistant outer gloves, head or neck protection if not sufficiently provided by the protective suit).
 - Follow other general guidance for putting on (donning) and taking off (doffing) PPE and hand hygiene. Taking off PPE is the step during which a responder is most likely to become contaminated, so training and attention to that process is critical.
 - Apply an alcohol-based hand sanitizer to gloves before removing PPE, and perform proper hand hygiene after removing each item of PPE and before

- leaving enclosure. A shower or other means of decontamination may be advisable depending on risk assessment and specific events.
- Maintain an animal caretaker log, including name, date, and time animal attended, and any notes on the animal's appearance or behavior.

Health Monitoring of Caretakers

- Caretaker should voluntarily self-monitor for fever twice daily.
- Report a fever (any elevated temperature) to designated official immediately.
- Report any symptoms of illness immediately to the designated official for further evaluation.

Health Monitoring of Dog or Cat

- Direct contact with the dog or cat's body fluids and waste must be avoided during the quarantine period.
- A veterinarian must be designated for the oversight of the dog or cat's care and quarantine.
 - The veterinarian will be appropriately trained on and fitted for PPE (as above) and wear PPE when caring for the animal, when in its enclosure or handling waste material (as above).
 - The veterinarian will be on call and available throughout the quarantine period.
- An exposed pet will be monitored, in collaboration with a public health veterinarian as outlined above for a minimum of 21 days following the last date of exposure to the symptomatic Ebola patient. This is a precaution based on what we know about the incubation period in humans for Ebola. The quarantine period may need to be extended based on the situation. There are no known clinical signs of Ebola infection or disease in dogs or cats.
 - The dog or cat should be monitored for general signs of illness.
 - Other potential signs of illness, including decreased appetite, lethargy, vomiting, and diarrhea should be closely monitored.
- During the quarantine period, the dog or cat's caretaker must monitor the pet's behavior and health status. Health status will be evaluated by observation unless apparent illness indicates the need for further assessment.
 - Only if the dog or cat appears to be ill, outside of its normal health status, use a digital thermometer with a probe cover to take a rectal temperature to monitor for fever (fever in dog or cat is >102.5 F).
 - The caretaker will immediately notify the designated veterinarian of any abnormalities in the dog or cat's health or behavior. The veterinarian will determine if the designated official should be notified.
 - If the dog or cat has a fever or other concerning signs or symptoms, contact the designated official immediately. The designated official will contact CDC

to discuss next steps. The CDC Ebola Animal-Human Interface Team can be reached via email at eocevent92@cdc.gov or by calling the CDC Emergency Operations Center at 770-488-7100 (24/7).

- Any required maintenance medicine during the quarantine period should be given in food/treats (e.g., in peanut butter) or other methods that do not require handling the dog or cat (no injections or physically giving medications orally).
- In the case of a dog or cat developing an unrelated condition, the situation would be addressed on a case-by-case basis, based on assessment by the designated veterinarian.
- Caretakers should report any bites or scratches to the designated veterinarian, who should in turn report to the designated official for consultation.
- Caretakers should provide daily updates to the designated official who will provide updates to the pet's owner.

Waste Disposal

- Primary containment (e.g. crate or kennel) should be cleaned at least once daily to remove waste. The dog or cat should be moved to another crate or kennel during the cleaning process.
- Avoid aerosol-generating procedures such as spraying floor to clean up pet waste.
- Pet waste and soiled pads/linens should be collected in a plastic biohazard bag that is secured in a rigid plastic tub. Reusable items, such as crate or kennel, should also be cleaned and disinfected prior to additional use.
- Transportation of feces, urine, and soiled linens or other potentially hazardous materials may be considered category A infectious substances and fall under the Department of Transportations (DOT's) hazardous materials regulation (HMR; 49 CFR, Parts 171-180). For Ebola-Associated Waste Management see: <http://www.cdc.gov/vhf/ebola/hcp/medical-waste-management.html>
- Individual(s) handling waste disposal should be trained to use PPE as outlined above and trained on how to securely handle potentially hazardous waste.
- At the end of the quarantine period, all linens, pet beds, and other textiles used in the quarantine facility must be discarded as medical waste.

Animal Testing for Ebola Virus

Currently, routine testing for Ebola is not available for pets. Ebola virus testing of animal samples will be limited to cases where testing is specifically warranted based on the type of exposure assessment in consultation with CDC on a case-by-case basis. No samples will be tested without pre-authorization from CDC. In the event that an animal has a confirmed positive RT-PCR for Ebola virus RNA, the animal should be euthanized and the body incinerated. For consultation on animal testing, contact the Ebola Animal-Human Interface Team (eocevent92@cdc.gov) or by calling the CDC Emergency Operations Center at 770-488-7100 (24/7).

Minimum Criteria to Release Pet from Quarantine

The pet will be considered releasable and able to move out of quarantine after all three criteria listed below are met:

1. A minimum of 21 days in quarantine.
2. ONLY if animal testing was pre-authorized by CDC, a confirmed negative test for Ebola virus based on all appropriate specimens.
3. Evaluation by the designated veterinarian to ensure the pet is healthy upon release or to determine the appropriate course of action for a pet exhibiting any signs of illness.

It is recommended, before release of a dog from quarantine, to bathe the dog so it will be clean when returned to the owner. This should be done after all testing results have been confirmed as negative for Ebola virus.

Selected Additional Resources as of November 9, 2014

Many of these additional resources address human Ebola patients and health care settings. Please contact the CDC Ebola Animal-Human Interface Team (eocevent92@cdc.gov) for questions specific to animals. You may also call the CDC Emergency Operations Center at 770-488-7100 (24/7) if the question is urgent.

- [CDC Ebola Website](#)
- [Questions and Answers about Ebola and Pets](#)
- [Ebola Virus Antibody Prevalence in Dogs and Human Risk](#) (Allela et al., 2005)
- [Foreign Animal Disease Preparedness & Response Plan Personal Protective Equipment \(PPE\) Guidelines](#)
- [Guidance on Personal Protective Equipment To Be Used by Healthcare Workers During Management of Patients with Ebola Virus Disease in U.S. Hospitals, Including Procedures for Putting On \(Donning\) and Removing \(Doffing\)](#)
- [Tightened Guidance for U.S. Healthcare Workers on Personal Protective Equipment for Ebola](#)
- [Ebola: Donning and Doffing of Personal Protective Equipment \(PPE\)](#)
- [Infection Prevention and Control Recommendations for Hospitalized Patients with Known or Suspected Ebola Virus Disease in U.S. Hospitals](#)
- [Safe Management of Patients with Ebola Virus Disease \(EVD\) in U.S. Hospitals](#)
- [Interim Guidance for Environmental Infection Control in Hospitals for Ebola Virus](#)
- [Ebola-Associated Waste Management](#)
- [EPA Disinfectants for Use Against the Ebola Virus](#)