



How to Keep Your Clinic and Patients Safe from Rabbit Hemorrhagic Disease

Rabbit Hemorrhagic Disease (RHD) is a non-enveloped calicivirus that is extremely contagious between rabbits of all ages. An outbreak caused by RHD virus serotype 2 (RHDV2) has been spreading in the western United States since March 2020 and is associated with high morbidity, with reported average mortality rates of about 60% (range 20 to 100%). It is spread by direct contact between rabbits and indirectly by fomites and mechanical transfer of virus by humans, dogs, rodents, and insects. RHDV2 is very persistent in the environment, remaining viable in carcasses for months through freeze/thaw cycles and in extreme heat. This reportable disease is not a public health threat, but can lead to large die-offs of rabbits. Its presence in California since May 2020 has been very worrisome to rabbit owners. It is a regulatory disease; report suspicious cases to CDFA within 2 days.

Clinical Presentation

The incubation period for RHD typically varies from 1 to 5 days but can be up to 9 days. Death is due to massive internal hemorrhaging and liver impairment. After onset of clinical signs, death commonly occurs within 6 to 36 hours.

Clinical signs you may see are:

- Sudden death (often without other signs)
- Lethargy or collapse
- Inappetence or anorexia (resembling gastrointestinal stasis)
- Fever (>104°F)
- Neurological signs may include dull mentation, prostration, ataxia, opisthotonos, paddling, convulsion, paralysis (vocalizations may also be present)
- Respiratory signs may include dyspnea, frothy blood-tinged discharge from nares and/or mouth, cyanotic mucous membranes
- Coagulopathy disorders such as diffuse petechiation, DIC, bleeding from nares/mouth/rectum
- Chronic or subclinical disease may be characterized by severe and generalized jaundice and weight-loss



Cleaning and Disinfection

Proper disinfection and sanitation are essential for protecting rabbits from RHDV2. It is recommended to schedule rabbit visits as far apart from one another as reasonably possible and to alternate rooms between rabbit patients. This allows for maximal time between rabbits occupying the same space and proper cleaning and disinfection. Dogs and cats may serve as fomites for RHD and exam rooms should be properly cleaned and disinfected *before* and *after* a rabbit patient visits the clinic. Few virions are needed for infection; thus, biosecurity practices are the best protection.

Approved disinfectants include:

- sodium hypochlorite (10% household bleach)
- 1% potassium peroxymonosulfate (Virkon™ S)
- 2% One-stroke Environ®
- accelerated hydrogen peroxide (Rescue™, Prevail™)

Refer to the following hyperlink for details on disinfectants:

https://www.aphis.usda.gov/animal_health/downloads/rhdv-cleaning-guidance.pdf

The following steps allow for proper cleaning and disinfection of equipment, cages, and exam rooms.

1. Remove all organic debris
 - a. Dirt, hair, feces, urine, and other grossly visible debris often inactivate most disinfectants
2. Wash the area/item with a soap or detergent and rinse with water
 - a. Thoroughly rinsing the cleaned area is important to remove soap/detergent residues, which can inactivate some disinfectants
3. Allow the area to air dry, completely

4. Choose an effective disinfectant and follow the instructions on the label regarding contact time and post-rinsing
 - a. Most disinfectants require a **10-minute contact time** for efficacy.
5. Residual disinfectant should be allowed to dry before being rinsed off.

Examples of potential contaminated fomites that need proper cleaning and disinfection:

Instruments

- Stethoscope
- Thermometer
- Otoscope
- Dental tools

YOU!

- Use gloves and wash your hands often with soap and water
- Change clothing between rabbit patients

Exam room & treatment area

- Exam table, treatment table/bench
- Scale for weighing
- Anesthesia equipment
- Cage floor and walls, cage door
 - Discard all organic bedding (wood, paper, etc.)
- Computer keyboard and mouse, writing pens
- Telephones, smart phones
- Exam room door handles, hospital door handles
- Faucet handles
- Floors - especially high traffic areas in lobby



Vaccine information

Medgene Labs has received Emergency Use Authorization by the USDA for their new vaccine against RHD. California licensed veterinarians may contact Medgene Labs at 605-697-2600 about ordering vaccine. Additional information can be found at their webpage: <https://medgenelabs.com/rhdv2/>



Suspect RHD?

Due to the rapid decline and sudden death, many of these rabbits will be found in good body condition. A thorough history is vital. If you suspect RHD in a domestic or feral domestic rabbit, please call your regional CDFA Animal Health Branch office. Domestic rabbit carcasses or liver samples may be submitted to a California Animal Health & Food Safety Laboratory (CAHFS) branch laboratory. Cost of one PCR for RHDV2 for a single domestic rabbit per household will be covered by CDFA. If a full necropsy with complete diagnostic workup is requested, the submitter will be charged \$140 per rabbit carcass (\$135 per necropsy including the RHDV2 PCR test and \$5 disposal fee). The submitter will be charged \$50 for each additional RHDV2 PCR test requested without a paid necropsy if multiple samples from the same household are submitted. Carcasses or liver samples should be double-bagged in plastic bags and the outer bag sprayed with disinfectant. Samples intended for full necropsy should kept on ice or refrigerated (not frozen). Samples submitted only for PCR to detect RHDV2 may be stored on ice, refrigerated, or frozen (do not place in formalin).

Report dead wild rabbits or hares to:
 CDFW Wildlife Investigations Lab - (916) 358-2790
or report online at:
<https://wildlife.ca.gov/Conservation/Laboratories/Wildlife-Investigations/Monitoring/Mortality-Report>

Carcasses or liver **samples from domestic rabbits** may be submitted to the CAHFS laboratory:
 CAHFS Davis – (530) 752-7578
 CAHFS Tulare – (559) 688-7543
 CAHFS San Bernardino – (909)-383-4287

Report dead domestic rabbits to:
CDFA Animal Health Branch Offices
 Headquarters - (916) 900-5002
 Redding District - (530) 225-2140
 Modesto District - (209) 491-9350
 Tulare District - (559) 685-3500
 Ontario District - (909) 947-5932
USDA-APHIS-VS - (916) 854-3950 or (877) 741-3690

For more information, please click the following:
https://www.cdfa.ca.gov/AHFSS/Animal_Health/RHD.html

www.cdfa.ca.gov