

1. Rabbit Hemorrhagic Disease Virus, or Rabbit Calicivirus
 - a. RHDV2 is a highly contagious and often deadly virus that affects wild and domestic rabbits. Infected rabbits shed the virus in their urine and feces, and the virus will live in the environment for months.
 - b. Healthy rabbits become infected after exposure to sick rabbits or objects contaminated with the virus- cages, bedding, feed, a caretaker's clothing, or other animals or insects.
 - c. At this time, RHDV has not been identified in Massachusetts and the virus is not present in wild rabbits in New England or surrounding states.
 - d. RHDV is considered a foreign animal disease (FAD) and is reportable to state and federal officials.
2. Vaccination
 - a. At the time of the first diagnoses in the US, there was no licensed vaccine for RHDV available in the United States. Under highly regulated circumstances, the USDA CVB allowed vaccines used in Europe to be imported into states with confirmed cases of RHDV2.
 - b. Although vaccination may reduce the clinical signs of disease, it does not prevent a rabbit from becoming infected, getting sick, or shedding the virus.
 - c. The USDA Center for Veterinary Biologics has granted Emergency Use Authorization to an experimental RHDV2 vaccine produced by Medgene Labs. Studies to confirm safety and efficacy are ongoing. The vaccine is expected to receive conditional approval by early 2023.
 - d. As a result of this, USDA no longer allows importation of the European vaccine products.
 - e. There are no reported cases in Massachusetts or in wildlife in surrounding states. No Emergency currently exists in our region.
 - f. The NY 2021 case and the CT 2022 cases were limited to single households.
3. Biosecurity and Quarantine: The best way to prevent RHDV continues to be through good biosecurity.
 - a. Keep your rabbits indoors and maintain a closed colony. No wild or domestic rabbits from outside of the colony should have contact with your colony of rabbits.
 - b. If maintaining a closed colony is not possible, then new rabbits (and rabbits returning to the colony following travel) should be quarantined for 14 days minimum prior to joining the colony. Quarantined rabbits should be housed far away from the colony and should be closely monitored for signs of illness. When caring for your rabbits, care for young animals first, then the general population, and quarantined animals last. Wash your hands before and after handling each group of rabbits and between each animal in quarantine.
 - c. Dedicated equipment and supplies should be used for each group of rabbits. If equipment must be shared (exam table, roaming area), then it should be thoroughly cleaned and disinfected between groups of rabbits. Quarantined animals should not share any areas or equipment with animals who are not in quarantine. Supplies and equipment kept in the quarantine area should be used for quarantined rabbits only.

- d. Wear personal protective equipment (PPE) when caring for quarantined animals. Wash your hands and remove and replace contaminated PPE between rabbits. Do not go back into the general population after caring for the quarantined animals.
 - e. Caretakers and visitors can introduce disease into the colony through contaminated shoes or clothing. Persons entering the colony should remove street clothes and change into clean clothing prior to entering. If a person has handled a domestic or wild rabbit or a rabbit carcass, they should be denied entry.
 - f. Insects can transport diseases to your rabbits. Animals that venture outside (dogs, cats) should not have access to rabbit areas or equipment. All animals including rabbits should be treated with appropriate flea prevention, and rodent and insect infestations should be prevented. Windows and doors should be screened to prevent entry of insects.
 - g. Never release domestic rabbits into the wild- this could spread disease into the wild population of rabbits.
 - h. Consider avoiding feed and produce grown in RHDV2 endemic areas, as this may be an important potential source of disease introduction. Do not feed items grown in RHDV2 endemic areas to wildlife. The Mass Grown and Fresher site may be a good resource for finding locally grown produce year-round: [Massachusetts Grown...and Fresher! | Mass.gov](#).
4. Proper disinfection of rabbit areas:
- a. Remove animals from areas to be cleaned and disinfected. Ensure adequate ventilation, gloves, respiratory, and eye protection as necessary prior to cleaning and disinfecting.
 - b. Metal and non-porous materials are much easier to clean and disinfect compared to porous materials, like wood, carpet, and upholstered furniture. Rabbits in foster homes should be maintained within a cage during their quarantine period. If they become sick, a cage is much easier to clean and disinfect than an entire home.
 - c. Remove and discard all bedding, feed, feces, fur, and visible debris from the area to be cleaned and disinfected. Some disinfectants are inactivated by organic material, so this step is very important. Next, thoroughly wash the area with soap and water. After the area has dried, saturate all surfaces with disinfectant solution. Allow for the appropriate contact time, then rinse the area thoroughly.
5. Disinfectants that will inactivate RHDV2 are labeled to inactivate un-enveloped viruses, like parvoviruses and feline calicivirus.
- a. Accelerated hydrogen peroxide (Rescue)
 - b. Potassium peroxydisulfate (Trifectant, Virkon S)
 - c. Sodium hypochlorite (Bleach): although bleach is easy to obtain and effective against un-enveloped viruses, it may not be the best choice for disinfection. Bleach is quickly inactivated by organic material, so it is very important to remove all organic debris from the area to be disinfected. Bleach is corrosive and can cause respiratory issues in humans and animals if proper precautions are not taken. New bleach solution should be mixed every 24 hours as it loses efficacy over time, and when exposed to light or heat.
 - i. Bleach solution 0.5%: add 1.5 cup of household bleach (6% sodium hypochlorite) to 1 gallon of water. Contact time necessary to inactivate RHDV with this bleach solution is 5 minutes.

- d. Review this table of disinfectants from UC Davis Koret Shelter Medicine Program: <https://www.sheltermedicine.com/library/resources/?r=disinfectant-product-table>
 - e. Review this list of disinfectants published by the EPA: <https://www.epa.gov/pesticide-registration/list-o-disinfectants-use-against-rabbit-hemorrhagic-disease-virus-rhdv2>.
 - f. For further information about cleaning and disinfection, go to: <https://www.sheltermedicine.com/library/resources/?r=sanitation-in-animal-shelters#>
6. If you suspect a case of RHDV:
- a. Immediately contact your veterinarian.
 - b. For suspected cases of RHDV2 in domestic rabbits please contact the Massachusetts Department of Agriculture at (617) 626-1795 or the US Department of Agriculture Veterinary Services at (508) 363-2290.
 - c. For suspected cases of RHDV2 in wild rabbits, please contact the MA Division of Fisheries and Wildlife at (508) 389-6300.