

COVID-19:

WHAT VETERINARIANS NEED TO KNOW

Updated as of 4:30 PM on March 15, 2020

Health officials across the U.S. and all over the world are on high alert due to COVID-19, a disease that causes flu-like symptoms in people, including mild to severe respiratory illness with fever, cough, and difficulty breathing. Veterinary professionals are receiving questions from their clients and their teams, and the AVMA is pleased to be able to provide credible information and resources to assist with responses to those questions.

To ensure the resources we provide you are as accurate and up-to-date as possible in this continuously evolving environment, the AVMA is in regular contact with CDC, FDA, and USDA; other state, national, and international veterinary and public health expert groups; and intergovernmental organizations (such as the WHO and OIE) to learn the latest developments and their potential impacts on veterinarians, patients, and clients.

Here's some key information about COVID-19:

- The betacoronavirus that causes COVID-19 is SARS-CoV-2 (formerly 2019-nCoV).
- Person-to-person and community spread has been reported in numerous countries, including the United States.
- Transmission primarily occurs when there is contact with an infected person's bodily secretions, such as saliva or mucus droplets in a cough or sneeze. Transmission via touching a contaminated surface or object (i.e., a fomite) and then touching the mouth, nose, or possibly eyes is also possible, but appears to be a secondary route. Smooth (non-porous) surfaces (e.g., countertops, door knobs) transmit viruses better than porous materials (e.g., paper money, pet fur) because porous, especially fibrous, materials absorb and trap the pathogen (virus), making it harder to contract through simple touch.
- There are currently no antiviral drugs recommended or licensed by FDA to treat COVID-19, and there is no immunization available.
- Cases of COVID-19 and community spread are being reported in most states.
- The best way to avoid becoming ill is to avoid exposure to the virus. Taking typical preventive actions is key.
- Infectious disease experts and multiple international and domestic human and animal health organizations agree there is no evidence at this point to indicate that pets become ill with COVID-19 or that they spread it to other animals, including people.
- If you are not ill with COVID-19, you can interact with your pet as you normally would, including walking, feeding, and playing. You should continue to practice good hygiene during those interactions (e.g., wash hands before and after interacting with your pet; ensure your pet is kept well-groomed; regularly clean your pet's food and water bowls, bedding material, and toys).
- Out of an abundance of caution, it is recommended that those ill with COVID-19 limit contact with animals until more information is known about the virus. Have another member of your household take care of walking, feeding, and playing with your pet. If you have a service animal or you must care for your pet, then wear a facemask; don't share food, kiss, or hug them; and wash your hands before and after any contact with them.
- As always, careful handwashing and other infection control practices can greatly reduce the chance of spreading any disease. The [National Association of State Public Health Veterinarians' \(NASPHV\) compendium of standard precautions](#) is a good reference for appropriate infection control in veterinary practices.

COVID-19 ORIGIN AND SPREAD

Coronavirus Disease 2019 (COVID-19) has health officials all over the world on high alert after first being detected in China and now spreading to more than 100 locations internationally, including the United States. Helpful information providing a [real-time look at case counts](#) globally is available from the John Hopkins Center for Systems Science and Engineering.

The betacoronavirus that causes COVID-19 is SARS-CoV-2. Like MERS-CoV (the cause of Middle East Respiratory Syndrome) and SARS-CoV (the cause of Severe Acute Respiratory Syndrome), SARS-CoV-2 appears to have its origin in bats. Sequenced virus obtained from US patients is similar to that found in China originally, which suggests a single, recent emergence of this virus from an animal reservoir. Patients at the initial epicenter of the outbreak in Wuhan, Hubei Province, China had a link to a large seafood and live animal market, suggesting animal-to-person spread. Person-to-person spread within Wuhan was next reported, followed by person-to-person spread outside of Hubei Province and in countries outside of China, including the U.S. Many popular international destinations, including the United States, now appear to have [community spread](#).

COVID-19 IN HUMANS

COVID-19 causes flu-like symptoms in people, including mild to severe respiratory illness with fever, cough, and difficulty breathing. Person-to-person spread has been indicated in numerous countries, including the United States, and seems to occur when there is contact with an infected person's bodily secretions, such as saliva or mucus droplets in a cough or sneeze. Transmission via touching a contaminated surface or object (i.e., a fomite) and then touching the mouth, nose, or possibly eye is also possible, but appears to be a secondary route. Smooth (non-porous) surfaces (e.g., countertops, door knobs) transmit viruses better than porous materials (e.g., paper money, pet fur) because porous, especially fibrous, materials absorb and trap the pathogen (virus), making it harder to contract through simple touch.

Time between infection and appearance of symptoms in people is not yet known with confidence, but initial estimates are approximately five to seven days. The COVID-19 quarantine period for people is 14 days.

Cases of COVID-19 and instances of community spread are being reported in most states. People living in or traveling from places where ongoing community spread of SARS-CoV-2 is taking place appear to be at higher risk of exposure, with relative risk dependent on the location. Healthcare workers caring for patients with COVID-19 also have greater risk, as do close contacts of people with COVID-19.

There are currently no antiviral drugs recommended or licensed by FDA to treat COVID-19, and there is no immunization available.

Awareness and prevention are important to reducing the spread of COVID-19:

- Avoid people who are sick.
- Call your physician if you experience a fever and respiratory issues.
- If you are ill, stay at home except to get medical care and call ahead before visiting your doctor. Minimize your contact with other people, including [separating yourself](#) from other members of your household who are not ill.
- Cover your mouth and nose when you cough or sneeze.
- Avoid touching your face, especially your eyes, nose, and mouth.
- Wash your hands often. Use soap and water, and wash for at least 20 seconds. If soap and water are not available, use hand sanitizer that contains at least 60% alcohol.
- Practice social distancing
 - o CDC recommends keeping a distance of six to 10 feet from other people.
 - o Avoid gathering in public places, including attending or hosting large social gatherings. Postpone the latter, if at all possible.
 - o If considering a small gathering of friends, be careful that no one is showing symptoms of disease and/or is a close contact of someone who has.

- o Shop for necessities at off-hours when there are likely to be fewer people in the store.
- o As difficult as it may be, refrain from visiting people who are in assisted living and nursing facilities. They are among the most vulnerable population.
- o Consider virtual visits with friends and the elderly.
- Regularly clean and disinfect objects and surfaces in your home and workplace. A [list of products](#) determined by the EPA to be effective for combatting viral pathogens is available from the American Chemistry Council Center for Biocide Chemistries (CBC).
- Those living in households with a person ill with COVID-19 should closely [monitor their health](#) and call their healthcare provider right away if they develop symptoms suggestive of COVID-19.
- The use of facemasks is not recommended for healthy members of the general public as a means of protection from COVID-19. Facemasks should be used by people with symptoms of COVID-19 to avoid spreading the disease to others and facemasks are also important for healthcare workers and people who are taking care of someone at home or in a healthcare facility.

Guidance is available from the CDC to help [your household get ready for COVID-19](#)

SARS-COV-2 AND DOMESTIC ANIMALS, INCLUDING PETS

On Thursday, February 27, Hong Kong’s Agriculture, Fisheries, and Conservation Department (AFCD) reported that samples obtained on February 26 from the nasal and oral cavities of a pet dog (a 17-year-old Pomeranian whose owner had been diagnosed with COVID-19) had tested “weak positive” for SARS-CoV-2, using a real time reverse transcriptase polymerase chain reaction (RT PCR) test. A fecal sample was negative. Testing was repeated on February 28, March 2, and March 5 with continued “weak positive” results (nasal and oral sample, nasal sample, nasal sample, respectively). The RT PCR test is sensitive, specific, and does not cross-react with other coronaviruses of dogs or cats. A “weak positive” result suggests a small quantity of SARS-CoV-2 RNA was present in the samples, but does not distinguish between RNA detected from intact virus and fragments of RNA. To better understand what this means, additional testing has been, and continues to be, conducted.

Part of that testing is serology to see if the dog is mounting an immune response to the virus. An acute phase sample was negative, indicating there are currently not measurable amounts of antibodies to the virus in the dog’s blood. This does not mean the dog is not infected with the virus, because it is not uncommon to have a negative result in earlier stages of infection. It can take 14 days or more for measurable levels of antibodies to be detected. A second “convalescent” phase sample will be obtained later for further testing. In addition, gene sequencing of the SARS-CoV-2 virus from the dog and its close human contacts has been done and the viral sequences are very similar.

Experts from the School of Public Health of the University of Hong Kong and the College of Veterinary Medicine and Life Sciences of the City University of Hong Kong believe the consistency and persistence of the results suggest the virus may have spread from the infected people to the dog in this particular case. Follow-up serology is pending.

Testing has been conducted by the laboratories of the AFCD and the School of Public Health of the University of Hong Kong. The latter is an accredited reference laboratory for the WHO for the testing of SARS-COV-2.

This pet dog is one of two pet dogs under quarantine in separate rooms in a facility at the Hong Kong Port of Hong Kong-Zhuhai-Macao Bridge; the second pet dog has had negative results of tests for the virus. The pet dogs are being cared for and neither has shown any signs of being ill with COVID-19.

In other testing, IDEXX [announced on March 13](#) that it had evaluated thousands of canine and feline specimens during validation of its new veterinary test system for the COVID-19 virus and had obtained no positive results. The specimens used for test development and validation were obtained from specimens submitted to IDEXX Reference Laboratories for PCR testing.

Considering this information in total, infectious disease experts and multiple international and domestic human and animal health organizations (CDC, OIE, WHO) agree there is no evidence at this point to indicate that pets can spread COVID-19 to other animals, including people.

Although there have not been reports of pets becoming sick with COVID-19, out of an abundance of caution, it is recommended that those ill with COVID-19 limit contact with animals until more information is known about the virus. If you are ill with COVID-19, be sure to tell your physician and public health official that you have a pet or other animal in your home. Have another member of your household take care of walking, feeding, and playing with your pet. If you have a service animal or you must care for your pet, then wear a facemask; don't share food, kiss, or hug them; and wash your hands before and after any contact with your pet or service animal. You should not share dishes, drinking glasses, cups, eating utensils, towels, or bedding with other people or pets in your home. [Additional guidance](#) on managing pets in homes where people are sick with COVID-19 is available from the CDC.

For responsible pet owners, preparing in advance is key. Make sure you have an emergency kit prepared, with at least two weeks' worth of your pet's food and any needed medications. Usually we think about emergency kits like this in terms of what might be needed for an evacuation, but it's also good to have one prepared in the case of quarantine or self-isolation when you cannot leave your home.

While we are recommending these as good practices, it is important to remember there is currently no evidence that pets can spread COVID-19 to other animals, including people.

KEEPING VETERINARY TEAMS HEALTHY

Stay informed about the local COVID-19 situation and know where to turn for reliable, up-to-date information in your local community. Monitor the [CDC's COVID-19 website](#) and your [state and local health department websites](#). The International Association of Emergency Managers' [Novel Coronavirus Hotspot Illness Radar](#) may also provide helpful information.

Coordination with [state](#) and [local](#) health officials is strongly encouraged for all businesses so that timely and accurate information can guide appropriate responses in each location where their operations reside. Since the intensity of an outbreak may differ according to geographic location, local health officials will be issuing guidance specific to their communities.

Because there is currently no vaccine available to prevent COVID-19, the best way to avoid becoming ill is to avoid exposure to the virus. Taking typical [preventive actions](#) is key: team members should avoid close contact (defined as being within approximately 6 feet [2 meters] of an individual ill with COVID-19 for a prolonged period of time) with other people who are ill; avoid touching their eyes, nose, and mouth; cover their coughs or sneezes with a tissue, then throw the tissue in the trash; wash their hands often with soap and water for at least 20 seconds, especially after blowing their nose, coughing, or sneezing, going to the bathroom, and before eating (if soap and water are not readily available, use an alcohol-based hand sanitizer with at least 60% alcohol); and stay at home when they are sick.

Surfaces in the veterinary clinic/hospital that are touched frequently, such as workstations, keyboards, doorknobs, countertops, and stethoscopes, should be cleaned often and wiped down by employees with disposable wipes between cleanings. Provide no-touch disposal receptacles. Place hand sanitizers in multiple locations, including in exam rooms, offices, and conference rooms to encourage hand hygiene.

Veterinary healthcare team members who have symptoms of acute respiratory illness should stay at home and should not return to work until they are free of fever (fever is defined as a temperature of 100.4F or higher, using an oral thermometer), signs of a fever, and any other symptoms for at least 24 hours without the use of fever-reducing or other symptom-altering medicine (e.g., cough suppressants). Communicate about COVID-19 with your team. Flexible sick leave policies are important and team members should be made aware of these policies. Team members who appear to have symptoms of acute respiratory illness upon arrival at work or who become sick during the day should be separated from other team members and sent home immediately.

If a team member is confirmed to have COVID-19, the veterinary practice owner should inform other team members of their possible exposure to COVID-19, but maintain confidentiality as required by law. Team members who are exposed to another employee with confirmed COVID-19 should contact their physician or local health department to determine how best to proceed.

CARING FOR VETERINARY PATIENTS

Consultation with [state](#) and [local](#) health officials is strongly encouraged so that timely and accurate information can guide appropriate responses in each location where their operations reside. Since the intensity of an outbreak may differ according to geographic location, local health officials will be issuing guidance specific to their communities.

If you are in an area with active COVID-19 cases, considering limiting patient care to acutely ill animals and/or emergencies. Work to reschedule elective procedures, such as annual examinations, vaccinations, spays/neuters, and routine dentals. Animals that are sick or injured should receive veterinary attention. Be strategic in the use of personal protective equipment (PPE), including masks, gowns, and gloves (see links to conservation strategies below in the “Potential supply chain impacts” section). Actively seek to utilize telemedicine; guidance is available on the AVMA website at avma.org/Telemedicine.

If an animal owner is ill with COVID-19, and a [veterinarian-client-patient relationship](#) exists, consider the use of telemedicine to help assess the animal’s condition and needs. If the animal needs to be seen in person, the ill owner should have a healthy family member or friend bring their sick animal to a veterinary hospital or clinic.

Consider meeting clients with ill animals at their cars, rather than having them bring those animals into your waiting room. When meeting clients, as a precaution, veterinary team members should wear appropriate PPE. This should reduce risk for both veterinary team members and clients, as human-to-human contact is still believed to be the primary mode of transmission.

Mobile and house call veterinarians can consider examining animals in their vehicle, outside, or seek the assistance of a local clinic. If a mobile or house call veterinarian must examine an animal in a home where someone is ill with COVID-19 and no other options are available, they should consult with [local](#) public health officials for guidance. Appropriate PPE should be considered in all cases, and mobile and house call veterinarians should ensure they have access to handwashing and disinfection materials.

The National Association of State and Public Health Veterinarians’ [Compendium of Veterinary Standards Precautions for Zoonotic Disease Prevention in Veterinary Personnel](#) outlines general infection control and prevention guidelines.

USE TELEMEDICINE TO HELP CARE FOR VETERINARY PATIENTS

With intensifying concern around COVID-19, use of telemedicine has become an important way to protect and monitor the health of veterinary patients and veterinary teams. Using telemedicine can help prevent the spread of COVID-19, because it allows veterinary patients to be appropriately triaged with only those veterinary patients that really need to be seen making the trip to the clinic along with their owners. Certain things are required for the use of telemedicine, of course: an already established [veterinarian-client-patient relationship](#) and an appropriate patient presentation. AVMA has resources to support your use of telemedicine at avma.org/Telemedicine.

POTENTIAL SUPPLY CHAIN IMPACTS

The COVID-19 outbreak has raised concern about potential medical supply issues, including both pharmaceuticals and medical products such as personal protective equipment (PPE, e.g., gloves, masks, gowns) and surgical drapes. No current shortages are reported by any of the 32 animal drug companies that make finished drugs or source active pharmaceutical ingredients in China for the U.S. market, according to the U.S. Food and Drug Administration (FDA). However, six of the firms have indicated that they see supply chain disruptions that soon could lead to shortages.

The FDA is working with these firms to identify interventions to mitigate potential shortages and has done similar work on the medical product/device side. The agency is sharing information on its website about the [availability of drugs and medical supplies](#).

Limits on filling orders or shortages of some medical supplies (e.g., masks, gloves) have been reported to AVMA by some members. And, on March 4, the governor of Ohio asked all healthcare professionals, including veterinarians, to delay elective procedures to conserve PPE and medical supplies. Others may follow suit. FDA has shared [surgical mask and gown conservation strategies](#). While FDA’s recommendations are primarily directed toward human healthcare providers, some of these strategies might be considered in veterinary practice (e.g., extended use of masks; reusable, rather than disposable, gowns).



Suggestions specific to veterinary practice are also available from the Centre for Public Health and Zoonoses (see [March 5 entry](#) in their Worms & Germs Blog)

The AVMA is in close communication with the FDA and is supporting FDA's efforts to gather information about shortages of drugs (including both animal and human drugs used in veterinary medicine), food/feed additives, and other products needed by veterinarians from independent practices, practice groups, and veterinary distributors.

Veterinary professionals and distributors should email the AVMA at coronavirus@avma.org to report any supply chain issues of concern. Include detailed information about the product of concern and its manufacturer/distributor, if possible.

BUSINESS CONSIDERATIONS

Coordination with [state](#) and [local](#) health officials is strongly encouraged for all businesses so that timely and accurate information can guide appropriate responses in each location where their operations reside. Since the intensity of an outbreak may differ according to geographic location, local health officials will be issuing guidance specific to their communities.

Other resources include

The [coronavirus response business toolkit](#): The U.S. Chamber of Commerce put together a toolkit to help businesses and citizens alike understand how to navigate the coronavirus. There are guidelines on how small business owners can ensure they are keeping their customers and employees safe. The toolkit also includes a business preparedness checklist. This checklist can help you figure out what to prioritize and create a plan of communication for your employees.

[Disaster assistance loans](#) from the SBA: The Small Business Association (SBA) announced it would offer disaster assistance loans for up to \$2 million for small businesses affected by the coronavirus. These low-interest loans are available to businesses that have sustained "substantial economic injury" due to the spread of the coronavirus. These loans can be used to pay off outstanding debts, payroll and any other bills they are unable to pay. While small businesses that have access to credit are not eligible, those small businesses with no available credit qualify for an interest rate of 3.75%, and nonprofits will have an interest rate of 2.75%.

[Disaster Help Desk](#) for small businesses: The U.S. Chamber Foundation has a disaster help desk that acts as an information concierge to assist small businesses with disaster readiness, relief, and long-term recovery. They also have a business resiliency toolbox with resources to help guide companies to address preparedness issues while building in flexibility to handle potential business interruptions.

ADDITIONAL AVMA RESOURCES

[Coronaviruses in domestic species](#)

[Coronavirus: Detailed taxonomy](#)

[Frequently asked questions for veterinarians](#)

[Frequently asked questions for pet owners](#)

OTHER RESOURCES

Find more information about COVID-19 and its impacts by visiting the [CDC](#), [World Health Organization \(WHO\)](#), and [World Organisation for Animal Health \(OIE\)](#) websites. The following pages may be of particular interest.

From the CDC:

- [Symptoms of COVID-19](#)
- [How it spreads](#)
- [Prevention and treatment](#)
- [Frequently asked questions](#)
- Situation-specific guidance documents:
 - o [Guidance intended to help household members plan for community transmission of coronavirus disease 2019 \(COVID-19\)](#) in the United States.
 - o [Recommendations to reduce survival of SARS-CoV-2](#) in the environment include cleaning and disinfection of households where persons under investigation or those confirmed with COVID-19 reside or may be in self-isolation.
 - o [Interim guidance for public health professionals managing at-home care and isolation of people with COVID-19 who have pets or other animals \(including service or working animals\) in the same home](#). States may have their own specific requirements for these circumstances.
 - o [Interim guidance for businesses and employers](#)

From the WHO:

- [Rolling updates](#)
- [Situation reports](#)
- [Questions and answers](#)
- [Update archive](#)

From the OIE:

- [Questions and answers](#)

From the FDA:

- [Frequently asked questions](#)

From the USDA:

- [General information](#)

From others:

- [U.S. State Department travel information](#)
- [Person-to-person transmission study](#)
- [National Association of State Public Health Veterinarians: Compendium of Veterinary Standards Precautions for Zoonotic Disease Prevention in Veterinary Personnel](#)
- [Coronavirus response business toolkit](#)
- [Small Business Association disaster assistance loans for small businesses impacted by COVID-19](#)
- [Disaster help desk for small businesses](#)