

COVID-19 and Animals

FREQUENTLY ASKED QUESTIONS FOR VETERINARIANS

March 30, 2020

This document was developed by a working group consisting of Canadian public health and animal health experts, with representation from federal and provincial/territorial governments, the Canadian Veterinary Medical Association, and academia. It takes into consideration past and current research on coronaviruses and COVID-19, as well as expert opinion. The findings and conclusions represents the consensual, but not necessarily unanimous, opinions of the working group participants, and do not necessarily represent the views of the participants' respective organizations.

This information is preliminary and will be updated as further information becomes available.

What is the evidence that animals can become infected and develop illness from the SARS-CoV-2 (the virus that causes COVID-19 illness in humans)?

Currently there is limited evidence that animals can be infected with SARS-CoV-2. Although SARS-CoV-2 is believed to have originated in bats and possibly passed through at least one other animal host before being transmitted to humans, reporting of infected animals have been rare in this outbreak. The overall risk that most animals (domestic animals in particular) can become infected and develop illness, is thought to be low. However, only limited information is available and there is still uncertainty and many unknowns about how this virus will behave in various animal species.

- There have been two dogs from Hong Kong reported to be infected with SARS-CoV-2, however neither dog showed any signs of illness. An additional 15 dogs and 8 cats from households with COVID-19 illness in Hong Kong have tested [negative](#).
 - [The initial case](#), a 17 year old Pomeranian, tested positive for low levels of SARS-CoV-2 RNA by RT-PCR on multiple nasal and oral swabs (Feb 26-Mar5), following close exposure to an infected person. The test used was reported to be sensitive, specific, and does not cross-react with other coronaviruses of dogs or cats. Experts concluded that the dog likely had a low-level of infection with the virus, although the virus could not be isolated. Subsequent PCR testing was [negative](#). The dog did [seroconvert](#), but additional testing was not possible as the dog died 3 days after being released from quarantine. The death is not suspected to be due to SARS-CoV-2. Officials have assessed this as a case of human-to-animal transmission.
 - [The second case](#), a 2 year old German Shepherd, was quarantined and tested after its owner was confirmed with COVID-19. Oral, nasal, and rectal swabs were collected and tested positive by RT-PCR.
- On March 27, 2020, the [Federal Agency for the Safety of the Food Chain \(FASFC\) in Belgium](#) reported that viral RNA was detected via PCR in the feces and vomit of a cat. The cat had developed transient respiratory and digestive clinical signs that occurred a week after the owner developed symptoms. Details provided (i.e. sample collection, testing methodology, virus isolation, and seroconversion) are scant at this time, making it difficult to determine if symptoms were related to SARS-CoV-2. A [FASFC independent Scientific Committee](#) noted that although it can be suspected that the cat has an active infection further information is required to confirm the infection.
- [OIE has reported](#) that samples were taken from several species of animals in the Huanan Seafood Wholesale Market (where the outbreak was originally

detected) and none of these were positive. The Chinese animal health authorities [tested](#) more than 4800 samples of animals such as pigs, poultry, dogs and cats, which were all negative; however it's unknown if any of these samples included animals exposed to infected people.

- Initial results from the Australian Animal Health Laboratory suggest that [ferrets](#) are susceptible to infection and the virus can replicate within this species under experimental conditions.
- Recently, [IDEXX announced](#) that, as part of a validation process to develop a RT-PCR test for COVID-19, more than 3500 canine, feline, and equine specimens from the United States and South Korea had been tested and none were positive. However, it is not known whether any of these samples were from COVID-19 infected households. Monitoring of canine and feline specimens submitted to IDEXX for diagnostic respiratory RealPCR panels is ongoing, and will be expanded to additional regions globally. This test is not available for commercial use in Canada at this time.

If an animal becomes infected, what is the evidence that it can transmit the virus to other people or animals?

The risk of transmission by an infected animal is currently assessed as low, although this assessment is made with moderate uncertainty, given there is limited information.

- Although the virus likely originated from a wild animal host, the virus has adapted to efficiently transmit from human-to-human. There have been no reports of transmission from a domestic animal to another animal or human, despite a widespread international outbreak.
- It is not clear from the testing done so far whether animals are capable of spreading the virus; RT-PCR test detects viral RNA only, and cannot determine if the virus would actually replicate or if animals would excrete a dose capable of infecting a person or an animal.
- Attempts at [virus isolation](#) in the first positive dog were unsuccessful.
- Although not much work has been done to specifically address this question, significant transmission would have likely been identified by now through epidemiological/case tracing.

What is the evidence that animals can act as fomites to mechanically transmit the COVID-19 (SARS-CoV-2) virus from a human case to another person?

Although there is a potential risk of exposure to SARS-CoV-2 through contact with a contaminated hair coat, there is only a theoretical risk of transmission of the virus to a person through this route. It is considered unlikely that a sufficient amount of virus would remain on the hair coat long enough to transmit infection. Practicing proper hygiene such as handwashing would further reduce any possible risk.

- An [extensive literature review](#) did not find any studies that evaluated fur, hair, skin, or hides as a source of transmission from cats or dogs for the SARS-CoV, MERS or SARS-CoV-2; this is an understudied area.
- Coronaviruses can persist in the environment for days, although it varies by surface. Viruses do not survive as long on porous surfaces (e.g. cotton, paper) compared to non-porous surfaces (e.g. stainless steel, plastic).
 - Recent [research](#) has found that SARS-CoV-2 can survive on cardboard for 24 hours and on non-porous surfaces such as stainless steel and plastic for 3 days.
 - A previous [study](#) on SARS virus that simulated large respiratory droplets falling on cotton gowns, found that at concentrations of virus higher than what would be expected from a nasopharyngeal aspirate, the virus only survived on cotton for 5 minutes. At a higher viral load, the virus was inactivated within 1 hour and at the highest viral load tested, within 24 hours.

Can livestock become infected with the COVID-19 (SARS-CoV-2) virus?

- To date, there have been no reports of livestock being infected by COVID-19 virus anywhere, but little to no testing has been conducted to date.
- The susceptibility of various livestock species to SARS-CoV-2 is currently unknown and it is unclear how COVID-19 infections could manifest in various animal species, if at all. Current research is underway domestically and internationally to look at species susceptibility, so more information is anticipated in the coming weeks. The Canadian Food Inspection Agency (CFIA) is conducting [research](#) on domestic animal species (pig, chicken, turkey) to determine their susceptibility to SARS-CoV-2 and validate test methods and the potential for transmission between animals.

As a veterinarian or animal health professional, I am concerned about working around animals (pets/livestock) that have been exposed to people with COVID-19. Are there any extra precautions I should be taking?

The human outbreak is being driven by person-to-person contact, therefore the main considerations to protect health are maintaining [physical distancing](#), practicing proper [hygiene and cleaning](#), and minimizing contact (both direct and indirect) with your human clients, who pose the greatest risk to the health of you and your staff.

There are still many unknowns about how this virus will behave in various animal species. Two possible transmission routes to consider are:

- **Contact with an infected animal:** There have been no reports of transmission from a domestic animal to another animal or human, despite a widespread international outbreak. Although not much work has been done to specifically address this question, significant transmission events would likely have been identified by now through tracing of cases. The risk of transmission by an infected animal is currently assessed as low, but this assessment remains uncertain, given the limited information.
- **Mechanical (fomite) transmission through contact with a contaminated animal:** Although there is a potential risk of exposure to SARS-CoV-2 through contact with a contaminated hair coat, there is only a theoretical risk of transmission of the virus to a person. It is considered unlikely that a sufficient amount of virus would remain on the hair coat long enough to transmit infection.

While the risk of acquiring SARS-CoV-2 through the above routes is thought to be low, and notably much lower than the risk of being infected by another person, the risk is not zero, and may vary depending on circumstances.

The primary measures to manage these potential risks are following basic public health prevention guidance for preventing zoonotic disease transmission, including:

- wash your hands before and after touching an at-risk animal or their food/supplies, and after cleaning up after them; do not touch your face with unwashed hands (consider wearing gloves)
- wear protective outerwear (e.g. lab coat) to prevent contamination of your clothes
- regularly clean and disinfect any surfaces or objects the animal touches; see Health Canada's approved list of disinfectants [here](#)
- minimize the animal's contact with people and other animals

Some additional precautionary measures that could further reduce risk include:

- Bathing or wiping down animals with a pet-friendly product could theoretically help to reduce any possible fur contamination, although there is no evidence to demonstrate effectiveness
- For non-emergent care where the patient is admitted, minimizing handling for 2-3 days would likely reduce the risk of fomite transmission to negligible
- If close contact with the animal is required (e.g. restraint, or any procedure that brings a person's face close to the fur), additional personal protective equipment (PPE) can be utilized to further reduce risk, especially to protect from facial contact (eyes, nose, mouth) with the animal directly (fur) or with respiratory droplets/aerosols

A history of recent confirmed or suspected COVID-19 illness in the household with no strict measures to minimize contact with pets would be considered higher risk. Professional judgement should be utilized to assess and identify high-risk situations and determine the appropriate precautionary measures, while helping to conserve and maintain the critical supply of PPE for human healthcare settings.

The situation is evolving rapidly and precautions should be considered within the general context of the evolving epidemiology and science.

Follow any further COVID-19 related recommendations from your veterinary licencing authority or associations, or public health authority.

My clients heard about animals testing positive for COVID-19 (SARS-CoV-2), and are worried about their health and the health of their families. What advice should I be providing?

Veterinarians should discuss what is known and what is not known about COVID-19 in animals to help their clients make an informed choice about precautions. This is a good time to emphasize basic precautionary measures to prevent transmission of zoonotic diseases between humans and animals (e.g. handwashing, not sharing food or letting them lick your face).

Advise your clients that if they have COVID-19 symptoms or are self-isolating due to contact with a COVID-19 case, they should follow similar recommendations around their animals, as they would around people in these circumstances:

- avoid close contact (petting, snuggling, being kissed or licked, sharing food) with their animals during the illness
 - practice good handwashing and avoid coughing and sneezing on animals
- if possible, have another member of their household care for their animals
 - if this is not possible, they should always wash their hands before and after touching animals, their food and supplies, and good respiratory etiquette (e.g. cough/sneeze into a tissue or elbow, not hands)
- limit their animal's contact with other people and animals outside the household until their illness is resolved

Depending on individual values and preferences, including tolerance for risk and uncertainty, some owners may worry to the point that they wish to surrender their animal, which creates concern for animal welfare. Some considerations when helping them to weigh the risks vs the benefits are:

- The greatest risk of infection by far is still from contact with infected people
- Infected people are believed to be the source of the virus reported in pet animals (human-animal transmission rather than animal-human)
- Animals can be a great comfort and make us happy during times of stress and there are many health benefits to owning a pet, particularly during physical distancing
- There is no reason at this time to think that surrendering an animal, thereby potentially compromising its welfare, will decrease a pet owner's risk
- There is currently no evidence that pets can spread COVID-19. The risks of getting infected from contact with an animal are theoretical at this point
- Any theoretical risk is temporary. Generally speaking, if an animal were to become infected from contact with an ill person in the household, once the person (or household) is able to come out of self-isolation, their animals can also be safely out in the community

My client was ill with symptoms of COVID-19 (SARS-CoV-2), and is now worried that their pet could be an ongoing source of infection for others. Is this a concern?

Even if the pet was exposed to the virus in the household during the owner's illness, it is unlikely that the pet would be a source of the virus (either by infection or contamination of the coat) beyond the owner's own course of disease. The virus is

transmitted primarily person-to-person; therefore, once the person (or family) is able to come out of self-isolation, their animals can also presumably be out safely in the community.

I have clients requesting testing for their animals for COVID-19 (SARS-CoV-2). Is there a test and if so, what are the procedures for testing?

Testing of animals is not recommended at this time, as the virus is primarily transmitted person-to-person and not through animal contact. Commercial test kits for animals are not available.

If you have a client with an animal that has signs of illness and the animal has been in contact with a person with COVID-19, you should:

1. Confirm the epidemiologic link: verify that the pet was in close contact with a person with COVID-19 symptoms within the past 14 days
2. Assess (over the phone) the severity of the illness. Using your professional judgement determine if an animal can remain in the care of their owner or guardian. Discuss other possible pathogens or conditions that could be causing illness, and whether any of these differentials can be addressed via telemedicine (as per applicable local veterinary laws and guidance)
3. If the case is severe and needs to be seen, manage them as a possible contagious case
4. Try to rule out other pathogens or conditions
5. If you suspect SARS-CoV-2 infection in an animal and have concerns for animal or public health, contact the office of your provincial or territorial chief veterinarian.

This information will be updated as further information becomes available.

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