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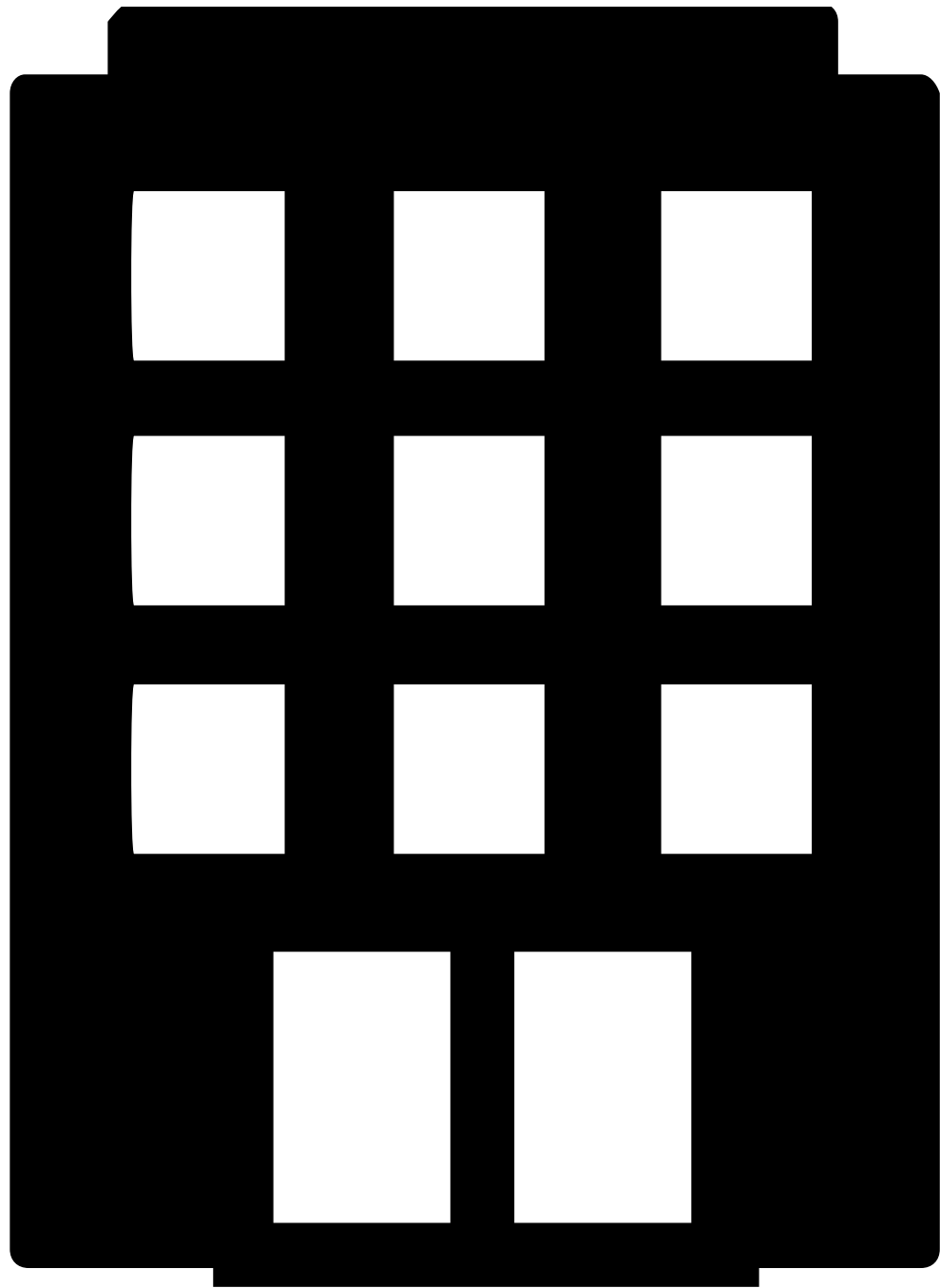


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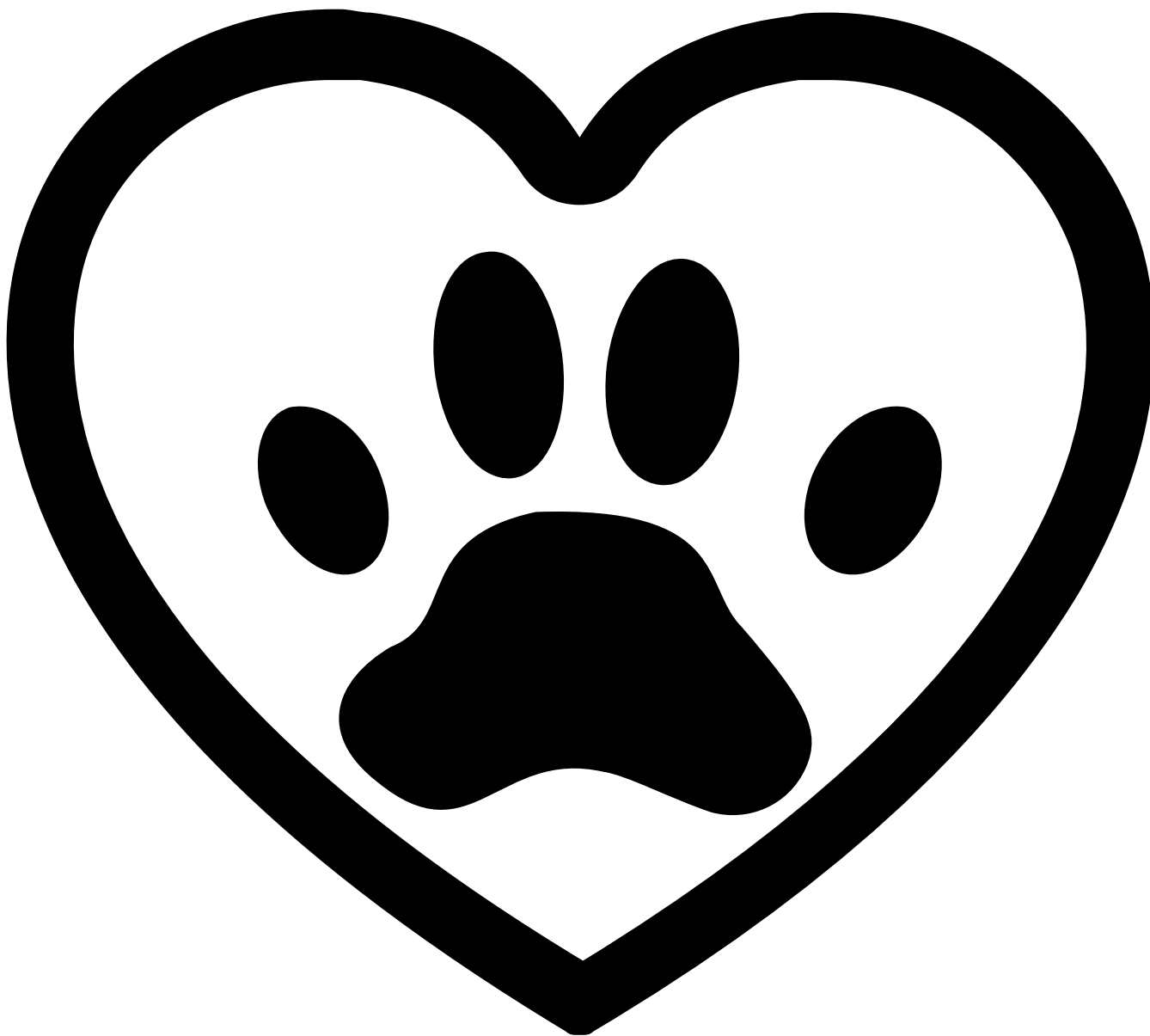


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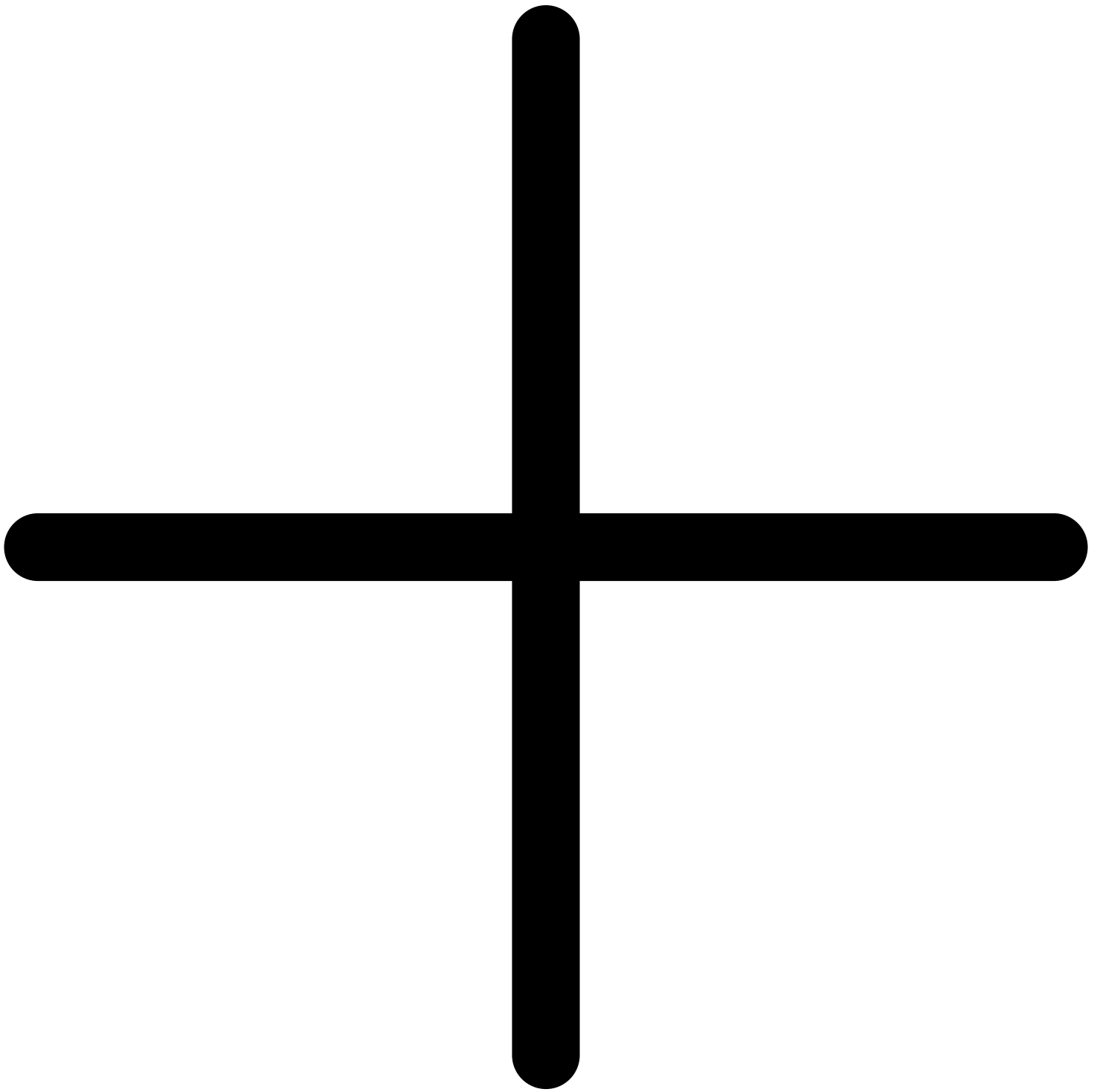
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Animals and COVID-19

Q: Can SARS-CoV-2 infect pets?

As of April 19, the only pets incidentally exposed to COVID-19 that have tested positive, with confirmation, for SARS-CoV-2 are two pet dogs and a pet cat in Hong Kong. Another pet cat in Belgium tested positive, but details around that case are less clear.. In each case, the pet was in the care of and had close contact with a person who had been confirmed to have COVID-19. Only in the case of the cat in Belgium was there a suggestion of the animal showing clinical signs of disease and, in that case, other diseases and conditions that could have caused those same signs of illness were not ruled out and there are also questions about how samples demonstrating the presence of SARS-CoV-2 were collected and evaluated. That cat recovered.

In a French study, tests (RT-PCR and antibody evaluation via an immunoprecipitation assay) performed on 21 pets (12 dogs and 9 cats) living in close contact with their 20 French veterinary student owners (2 of whom were confirmed to have COVID-19 infection and 11 more of whom showed symptoms consistent with COVID-19) all yielded negative results.

Two commercial laboratories in the United States reported they have tested (RT-PCR) thousands of specimens from dogs and cats for SARS-CoV-2 and have obtained no positive results. These specimens have come from the United States, South Korea, Canada, and Europe, including regions concurrently experiencing human COVID-19 cases. While this is encouraging, the specimens tested were originally submitted for polymerase chain reaction (PCR) analysis of more common pathogens causing respiratory disease in dogs and cats and, as such, per-case information as to whether or not these dogs and cats had contact with confirmed COVID-19 positive people is not available.

As of April 19, the CDC had not received any National Veterinary Services Laboratories (NVSL)-confirmed reports of pets becoming sick with COVID-19 in the United States.

Preliminary findings from limited laboratory experimental studies indicate that, of species tested thus far, cats are the species most susceptible to infection with SARS-CoV-2. Some cats in these studies developed signs of clinical disease. Ferrets were also found to be susceptible to infection, but appeared less likely to develop disease. In the laboratory setting cats and ferrets were also able to transmit SARS-CoV-2 to other cats and ferrets, respectively. Dogs appeared to be susceptible to infection, but less so than cats or ferrets. Other preliminary laboratory findings indicate that poultry and pigs are not susceptible to infection with SARS-CoV-2. It is important to understand that experimentally induced infection does not mirror naturally induced infection. In other words, just because an animal can be experimentally infected via inoculation with high concentrations of purified tissue-cultured virus does not mean that it will be easily be infected with that same virus under natural conditions. The number of animals involved in these studies was also very small and conclusions were drawn based on data that, in some cases, were collected from as few as two animals.

There is no evidence to suggest that animals, including pets, that may be incidentally infected by humans are playing a role in the spread of COVID-19. Human outbreaks are driven by person-to-person transmission.

Pets have other types of coronaviruses that can cause them to become ill, but these are species-specific, meaning that they do not infect people and are not related to the current COVID-19 outbreak.

We will continue to provide you with information as we learn more about pets and SARS-COV-2. Because animals can spread other diseases to people and people can also spread diseases to animals, it's a good idea to always wash your hands before and after interacting with and caring for your pets, as well as before and after handling their food, supplies, and waste.

Q: Can pets spread COVID-19?

Infectious disease experts, as well as the Centers for Disease Control and Prevention and World Organisation for Animal Health (OIE), indicate there is currently no evidence to suggest that animals incidentally infected by humans, including pets, play a role in the spread of COVID-19. Human outbreaks are driven by person-to-person contact.

COVID-19 appears to be primarily transmitted by contact with an infected person's bodily secretions, such as saliva or mucus droplets in a cough or sneeze. It appears that COVID-19 can also be transmitted by touching a contaminated surface or object (i.e., a fomite) and then touching the mouth, nose, or possibly eyes, but this appears to be a secondary route. Smooth (non-porous) surfaces (e.g., countertops, doorknobs) transmit viruses better than porous materials (e.g., paper money, pet fur).

Because animals can spread other diseases to people and people can also spread diseases to animals, it's always a good idea to wash your hands before and after interacting with animals; ensure your pet is kept clean and its fur combed to prevent mats; regularly clean your pet's food and water bowls and bedding material; and remove and replace soiled or damaged toys. Because we have no confirmed examples of where viruses have been transmitted by contact with pet hair or skin, the use of alcohol or hydrogen peroxide containing cleaning agents, hand sanitizers, or sanitizing wipes to clean your pet's fur or paws in an effort to prevent contracting COVID-19 is not recommended and may be harmful.

Q: Can pets' fur, collars, leashes, and carriers serve as fomites for SARS-CoV-2?

COVID-19 appears to be primarily transmitted by contact with an infected person's bodily secretions, such as saliva or mucus droplets in a cough or sneeze. It appears that COVID-19 can also be transmitted by touching a contaminated surface or object (i.e., a fomite) and then touching the mouth, nose, or possibly eyes, but this seems to be a secondary route. Smooth (non-porous) surfaces (e.g., countertops, doorknobs) transmit viruses better than porous materials (e.g., paper money, pet fur). Because your pet's hair is porous, and fibrous, it is unlikely that you would contract COVID-19 by petting or playing with your pet. And, while we know that certain bacteria and fungi can be carried on fur and hair, we have no examples of where viruses have been transmitted by contact with pet hair or skin, including SARS-CoV-2. However, because pets can spread other diseases to people and people can also spread diseases to animals, it's always a good idea to wash your hands before and after interacting with pets. There is no evidence to suggest that animals, including pets, that may be incidentally infected by humans are playing a role in the spread of COVID-19. Human outbreaks are driven by person-to-person transmission.

While risk of transfer of SARS-CoV-2 from collars, leashes, and carriers also appears to be limited, it's always a good idea to keep pet collars, leashes, and carriers clean and, fortunately, the SARS-CoV-2 virus is susceptible to [routine cleaning](#). The Environmental Protection Agency has [published](#) a list of wipes, ready-to-use, and dilutable products for use against SARS-CoV-2.

Q: Should I avoid contact with animals, including pets, if I am sick with COVID-19?

You should restrict contact with pets and other animals while you are sick with COVID-19, just like you would restrict contact with other people. Although there have not been reports of pets becoming sick with COVID-19 in the United States, it is still recommended that people sick with COVID-19 limit contact with animals until more information is known about the virus.

Have another member of your household care for your animals, if possible. If you have a service animal or you must care for your animals, then wear a cloth face covering; don't share food, kiss, or hug them; and wash your hands before and after any contact with them. You should not share dishes, drinking glasses, cups, eating utensils, towels, or bedding with other people or pets in your home. Pets belonging to owners infected with COVID-19 should also be kept indoors as much as possible.

While we are recommending these as good practices, there is no evidence to suggest that animals, including pets, that may be incidentally infected by humans are playing a role in the spread of COVID-19.

Q: What precautions should be taken for animals that have recently been imported from outside the United States (e.g., by shelters, rescues or as personal pets)?

Animals imported into the United States will need to meet [CDC](#) and [USDA](#) requirements for entering the United States.

At this time, there is no evidence to suggest that animals, including pets, that may be incidentally infected by humans are playing a role in the spread of COVID-19. However, as should be done for any animal introduced into a new environment, recently imported animals should be observed daily for signs of illness. If an animal becomes ill, the animal should be examined by a veterinarian. Call your veterinarian before bringing the animal into the clinic/hospital and let them know that the animal was recently imported from another country.

Q: Is testing for SARS-CoV-2 available for animals in the United States?

As of April 19, the CDC had not received any National Veterinary Service Laboratories (NVSL)-confirmed reports of pets or other domestic animals becoming sick with COVID-19 in the United States. In addition, there is no evidence to suggest that animals, including pets, that may be incidentally infected by humans are playing a role in the spread of COVID-19. As such, routine testing of animals for COVID-19 is not recommended by the AVMA, CDC, USDA, American Association of Veterinary Laboratory Diagnosticians (AAVLD), or National Association of State Public Health Veterinarians (NASPHV).

If an animal becomes ill with respiratory or gastrointestinal signs, veterinarians should first test for common pathogens and conditions that are more likely to have caused such clinical signs. Animal testing for SARS-CoV-2 is available if the attending veterinarian and local, state, and/or federal public health and animal health officials agree an animal merits testing. Different states may have different requirements for testing and collaborating with and reporting to public health and animal health officials.

Answers to frequently asked questions about animal testing are available from USDA ([state public and animal health officials](#) and [public](#)), [CDC](#), and AVMA (veterinarians and [public](#)).

Of note is that [COVID-19 is an World Organisation for Animal Health \(OIE\) notifiable disease](#) and presumptive positive results of testing require confirmation by the USDA National Veterinary Services Laboratories (NVSL).

Q: What are the criteria for testing animals owned by, or in close contact with, people ill with COVID-19 in the United States?

If a domestic animal becomes ill with respiratory or gastrointestinal signs, veterinarians will first test for common pathogens and conditions that are more likely to have caused such clinical signs. If the results of tests for any of these common pathogens or conditions are positive, then the veterinarian will recommend treatment and care for that animal accordingly.

If the results of tests for more common pathogens and conditions are negative, the veterinarian should contact a local, state, or federal public health or animal health official for information about how to proceed. Any decision to test an animal for SARS-CoV-2 will be made collaboratively with these officials and testing will generally only be done if there has been close contact between the animal and a COVID-19 positive person or if there is exposure of the animal to a high-risk environment where a human outbreak occurred, such as residence, facility (e.g., nursing home, prison), or cruise ship. Different states may also have different requirements for testing and collaborating with and reporting to public health and animal health officials.

Q: Should any animal showing signs of respiratory or gastrointestinal illness be tested?

The AVMA, USDA, CDC, American Association of Veterinary Laboratory Diagnosticians (AAVLD), and National Association of State Public Health Veterinarians (NASPHV) do not recommend routine testing of animals for this virus. If a domestic animal becomes ill with respiratory or gastrointestinal signs, veterinarians are strongly encouraged to first test for common pathogens and conditions that are more likely to have caused such clinical signs.

Discussion among key regulatory authorities and animal health experts (USDA, CDC, FDA, NASPHV, National Assembly of State Animal Health Officials [NASAHO], AVMA) indicates that testing may be justified for certain animals in the following situations:

- Animal has clinical signs consistent with SARS-CoV-2, more common causes of the patient's clinical signs have been ruled out, and the animal has a history of
 - Close contact with a person with suspected or confirmed COVID-19, or
 - Exposure to a known high-risk environment where a human outbreak occurred, such as a residence, facility (e.g., nursing home, prison), or cruise ship
- Atypical patterns of disease suggesting a novel pathogen in a mass care situation (e.g., animal shelter, boarding facility, animal feeding operation, zoo) where exposure history is not known (appropriate diagnostics should be undertaken first to rule out more common causes of illness)
- Threatened, endangered, or otherwise imperiled/rare animals in rehabilitation or zoological settings that have clinical signs or are asymptomatic and have possible exposure to SARS-CoV-2 through an infected person or animal

- Atypical pattern of disease suggesting infection with SARS-CoV-2 in recently imported animals (appropriate diagnostics should be undertaken first to rule out more common causes of illness)
- Testing is part of an approved research project gathering scientific information to better understand if and how animals might be affected by SARS-CoV-2 and help clarify the role, if any, of pets in human COVID-19. Approved animal care and use and biosafety protocols are required.

Because the situation is ever-evolving, animal and public health officials may decide to test certain animals meeting the above criteria. The decision to test will be made collaboratively between the attending veterinarian and local, state, and federal public health and animal and health officials, and your veterinarian will contact one of those officials for information about how to proceed. If samples are sent to state animal health, university, or private laboratories for initial testing, all samples should be collected by a licensed, and preferably USDA-accredited, veterinarian in duplicate because positive samples must be confirmed through additional testing by the USDA National Veterinary Services Laboratories (NVSL). Different states may also have different requirements for testing and collaborating with and reporting to public health and animal health officials.

Q: Why are animals being tested when many people can't get tested?

Animals are only being tested in rare circumstances and on a case-by-case basis after consultation with public health and animal health officials to determine if testing is needed. Routine testing of animals is not being recommended at this time.

Q: Have any domestic species become infected with SARS-CoV-2 as a result of exposure to COVID-19 positive owners or close contacts?

As of April 17, two commercial laboratories in the United States reported they had tested thousands of specimens from dogs and cats for SARS-CoV-2 and had obtained no positive results. These specimens have come from the United States, South Korea, Canada, and Europe, including regions concurrently experiencing human COVID-19 cases. While this is encouraging, the specimens tested were originally submitted for polymerase chain reaction (PCR) analysis of more common pathogens causing respiratory disease in dogs and cats and, as such, per-case information as to whether or not these dogs and cats had contact with confirmed COVID-19 positive people is not available.

Only a few animals with a known history of exposure to people with confirmed COVID-19 have been tested. With that in mind, the only pets incidentally exposed to COVID-19 that have tested positive, with confirmation, for SARS-CoV-2 are two pet dogs and a pet cat in Hong Kong. Another pet cat in Belgium tested positive, but details around that case are less clear. In each case, the pet was in the care of and had close contact with a person who had been confirmed to have COVID-19. Only in the case of the cat in Belgium was there a suggestion of the animal showing clinical signs of disease and, in that case, other diseases and conditions that could have caused those same signs of illness were not ruled out and there are also questions about how samples demonstrating the presence of SARS-CoV-2 were collected and evaluated. That cat recovered. As of March 31, 27 dogs and 15 cats from Hong Kong households in which one or more people were sick with COVID-19 had been held in quarantine. Only the 2 dogs and 1 cat mentioned above had positive results of testing for SARS-CoV-2 and none of the animals in quarantine had developed clinical signs of respiratory disease.

To date, the CDC has not received any National Veterinary Service Laboratories (NVSL)-confirmed reports of pets or other animals becoming sick with COVID-19 in the United States, and there is no evidence to suggest that animals, including pets, that may be incidentally infected by humans are playing a role in the spread of COVID-19.

Q: I've heard about research reports of cats, ferrets, and dogs being infected with SARS-CoV-2 and, in some cases, spreading it to other animals of the same species. What can you tell me about those reports?

Preliminary findings from limited laboratory experimental studies indicate that, of species tested thus far, cats are the species most susceptible to infection with SARS-CoV-2. Some cats in these studies developed signs of clinical disease. Ferrets were also found to be susceptible to infection, but appeared less likely to develop disease. In the laboratory setting cats and ferrets were also able to transmit SARS-CoV-2 to other cats and ferrets, respectively. Golden Syrian hamsters were also able to be experimentally infected and were able to spread the infection to other hamsters. Dogs appeared to be susceptible to infection, but less so than cats or ferrets. Other preliminary laboratory findings indicate that poultry and pigs are not susceptible to infection with SARS-CoV-2.

It is important to understand that experimentally induced infection does not mirror naturally induced infection. In other words, just because an animal can be experimentally infected via inoculation with high concentrations of purified tissue-cultured virus does not mean that it will be easily be infected with that same virus under natural conditions. The number of animals involved in these studies was also very small and conclusions were drawn based on data that, in some cases, were collected from as few as two animals.

There is no evidence to suggest that animals, including pets, that may be incidentally infected by humans are playing a role in the spread of COVID-19. Human outbreaks are driven by person-to-person transmission.

Q: What do we know about the zoo tiger sick with COVID-19 disease?

On April 5, the US Department of Agriculture's National Veterinary Services Laboratories [announced](#) a positive finding of SARS-CoV-2 in samples from one tiger at the Bronx Zoo in New York City. This appears to be the first instance of a tiger being infected with COVID-19.

On April 3, quantitative PCR testing for SARS-Coronavirus-2 (SARS-CoV-2) on duplicate respiratory tract samples from a four-year-old female Malayan tiger with respiratory signs that was living at the Wildlife Conservation Society's (WCS) Bronx Zoo was performed at the Animal Health Diagnostic Center and New York State Veterinary Diagnostic Laboratory at Cornell University College of Veterinary Medicine and the University of Illinois College of Veterinary Medicine Veterinary Diagnostic Laboratory. Presumptive positive results of that testing were confirmed by the USDA National Veterinary Services Laboratory on April 4. The tiger was one of two Malayan tigers, two Amur tigers, and three

African lions that developed respiratory signs over the course of a week; respiratory signs included a dry cough and, in some cases, wheezing, but no dyspnea or nasal or ocular discharge. Mild anorexia was also noted in some animals. All of the large cats are long-term residents of the zoo, do not have chronic medical conditions, and there have been no new animals introduced to the groups for several years. All other Amur and Malayan tigers, a snow leopard, cheetah, clouded leopard, Amur leopard, puma (*Puma concolor*), and serval at the zoo still appear healthy. The source of infection was presumed to be transmission from a zookeeper, who at the time of exposure had not yet developed symptoms of COVID-19. The zoo has been closed to the public since mid-March, and the first tiger began showing signs of being ill on March 27. All of these large cats are expected to recover. Other animals in other parts of the zoo have shown no clinical signs of disease. Enhanced biosecurity protocols have been implemented for staff caring for all nondomestic felids in the four zoos overseen by the WCS.

Because infection of animals with SARS-CoV-2 meets the criteria of an [emerging disease](#), such cases are reported to the World Organisation for Animal Health (OIE).

Q: If multiple great cats at the Bronx Zoo were showing clinical signs, why was only one tested?

Only one tiger was tested because the collection of diagnostic samples in big cats requires general anesthesia. Since all tigers and lions were exhibiting similar clinical signs of respiratory disease, the attending veterinarian believed it was in the best interest of the animals to limit the potential risks of general anesthesia to one tiger for diagnostics.

Q: How did the tiger contract COVID-19?

Presumably, the tiger contracted SARS-CoV-2 from a zookeeper, who at the time of exposure had not yet developed symptoms of COVID-19.

Q: Will this finding prompt additional testing of animals?

No. This is an evolving situation, however, routine testing of zoo or domestic animals is not recommended at this time. Animal and public health officials may decide to test certain animals that are showing signs of illness consistent with those identified for COVID-19, but only in cases where more common causes for respiratory and/or gastrointestinal illness in those animals have been ruled out and when the affected animals have possible exposure to SARS-CoV-2 through an infected person or animal.

Q: If animals can catch the virus, can they infect people?

At this time, there is no evidence to suggest that pets, livestock, or zoo animals that may be incidentally infected by humans are playing a role in the spread of COVID-19. Human outbreaks are driven by person-to-person transmission.

Q: Is it true that SARS-CoV-2 originated in bats?

This is a hypothesis. The RNA sequence of SARS-CoV-2 is closely related to that of other coronaviruses circulating in bats in Southeast Asia. Taxonomically, SARS-CoV-2 virus is a betacoronavirus. Using molecular clock analysis, betacoronaviruses are [reported to have originated about 3,300 BC](#). Bats are considered to be ideal hosts for alphacoronaviruses and betacoronaviruses.

Sars-CoV-2 viruses isolated from different human COVID-19 patients are reported to have almost identical sequences and the sequences are reported to be [88%](#) and [89.1%](#) analogous with bat-SL-CoVZC45, and [96%](#) analogous with BatCoV RaTG13. BatCoV RaTG13 was previously detected in the [horseshoe bat](#), which is found in South and Southeast Asia and southern and central China.

Q: How did SARS-CoV-2 get from bats to people? Was there an intermediate host?

The precise [mechanism of evolution](#) of SARS-CoV-2 from bats (if that is where SARS-CoV-2 came from) to people is not presently known. At least two scenarios have been proposed. The first has the virus evolving to its current pathogenicity through natural selection in a non-human host (e.g., bat) and jumping to humans. There are no documented cases of bat to human transmission of a coronavirus; previous coronaviruses have passed through an intermediate mammal host before human infection. The identity of the SARS-CoV-2 intermediate host (if there is one) is also currently unknown, but several have been suggested including [pangolins](#) and [stray dogs](#).

In an alternative scenario, a nonpathogenic version of the virus would have jumped from an animal host to humans and then evolved within humans to its current pathogenic state.

These are all hypotheses based on comparative analysis of RNA coronaviral sequences and none have been confirmed to date.

People and COVID-19

Q: How are humans most commonly exposed to the SARS-CoV-2 virus?

SARS-CoV-2 is [thought to spread](#) mainly from person-to-person, including between people who are in close contact with one another (within about 6 feet [2 meters]), through respiratory droplets produced when an infected person coughs, sneezes or talks. Some recent studies have suggested that COVID-19 may be spread by people who are not showing symptoms of the disease, so maintaining social distance (about 6 feet) is important to preventing the spread of COVID-19.

It may be possible to contract COVID-19 by touching a surface or object that has the virus on it and then touching your mouth, nose, or possibly your eyes. While this is not thought to be the main way the virus spreads, CDC recommends people practice frequent hand hygiene, which is either [washing hands with soap](#) or water or using an alcohol-based hand rub. CDC also recommends [routine cleaning of frequently touched surfaces](#).

Q: How are respiratory droplets and contact with them related to SARS-CoV-2 exposure?

Transmission of SARS-CoV-2 most often occurs when a person infected with the virus releases droplets by coughing, sneezing, speaking, singing, or exhaling. These droplets are generally too heavy to hang in the air, and quickly fall onto floors or other surfaces. All else being equal, the stronger the exhale (coughing or sneezing as compared with normal exhalation) the more droplets are released and the farther the droplets may be dispersed. Taking this into account, many states have now adopted [social distancing](#) of 6 feet because virtually all sizes of droplets disperse short of that radius.

Exhaled droplets eventually land somewhere; for example, on hands, shirt sleeves, countertops, and floors. Droplets can also land on or be transferred by touch to other often-touched surfaces, such as door handles, silver and dinnerware, keys, and steering wheels. Coronaviruses, including SARS-CoV-2, have been shown to survive in the environment from a [few hours to a few days](#), depending on the type of surface, temperature, humidity, and contact with ultraviolet light. Touching one's mouth, nose, or eyes with SARS-CoV-2-contaminated hands after touching contaminated surfaces is a secondary route of exposure.

Results of an [experimental laboratory study](#) suggest that detectable amounts of SARS-CoV-2 virus remain in the air, and on copper, cardboard, stainless steel, and plastic during favorable conditions for the virus (71 to 73°F) for three, four, 24, 72, and 72 hours, respectively. This study, however, involved a much larger viral load than might be expected after normal exposures so the retention times reported may be a worse-case scenario. Virus was also [detected](#) in a hospital room of a COVID-19 patient prior to routine cleaning, but no virus was detected after routine cleaning of that patient's room.

Q: Can I get COVID-19 from a person not showing any clinical signs?

Onset and duration of viral shedding and the period of infectiousness for COVID-19 are not yet known. There are reports of asymptomatic infections (detection of virus with no development of corresponding symptoms) and pre-symptomatic infections (detection of virus prior to development of symptoms) with SARS-CoV-2, but their role in transmission is not yet known. Based on existing literature, the [incubation period](#) (detection of virus prior to development of symptoms) ranges from two to 14 days.

Q: How are people with COVID-19 treated?

Current clinical management includes the application of infection prevention and control measures, such as [separating the patient from other people and pets in the home and aggressive hygiene and disinfection](#) and supportive care, including [supplemental oxygen and mechanical ventilatory support](#) when indicated. While researchers are studying new drugs and drugs that are already approved for other health conditions as possible treatments for COVID-19 (e.g., Remdesivir, hydroxychloroquine and chloroquine, investigational antivirals, immunotherapeutics, host-directed therapies), currently there are no drugs that are specifically FDA-approved for treatment of this disease. The [FDA](#) is working with drug manufacturers, researchers, and other partners to accelerate the development and approval process for COVID-19 treatments. Information on registered clinical trials for COVID-19 in the United States is available at [ClinicalTrials.gov](#).

Interest has emerged regarding ivermectin as a potential treatment after Australian scientists demonstrated that a single dose eradicated all genetic material of SARS-CoV-2 growing in cell culture within 48 hours. Additional testing in animals and people is required to determine whether these *in vitro* results are mirrored *in vivo* and what dose might be effective in treating the virus, while still being safe to administer to people.

There has been similar interest around the use of chloroquine phosphate after a [publication](#) was released suggesting some efficacy for its use in treating COVID-19-associated pneumonia in clinical studies. While used to treat malaria and certain other conditions in people, chloroquine phosphate is also available in a different formulation to treat disease in aquarium fish and [at least one person has died from ingesting chloroquine phosphate in that formulation](#). Because ivermectin is also readily available in formulations used to treat animals, similar concerns exist around the misuse of this drug and FDA has issued a [warning](#) accordingly.

While we are all anxious to find a treatment for COVID-19, it is very important that people not self-medicate with prescription medications or over-the-counter drugs that are not prescribed or recommended for them by their doctor for their particular health condition(s) and veterinarians should advise clients accordingly.

Q: What research studies are being conducted to support treatments for COVID-19 in people?

Researchers are studying new drugs, and drugs that are already approved for other health conditions, as possible treatments for COVID-19. The [US National Library of Medicine Clinical Trials](#) database lists more than 380 drug (including [convalescent plasma](#)), device, biologic, and other [trials for COVID-19](#). The FDA is posting frequent [updates](#) on therapeutic trials and enforcement actions against fraudulent claims.

Scientists around the world are participating in a platform, [Randomised Evaluation of COVID-19 Therapy \(RECOVERY\)](#), that is examining approximately 30 treatments believed to have potential.

Animal models of SARS-CoV-2 infection are being explored, using high doses of virus. Bats, ferrets, and cats show some initial potential for serving as models, but dogs, pigs, chickens, and ducks do not. As clarification, [domestic cats](#) are a species distinct from [civet cats](#).

Q: Can biologics used to prevent coronavirus infections in domestic animals be used to prevent COVID-19 in people?

No. The [United States Department of Agriculture Center for Veterinary Biologics](#) licenses biologics for use in dogs, cats, cattle, swine and chickens, but those coronaviruses are different from SARS-COV-2. Biologics developed for use in non-human animals should not be given to humans.

Veterinary practice and COVID-19

Q: How do I best protect myself and my veterinary team from infection with COVID-19?

Stay informed about the local COVID-19 situation. 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](#). Goals are to reduce employees' risk of contracting COVID-19, reduce transmission among employees, maintain a healthy work environment, and maintain healthy business operations.

Because there is no vaccine available to prevent COVID-19, the best way to avoid becoming ill is to avoid exposure to the virus. AVMA has developed [guidance for protecting veterinary teams during the pandemic](#). Taking typical [preventive actions](#) is key: team members need to notify their supervisor and stay at home when they are sick and must avoid close contact (defined as being within approximately 6 feet [2 meters]) with anyone showing any symptoms of being ill. Team members need to 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). Avoid touching your eyes, nose, and mouth; cover coughs or sneezes with a tissue, then throw the tissue in the trash. Avoid using other employees' phones, desks, offices, and other work tools and equipment, when this is possible. If tools and equipment are shared, frequent cleaning and disinfection is advised.

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. CDC has also developed [guidance for employers on cleaning and disinfecting facilities](#), as well as [environmental cleaning and disinfection recommendations for US community facilities](#) with suspected or confirmed COVID-19. The Occupational Safety and Health Administration (OSHA) also has [guidance on preparing workplaces for COVID-19](#).

Communicate about COVID-19 with your team. Flexible sick leave policies are important and team members should be made aware of these policies. Review human resources policies to make sure that policies and practices are consistent with public health recommendations and existing state and federal workplace laws.

Veterinary healthcare team members who have symptoms of acute respiratory illness should follow [CDC-recommended steps](#). Team members who appear to have symptoms of acute respiratory illness upon arrival at work or who become sick during the day should immediately be separated from other team members and clients and sent home. 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. It is possible that public health officials may ask that the veterinary practice be temporarily closed for personnel isolation and disinfection.

CDC has developed [interim guidance for businesses and employers](#) and [interim infection prevention and control recommendations for patients with suspected or confirmed COVID-19 in healthcare settings](#). In addition AVMA has developed [guidance for managing employees known to be exposed to confirmed or suspected cases of COVID-19 or that are confirmed or suspected to have COVID-19 themselves](#).

Consider splitting practice employees into smaller teams, as possible, that remain together and refrain from or limit contact with other teams. Stagger shifts to allow for time for disinfection of premises and equipment and in case members of a particular team need to isolate. For those staff who do not need to be at the veterinary clinic/hospital, consider permitting them to perform their jobs from their homes.

Telemedicine can be an excellent option to support good patient care while also helping to prevent person-to-person spread (client to veterinary staff and vice versa) and help minimize community spread of COVID-19. In most cases, you will need to have appropriately established a [veterinarian-client-patient relationship](#) with an in-person examination (or visits to the facility for groups of animals). New clients can be assisted using emergency triage. Telemedicine may be further supported by any discretion that is being applied by regulatory officials under the COVID-19 emergency for the practice of veterinary medicine in your state. In all cases, telemedicine visits need to be appropriate for the medical concern to be addressed.

Q: What do I do if I learn that a member of my veterinary team has been exposed to someone with confirmed or suspected COVID-19, or if one of my veterinary team members is confirmed or suspected to have COVID-19 themselves?

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. It is possible that public health officials may ask that the veterinary practice be temporarily closed for personnel isolation and disinfection.

CDC has developed [interim guidance for businesses and employers](#) and [interim infection prevention and control recommendations for patients with suspected or confirmed COVID-19 in healthcare settings](#). In addition AVMA has developed [guidance for managing employees known to be exposed to confirmed or suspected cases of COVID-19 or that are confirmed or suspected to have COVID-19 themselves](#).

Veterinary healthcare team members who have symptoms of acute respiratory illness should follow [CDC-recommended steps](#). Team members who appear to have symptoms of acute respiratory illness upon arrival at work or who become sick during the day should immediately be separated from other team members and clients and sent home.

Q: How do I practice social distancing with my staff and clients?

Social distancing, also referred to as physical distancing, means keeping space between yourself and other people outside of your home. To practice social or physical distancing, maintain at least 6 feet (2 meters) between yourself and other people (as possible, we recognize this is difficult for veterinary team members working together in veterinary clinics), do not gather in groups, and stay out of crowded places and mass gatherings.

Adopt engineering and administrative controls in the AVMA's [Protecting your veterinary team during the pandemic](#) resource to minimize exposure of veterinarians and staff to clients with known or unknown COVID-19 disease status. Many clinics are obtaining histories from clients and seeing patients remotely via telemedicine and/or are admitting patients directly from their clients' cars into the hospital. Clients should be encouraged to don cloth face coverings when visiting your clinic/hospital. When patients and clients are seen together within the veterinary clinic/hospital, social distancing should be enforced in waiting rooms, consideration should be given to having only one client at a time in the waiting room or clients should remain in their cars until an exam room is available, and staff members should hold animals rather than having their owners do so. Appropriate [personal protective equipment \(PPE\)](#) should be considered for veterinarians and staff interacting directly with clients and performing certain procedures. [Cloth face coverings](#) should be considered for staff members performing normal activities that don't involve direct interactions with clients.

Q: The animal of a client who is ill with COVID-19 needs to be seen urgently, how do I proceed?

The AVMA's resource on [Minimizing COVID-19 exposure and social distancing in veterinary practice](#) may be helpful. Telemedicine should be considered as a first option to evaluate the patient. If an animal owned or kept by a client ill with COVID-19 needs to be physically seen, ensuring that a healthy individual can bring the animal to the veterinary clinic/hospital is a priority, because an ill owner or caretaker poses a risk of transmitting COVID-19 to veterinary hospital staff and other clients.

To reduce risk for veterinary clinic/hospital staff who may be exposed to asymptomatic clients, consider meeting all clients at their cars, rather than having them bring their animals into your waiting room and request that clients wear cloth face coverings when presenting their animals for examination. When meeting clients, as a precaution, veterinary team members should wear appropriate PPE. This should reduce risk for both veterinary team members and clients, because human-to-human contact is believed to be the primary mode of transmission for COVID-19.

Q: Is there a test I can use to check my patients for SARS-CoV-2?

To date, the CDC has not received any reports of pets or other animals becoming sick with COVID-19 in the United States. In addition, there is no evidence to suggest that animals, including pets, that may be incidentally infected by humans are playing a role in the spread of COVID-19. As such, routine testing of domestic animals for COVID-19 is not recommended by the AVMA, CDC, USDA, American Association of Veterinary Laboratory Diagnosticians (AAVLD), or the National Association of State Public Health Veterinarians (NASPHV).

Because the situation is ever-evolving, public and animal health officials may decide to test certain animals. In the United States, the decision to test will be made collaboratively between local, state, and federal animal and public health officials. Answers to questions frequently asked by [state animal and public health officials](#) and the [public](#) are available from USDA.

In general, should a decision be made to test, animal health officials will designate a state-appointed veterinarian, USDA-accredited veterinarian, or foreign animal disease diagnostician to collect the sample using appropriate personal protective equipment (PPE) and sample collection methods.

Again, current expert understanding is that COVID-19 is primarily transmitted person-to-person. This supports a recommendation against testing domestic animals for SARS-CoV-2, except by order of an animal or public health official. If a domestic animal becomes ill with respiratory or gastrointestinal signs, veterinarians should first test for common pathogens and conditions that are more likely to have caused such clinical signs.

Q: How do I use PPE appropriately when it is in short supply? Is it possible to extend the useful life of disposable PPE or to re-use it?

[Postponing non-urgent procedures](#) that require the use of PPE is one way of conserving. Other conservation strategies include safely extending the use of disposable PPE, re-using disposable PPE, or increased use of washable PPE. Veterinarians should increase their focus on engineering and administrative controls before considering how they can extend the life of disposable PPE during times of national shortage. See AVMA's [Guidelines for the use of personal protective equipment \(PPE\) during the COVID-19 pandemic when demand exceeds supply](#) for more detailed information on all of these options.

Q: We're starting to see challenges in obtaining masks and gowns for use in our practice. What should we do?

Given the high demand for personal protective equipment (PPE), all healthcare professionals are being encouraged to conserve.

The Food and Drug Administration has shared some [surgical mask and gown conservation strategies](#), appropriate for three levels of capacity: conventional capacity, contingency capacity, and crisis or alternate 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). Recognizing this, the AVMA has created a [resource](#) derived from these FDA strategies, as well as from CDC guidance and other sources, that includes specific recommendations for veterinary practice.

Q: How do I use telemedicine to care for my 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 and monitored with only those veterinary patients that really need to be seen making the trip to the clinic along with their owners. The AVMA has resources to support your use of telemedicine at avma.org/Telemedicine. While a variety of communication tools are available for use to conduct telemedicine visits, the AVMA has also compiled a [list of providers](#) to assist (please understand that offerings are evolving as the COVID-19 crisis unfolds; we are doing our best to provide current information, but changes may occur).

Q: What are current VCPR requirements around the use of telemedicine?

Guidance around telemedicine may be different in different states, particularly as states adjust to respond to the COVID-19 crisis. In the midst of this emergency, some states—not all—have applied regulatory discretion to temporarily not require an in-person examination or premise visit to establish a VCPR. Please consult the AVMA's [spreadsheet of state orders](#) and confirm with the board of veterinary medicine for your state for the most current information.

At the federal level, FDA has issued [guidance](#), for immediate implementation, that temporarily suspends enforcement of certain aspects of the federal VCPR requirements that apply to extralabel use of drugs and issuing of veterinary feed directives ([VFD]; 21 CFR 530 and 21 CFR 558.6). The guidance acknowledges individual state VCPR requirements that may exist, acknowledges current federal VCPR requirements related to in-person animal examinations/premise visits, and indicates suspension of requirements outlined in guidance are temporary measures during the COVID-19 outbreak.

Q: Can I use telemedicine to prescribe controlled substances?

Following the declaration of a public health emergency by the Secretary of Health and Human Services (DHHS) on Jan. 31, 2020, the Drug Enforcement Administration (DEA) worked with the Department of Health and Human Services (DHHS) to allow DEA-registered practitioners to begin issuing prescriptions for controlled substances to patients that were not the subject of an in-person medical evaluation. DEA-registered practitioners, which—by definition—includes veterinarians, have been [advised](#) that they may issue controlled substance prescriptions via telemedicine for the duration of the emergency declaration (i.e., this is a temporary exception) if the following conditions are met: prescription is issued for a legitimate medical purpose by a practitioner acting in the usual course of his/her professional practice; the telemedicine communication is conducted using an audio-visual, real-time, two-way interactive communication system; the practitioner is acting in accordance with applicable federal and state law. The latter is important because state veterinary practice acts and state pharmacy laws continue to apply. Please review the AVMA's [state order spreadsheet](#) and consult your [state veterinary medical board](#) and state board of pharmacy for additional information regarding your ability to use telemedicine for prescribing controlled substances.

Q: How do I keep myself safe while continuing to care for my patients if I'm a mobile or house call veterinarian?

To assist, the AVMA has created a resource, [Considerations for mobile and house call veterinarians during the COVID-19 pandemic](#). Mobile and house call veterinarians can consider using telemedicine (assuming a veterinarian-client-patient relationship has already been established or regulatory discretion is being applied in their state); rescheduling [non-urgent veterinary visits and procedures](#); or examining animals in their vehicle, in a different building from the owner, outside, or through transport of the animal to a veterinary clinic/hospital. If transporting the animal off-site, the animal should be contained in a species-appropriate crate or trailer.

If a mobile or house call veterinarian must examine an animal in a home or at a facility where someone is ill with COVID-19 and no other options are available, they should consult with local public health officials for guidance and be familiar with [CDC's Interim guidance for public health professionals managing people with COVID-19 in home care and isolation who have pets or other animals](#), in addition to the AVMA 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.

It is always a good idea to take steps to prevent the spread of disease by following the guidance provided in the National Association of State Public Health Veterinarians' [Compendium of Veterinary Standard Precautions for Zoonotic Disease Prevention in Veterinary Personnel](#).

Q: How do I keep myself safe and continue to provide care for my patients if I am an equine practitioner?

Equine practitioners are diverse as to the types of clients for whom they provide services, and their patients serve a variety of human needs/interests, including companionship/pleasure, racing, performance, work, and therapy. The AVMA has developed a resource that includes [considerations for equine veterinarians providing service during the COVID-19 pandemic](#). Additional resources are available from the [American Association of Equine Practitioners](#).

Q: How do I keep myself safe and continue to provide care for my patients if I am a food animal veterinarian?

Food animal veterinarians play a key role in maintaining a safe, secure, and stable food supply. Access to clients and patients is critical. Equally critical is that food animal veterinarians actively incorporate preventive measures into facility visits to reduce risk of infection with SARS-CoV-2 for themselves, their staff members, and others. The AVMA has developed a resource that includes [considerations for food animal veterinarians during the COVID-19 pandemic](#). Additional resources are available from the [American Association of Bovine Practitioners](#), [American Association of Swine Veterinarians](#), and the [American Association of Avian Pathologists](#).

Q: Does the AVMA have guidance available to support the care of animals in shelters and animal control facilities?

Shelter veterinarians, and the animal control agencies and humane organizations within which they work, play a key role in promoting public health and the welfare and humane treatment of animals. During the COVID-19 pandemic, the goal continues to be keeping companion animals together with their owners. However, there will be circumstances where shelters receive companion animals from a home with a person known or suspected to have COVID-19. In these cases, animal handling should address human health, animal health, and animal welfare needs.

To facilitate preparedness and establish practices that can help people and companion animals stay safe and healthy, [Interim recommendations for intake of companion animals from households where humans with COVID-19 are present](#) were developed collaboratively by the American Veterinary Medical Association, the University of Wisconsin-Madison Shelter Medicine Program, the Association of Shelter Veterinarians, the University of California-Davis Koret Shelter Medicine Program, the University of Florida Maddie's Shelter Medicine Program, and the Centers for Disease Control and Prevention (CDC) COVID-19 One Health Team.

Q: What changes to my normal shelter protocols do I need to make to house pets from homes with COVID-19 human patients?

By far the greatest risk of COVID-19 exposure to animal shelter and control staff, volunteers, and the public comes from person-to-person contact. Every effort should be made to allow companion animals to continue to cohabitate with their family, when possible. If temporary sheltering becomes necessary, information in the [Interim recommendations for intake of companion animals from households where humans with COVID-19 are present](#) will be helpful. Coordination with local animal and public health officials is key to appropriate handling and to minimizing infection risk for animal control and shelter staff and volunteers. For additional information, see [animal services and temporary sheltering](#) in the [AVMA's COVID-19 webcenter](#).

Q: How can animal shelters and animal control focus their activities so as to best support animal needs during the pandemic while keeping their staff as safe as possible?

During this time of declared COVID-19 National and State Public Health Emergencies, some temporary changes to the way animal care and control facilities provide services are needed to address the needs of human health, support conservation of scarce PPE, promote good animal welfare, and maintain adequate capacity for essential shelter services. Therefore, the AVMA joins the Association of Shelter Veterinarians (ASV), University of Wisconsin-Madison Shelter Medicine Program, University of California-Davis Koret Shelter Medicine Program, University of Florida Maddie's Shelter Program, and Dr. Jeanette O'Quin of The Ohio State University in endorsing the following recommendations from the National Animal Control & Control Association (NACA) during the COVID-19 pandemic:

- Animal control agencies should take active measures to eliminate non-essential animal shelter intakes
- Discontinue low priority/non-emergency activity (e.g. non-aggressive stray animal pick-up, nuisance complaints)
- At this time, continue to respond to emergency and high-priority calls (e.g. law enforcement assistance, injured or sick stray animals, bite and dangerous dog complaints)
- To preserve critical medical supplies and minimize potential for human contact exposure, shelters and spay-neuter clinics should limit surgeries to emergency cases only
- The lack of immediately available spay and neuter services should not be a reason for shelter euthanasia

Also, the AVMA urges local policymakers to temporarily exercise discretion with respect to recommendations against sales or adoptions of intact dogs and cats by humane organizations and animal control agencies (e.g., those shared within the [AVMA policy on dog and cat population control](#)) during declared State and National COVID-19 Public Health Emergencies. Such discretion is needed to address the needs of human health, support conservation of scarce PPE, promote good animal welfare, and maintain adequate capacity for essential shelter services. Potential negative impacts on efforts to effectively manage companion animal overpopulation are recognized, but deemed to be manageable at this time.

Q: Is the COVID-19 pandemic causing drug and medical supply shortages?

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), surgical drapes, and—more recently—ventilators.

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; this has also been done for human medical products. 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 in some communities and across some states executive orders have been issued directing veterinarians to postpone non-urgent patient visits and procedures in an effort to support social distancing and preserve existing supplies of PPE. With respect to the latter, 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) and AVMA has compiled related [guidance](#).

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@atavma.org to report any supply chain issues of concern. Include detailed information about the product of concern and its manufacturer/distributor, if possible.

Q: I've heard that veterinarians are being asked to donate, or are in some cases, being directed by executive order to provide PPE and ventilators to help physicians care for human patients. Is this true?

Some federal, state, and local officials and our human medical colleagues have begun reaching out requesting donations and in some areas veterinarians have been directed to turn over their PPE (see AVMA's [state orders spreadsheet](#) for information on directives and check with your [state veterinary medical association](#) and [state veterinary medical board](#) to confirm the situation in your area).

In collaboration with the Association of American Veterinary Medical Colleges, on campuses where there are both veterinary teaching hospitals and human medical teaching hospitals, veterinary teaching hospital staff are reaching out to see how they can collaborate with their human medical colleagues to help fill gaps in equipment, sharing available PPE, needles, syringes, and medication, as well as sharing ventilators and repurposing anesthetic machines that might be used as ventilators. Veterinary teaching hospitals (large and small animal) have oxygen supplies and also can be converted into facilities for human health care if needed.

In addition, the [American College of Veterinary Emergency and Critical Care](#), in collaboration with the [American College of Veterinary Anesthesia and Analgesia](#), has been spearheading collection of information regarding ventilator availability from veterinary emergency and critical care facilities around the country and some specialty hospitals have already pledged access to those ventilators to human health care facilities in their communities. On March 24 the FDA issued an [Emergency Use Authorization](#) for ventilators, anesthesia gas machines modified for use as ventilators, and positive pressure breathing devices modified for use as ventilators, ventilator tubing connectors and ventilator accessories during the COVID-19 pandemic.

Q: How can veterinarians and their teams provide supplies, services, or both to assist human healthcare providers in this public health emergency?

Veterinary practitioners wanting to donate PPE or other medical supplies, or wanting to volunteer as ancillary personnel, are encouraged to first reach out to their local and [state veterinary medical associations](#) to see if current local or state orders to do so exist and/or if the veterinary associations have established a system to coordinate donations or volunteer participation. Veterinarians should keep in mind that volunteering to assist in the human medical response carries increased risk for their own health and may also impact when/how they are able to return to veterinary practice (mandated isolation/quarantines).

Direct collaboration between local [state veterinary medical associations](#) and local and state emergency management operation centers and agencies facilitates identification and fulfillment of needs, helps to ensure appropriate resource allocations, and allows more direct coordination with federal emergency management efforts as needed. Again, start local—this helps not only to direct materials to where they are immediately needed, but also conserves resources required (people and transportation) to get those materials transferred. More information on federal efforts is available through the [FEMA](#).

Q: How are veterinarians outside the United States handling the COVID-19 pandemic?

The AVMA has been in contact with its international colleagues to share resources and gather information regarding how the veterinary profession is faring in their regions.

Many veterinary associations and regulatory boards have advocated for veterinary medicine to be considered an essential business by local and national governments. The World Veterinary Association (WVA) and World Organisation for Animal Health (OIE) published a joint statement titled [COVID-19 and Designation of Veterinary Work as Essential Business](#). The Federation of Veterinarians of Europe (FVE) and World Small Animal Veterinary Association (WSAVA) also have statements posted on their websites, as do the Italian, British, French, and Spanish veterinary associations and/or regulatory bodies. However, services provided by veterinarians may not all be equally essential. Additionally, services considered essential initially may become non-essential as governments enact stricter travel restrictions and shelter-in-place requirements to mitigate the spread of COVID-19. In some cases, categorization of specific procedures as essential or non-essential has led to differences of opinion between veterinary associations in any given country or between the association and the regulatory body. Essential services always include those associated with food safety and security, public health, and urgent or emergent medical and surgical procedures. However, even services related to food safety and public health can be recategorized from essential to non-essential. For example, on March 26, the Italian government suspended all animal health-related epidemiological surveillance activities except those related to African swine fever and highly pathogenic avian influenza.

Human medical needs for personal protective equipment (PPE) are prioritized over veterinary medical needs across Europe. However, PPE is still needed at veterinary clinics to help prevent spread of COVID-19 and protect animal and veterinary health during certain procedures. European veterinary associations and regulatory bodies have been continually developing and updating resources to assist their member veterinarians in determining how best to protect their animal health care teams and clients while preserving PPE and still providing essential medical and surgical services for their animal patients.

The [Federazione Nazionale degli Ordini Dei Veterinari Italiani](#) (FNOVI; National Federation of Italian Veterinary Orders), which is the regulatory body for veterinary medicine in Italy, is one association that has stepped up to assist Italian veterinarians during this crisis. FNOVI has responded to multiple government decrees enacted since late February to help control the devastating COVID-19 epidemic sweeping that nation by providing guidance to Italian veterinarians on allowed movements and procedures, as well as on government-funded compensation for employees required to take leave for health or business reasons during the pandemic.

In Italy, each veterinary clinic that stays open must guarantee that all measures designed to prevent spread of COVID-19 are in place. As recommended by FNOVI, common measures taken by Italian veterinarians include use of facemasks and gloves, maintaining a two-meter distance between clients and staff, screening clients at the reception area, washing hands, keeping a disinfectant dispenser in each exam room and in the waiting room and reminding clients and staff to use these dispensers often, and triaging clients/patients outside the clinic and/or by phone. These methods appear to be effective.

The same is true on farms. All biosecurity measures and use of appropriate PPE have been implemented, but the shortage of disposable materials has had a significant impact on large and food animal veterinarians, especially in Lombardia, the worst COVID-19 cluster area, which is also the most important area for animal agriculture in Italy. Veterinarians working in Italian slaughterhouses/food inspection are essential government employees under public services and, for the most part, are continuing to work as normal. Thus far, these veterinarians have access to sufficient PPE.

Ongoing shortages of PPE and continuing escalation of COVID-19 cases and deaths across Italy resulted in a March 9 government decree that restricted veterinary visits and examinations to emergency needs only. FNOVI released guidelines to help define emergency, but not all veterinarians concurred with those guidelines. Many struggled with the need for revenue to keep their businesses open and staff paid and the need to comply with best practices, including the use of PPE, to help mitigate the impact of COVID-19 on human health. Although the use of appropriate measures such as distance and PPE and limiting cases seen to those that are urgent and emergent have seemed effective in limiting spread of COVID-19 at veterinary clinics, more and more clinics are closing—largely because of ongoing and severe PPE shortages and the continued spread of COVID-19 across Italy. These closures, in turn, result in lost revenue and staff layoffs. Some of the economic losses are being met by financial aid packages offered by the national government.

CM Research, through [Vetspanel](#), is conducting an ongoing survey to address the impact of COVID-19 on companion animal veterinary professionals and their practices. Initiated on March 13, the survey is being repeated every two to three weeks for as long as the COVID-19 outbreak continues. Respondents include a mix of owners and partners at companion animal practices, from small and large independently and corporate-owned practices across five European countries, the USA, and Australia. [Results are available online](#) and include:

- The almost universal belief that the pandemic will get worse, even in countries where it has been present for longer (e.g. Italy and Spain); only about 1% of respondents think things are improving.
- An overall concern about the risks of the pandemic, which is highly correlated with experience. This suggests that concern will only increase in those countries where prevalence of COVID-19 is not yet high.
- Social distancing measures adopted in Spain and Italy have resulted in an increased use of online tools to deliver advice to clients.

Veterinary businesses and COVID-19

Q: Is veterinary medicine considered an "essential business"?

The AVMA is working hard to ensure that [veterinary medicine is classified as an essential business](#). With various jurisdictions limiting provision of goods and services to those that are "essential", AVMA has been advocating strongly on behalf of veterinary practices to be considered "essential" so that veterinarians can continue to provide critical services in our communities. The National Association of Veterinary Technicians in America (NAVTA) has been actively supporting this as well. This is important in cases where non-essential retail facilities are asked to close or repurpose personal protective equipment (PPE) due to COVID-19.

Veterinary teams provide essential care for ill and injured animals, play a critical role in protecting the health of animals that enter the food supply, and serve as trusted members of the local community in disaster situations. On March 19, 2020, the U.S. Department of Homeland Security issued [Guidance on the Essential Critical Infrastructure Workforce](#). Animal health and veterinary services are included. While this is not a federal mandate, it is a recommendation to state and local jurisdictions. In some—not all—states or locales where non-essential businesses have been told to close, or in the case of curfews, employees of essential businesses may be asked to show evidence of their employment within those essential businesses when traveling to and from work. AVMA has created a [template](#) for a COVID-19 Essential Employee Authorization Letter to assist.

Q: Are all veterinary clinics essential businesses?

The AVMA advocates that all veterinary clinics are [essential businesses](#). However, state, county, and municipal officials have authority to determine which businesses are, and are not, essential and, if essential, what activities may or may not be conducted in a given locality. Information and links to any existing executive orders have been compiled in the AVMA's [state orders spreadsheet](#), but please confirm by contacting your [state veterinary medical association](#) or [state board of veterinary medicine](#).

Q: If veterinary clinics are essential businesses in my locale, what services may I provide?

Within the [Caring for patients and interacting with clients](#) section of the AVMA's COVID-19 webcenter, the AVMA suggests a potential strategy to ensure animals continue to be cared for while limiting staff and public exposure to COVID-19 is to consider [rescheduling](#) appointments for cases that are not urgent.

At this time, AVMA has not identified specific services or procedures as urgent or non-urgent but does offer questions for consideration in [this resource](#). Importantly, statements by federal agencies and states identify allowed services. Now that the CARES Act has passed [more information is available in the AVMA's [resource](#)], some practice owners may feel less financially obligated to accept certain appointments to maintain employment of their staff.

On March 16, 2020, President Trump issued Coronavirus Guidance for America stating: "If you work in a critical infrastructure industry, as defined by the Department of Homeland Security, such as healthcare services and pharmaceutical and food supply, you have a special responsibility to maintain your normal work schedule."

The Department of Homeland Security (through the Cybersecurity and Infrastructure Security Agency [CISA]) has stated the Food and Agriculture Industry portion of the [Essential Critical Infrastructure Workforce](#) includes: "Animal agriculture workers to include those employed in veterinary health (including those involved in supporting emergency veterinary or livestock services [emphasis added]); raising of animals for

food; animal production operations; livestock markets; slaughter and packing plants, manufacturers, renderers, and associated regulatory and government workforce."

AVMA has posted a compilation of [state orders](#). Because these orders change frequently, please regularly check the site for updates and confirm with your [state veterinary medical association](#) and [state board of veterinary medicine](#). Also review AVMA's guidance for determining when cases are urgent versus non-urgent as potential considerations for your practice.

Q: Are federal or state declarations likely to change?

At this time, federal and many state statements have extended risk mitigation procedures through the end of April. Mitigation steps taken in this national health emergency continue to be fluid as additional information becomes available. Please check AVMA's COVID-19 [webcenter](#) and those of your [state veterinary medical association](#), and [state board of veterinary medicine](#), to keep abreast of any adjustments to risk mitigation measures in your area.

Q: Has AVMA developed a template for documentation that veterinary workers can keep on their person when traveling in states that have enacted safety orders?

Yes, AVMA's template is [here](#). Please check with your [state veterinary medical association](#) or [state board of veterinary medicine](#) or both to confirm local requirements.

Q: I work part-time at a veterinary clinic whose owner and primary veterinarian is a Canadian citizen who commutes to work daily across the United States - Canadian border. Recently he was not allowed to cross the border. How can he clarify that his veterinary practice is an essential business?

On March 20, 2020, the United States and Canada announced that they are temporarily restricting all non-essential travel across its borders. "Non-essential" travel includes travel that is considered tourism or recreational in nature. For questions, contact the [Canada Border Services Agency](#). Additional information about crossing the U.S. Canadian border can be found here: [U.S.-Canada Joint Initiative: Temporary Restriction of Travellers Crossing the U.S.-Canada Border for Non-Essential Purposes](#).

The AVMA advocates that [veterinary practices be considered essential businesses](#) in cases where non-essential retail facilities are asked to close or repurpose personal protective equipment (PPE) due to COVID-19. Veterinary teams provide essential animal care, play a critical role in protecting the health of animals that enter the food supply, and serve as trusted members of the local community in disaster situations. Classifying veterinary practices as essential businesses allows veterinarians to continue to provide care for their patients.

The decision to classify businesses as essential is guided by the Department of Homeland Security's Cybersecurity and Infrastructure Security Agency (CISA), which identifies [critical infrastructure](#) sectors and the essential workers needed to maintain the services and functions Americans depend on daily and need to be able to operate resiliently during the COVID-19 pandemic response. This document gives guidance to state, local, tribal, and territorial jurisdictions and the private sector on defining essential critical infrastructure workers. Information about individual state's decisions to classify veterinary practices as essential can be found here: [COVID-19 State Orders](#).

Q: I'm a self-employed relief veterinarian. I'm still working, but my shifts have been drastically reduced due to the current crisis. Is there any federal aid that would be applicable to me?

The COVID-19 stimulus packages recognize the needs of self-employed and independent contractors, and there are two loan opportunities we want to bring to your attention. The newly created [Paycheck Protection Program](#) offers 8 weeks of assistance for cash flow concerns, including your compensation, and is available to self-employed individuals beginning April 10. Because this new program is first come, first served, we encourage veterinarians to contact their existing lender or the bank they have a relationship with as soon as possible to discuss your needs and how to apply. The stimulus also expands eligibility for the Small Business Administration's [Economic Injury Disaster Loan \(EIDL\)](#) program, that provides working capital loans to help businesses overcome temporary losses in revenue. EIDL now allows for an advance of up to \$10,000, to be distributed within three days, to cover payroll, rent and mortgage payments, and other repayment obligations. AVMA has created a [series of issue briefs](#) on the COVID-19 stimulus provisions impacting veterinarians. AVMA's small business loans brief includes more details on PPP and EIDL, as well as links to the Small Business Administration and a sample application to help you consider these options. Additional information on PPP and EIDL is available on [SBA's website](#).

Q: As a small business owner, I pay my employees' health insurance, but we are barely making payroll. What's going to happen when I can't pay their health insurance?

There are two loan programs that could help with this: [Paycheck Protection Program](#) and the [Emergency Injury Disaster Loan \(EIDL\) with \\$10,000 advance](#). The Paycheck Protection Program is a temporary loan program created for small businesses that offers forgiveness of qualified expenses that include payroll, rent, mortgage interest, or utilities. Payroll costs include health insurance premiums. The Emergency Injury Disaster Loan provides small businesses with working capital loans to help them overcome temporary losses in revenue. COVID-19 legislation expanded the existing EIDL program to provide for an advance of up to \$10,000, distributed within three days, that is used to cover paid sick leave, payroll, rent and mortgage payments, and other repayment obligations. Additional information about these programs can be found on the Small Business Administration webpages on [Coronavirus Relief Options](#).

Congress also provided [new tax provisions](#) to help small businesses through the COVID-19 economic crisis. The mandated paid family and medical leave tax credit provides a dollar-for-dollar tax offset against the paid family and medical leave benefits paid by the employer. The mandated paid sick leave tax credit provides a dollar-for-dollar tax offset against payroll taxes for paid sick leave benefits. The employee retention credit provides a refundable payroll tax credit for 50 percent of up to \$10,000 in wages paid by eligible employers whose business has been financially impacted by COVID-19. Delay of employer payroll taxes allows employers to delay the payment of the employer share of

payroll taxes through 2020. The deferred tax will be paid over the next two years, with half of the amount required to be paid by December 31, 2021, and the other half by December 31, 2022.

Recovery rebates provide an advanced tax credit of \$1,200 for individual filers (\$2400 for joint filers) plus \$500 per qualifying child, for residents who are not a dependent of another taxpayer and have a work-eligible social security number. The law also provides a temporary waiver of the 10 percent tax on early distributions from retirement accounts for corona-virus related distribution, including COVID-19 illness and economic harm. Additional information about COVID-19 tax relief can be found on the Internal Revenue Service website: [Coronavirus Tax Relief and Economic Impact Payments](#) | [Internal Revenue Service](#).

Q: How can a small veterinary clinic with fewer than 25 employees pay employees 12 weeks' wages under the new Families First Response Act? How is it that businesses with more than 500 employees are exempt? How and where do smaller businesses file to be exempt?

To address the financial strain associated with the new federal paid and sick leave mandates, Congress provided authority for an exemption for small businesses with fewer than 50 employees from providing leave when the imposition of the requirements would jeopardize the viability of the business as a going concern. A small business may claim the exemption if an authorized officer of the business determines that one of the three factors are true:

- The provision of paid sick leave or expanded family and medical leave would result in the small business's expenses and financial obligations exceeding available business revenues and cause the small business to cease operating at a minimal capacity;
- The absence of the employee or employees requesting paid sick leave or expanded family and medical leave would entail a substantial risk to the financial health or operational capabilities of the small business because of their specialized skills, knowledge of the business, or responsibilities; or
- There are not sufficient workers who are able, willing, and qualified, and who will be available at the time and place needed, to perform the labor or services provided by the employee or employees requesting paid sick leave or expanded family and medical leave, and these labor or services are needed for the small business to operate at a minimal capacity.
- Veterinary practices that determine they cannot provide paid leave based upon the exemption, must be prepared to demonstrate why and how the practice fits into one of the three categories detailed above.

As of the time this response was written, the [Department of Labor](#) has directed business owners to document how they meet the criteria detailed above and wait for further guidance from the Agency on how to proceed. The AVMA has more information on the paid leave exemption [here](#).

Q. What is status of the CARES Act loan and overall benefits if an employee is let go for cause?

The AVMA is waiting for additional guidance from the Department of Treasury. Currently, they are saying the following about forgiveness: you will owe money when your loan is due if you use the loan amount for anything other than payroll costs, mortgage interest, rent, and utilities payments over the eight weeks after getting the loan. Due to likely high subscription, it is anticipated that not more than 25% of the forgiven amount may be for non-payroll costs.

You will also owe money if you do not maintain your staff and payroll.

- Number of Staff: Your loan forgiveness will be reduced if you decrease your full-time employee headcount.
- Level of Payroll: Your loan forgiveness will also be reduced if you decrease salaries and wages by more than 25% for any employee that made less than \$100,000 annualized in 2019.
- Re-Hiring: You have until June 30, 2020 to restore your full-time employment and salary levels for any changes made between February 15, 2020 and April 26, 2020.

Q: Does AVMA have any resources for veterinarians to help them understand what steps they need to take to be in compliance with COVID-19 relief legislation?

The AVMA has a significant amount of information about the COVID-19 legislation on our website. This includes information on the [Families First Coronavirus Response Act](#) and the [Coronavirus Aid, Relief and Economic Security Act \(CARES Act\)](#). In addition, the AVMA website contains specific information on provisions in the legislation relevant to the veterinary profession. This includes information on [Federal student loan relief](#); [new tax provisions](#); [paid leave requirements](#); [paid leave exemptions](#); [small business loans](#); and [unemployment insurance](#).

Q: If we normally make a deposit once a month to pay the 941 payroll taxes, do we not pay them, or do we pay just the employer part? What about withholding Medicare and Social Security?

The IRS has information about the COVID-19-Related Tax Credits for Required Paid Leave Provided by Small and Midsize Businesses FAQs at <https://www.irs.gov/newsroom/covid-19-related-tax-credits-for-required-paid-leave-provided-by-small-and-midsize-businesses-faqs>.

Q: In addition to what I see in the AVMA [COVID-19 webcenter](#), what are some other resources, business and otherwise, that would be worth exploring at this time?

- The [veterinary industry impact tracker](#) is a dashboard created by VetSuccess to track the daily impact of COVID-19 on the veterinary industry.
- The Center for Disease Control and Prevention's [interim guidance for businesses and employers to plan and respond to COVID-19](#).
- 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](#): The Small Business Administration (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.
- Pet Industry Joint Advisory Council (PIJAC) [listing of state and local government business guidance, assistance, and resources](#)

Footer: AVMA Family

The AVMA Family

- [American Veterinary Medical Foundation \(AVMF\)](#)
 - [AVMA LIFE](#)
 - [AVMA PLIT](#)
 - [AVMA Political Action Committee \(PAC\)](#)
 - [Student AVMA \(SAVMA\)](#)
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- [American Veterinary Medical Foundation \(AVMF\)](#)
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