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CORONAVIRUS DISEASE 2019 UPDATE (22): COMPANION ANIMAL, DOG SUSPECTED, REQUEST FOR INFORMATION
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A ProMED-mail post
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International Society for Infectious Diseases
http://www.isid.org

[1] Hong Kong: dog owned by a COVID-19 patient, suspected infection
Date: Fri 28 Feb 2020 05:51 EST
Source: MailOnLine [abridged, edited]
https://www.dailymail.co.uk/news/article-8053455/Patients-pet-Pomeranian-comes-disease-Hong-Kong.html

A pet Pomeranian dog has tested positive for the coronavirus after its owner became infected with the disease in Hong Kong.

"Nasal and oral cavity samples were tested weak positive to COVID-19 virus [sic]," an Agriculture, Fisheries and Conservation Department (AFCD) said, without explaining why they tested the animal in the first place [see comment].

The dog was collected from the owner's home on Wednesday [26 Feb 2020], after the woman was diagnosed with the contagion and placed in a hospital isolation ward. The canine has no "relevant symptoms," the AFCD said.

Local media said the owner of the dog is a businesswoman; AFP separately reported the dog's owner is 60 years old.

The pooch is the only dog at the quarantine facility, which is based in near Zhuhai-Macao Bridge, according to Dimsum Daily. The dog will be kept at the centre for 14 days. Repeated tests will be done until the dog is cleared of the virus.

"It would be closely monitored and undergo further tests to confirm if it really has the virus or if this is a result of environmental contamination of the dog's mouth and nose," the AFCD said.

In a statement the agency said: "The AFCD does not have evidence that pet animals can be infected with COVID-19 virus or can be a source of infection to people." While there is no evidence domestic animals such as dogs and cats can catch the virus or transmit it to humans, the department said pets of infected people should be quarantined for 14 days.

The spokesman said all pet owners should maintain a good habit of hygiene and wash their hands after having contact with their pets. They added that pet owners should wear masks when going out, and if their pets experience a change in health then they should go to the vets.

It is believed to be the 1st case of a pet having the virus and comes as cases worldwide continue to be identified.

Dr. Niels Pedersen, a professor at the UC Davis School of Veterinary Medicine and an expert on infectious and immunologic diseases in dogs and cats, wrote in a post on the UC Davis website (https://www.vetmed.ucdavis.edu/news/can-pets-contract-coronavirus-humans-or-vice-versa): "You won't get or give the coronavirus to your family pet.

"They [coronaviruses] tend to be very species specific, and cross-species transmission is uncommon," he added.

"The Wuhan coronavirus appears to have successfully adapted to humans (i.e., it has become humanized) and is therefore looming as an even more severe disease problem than MERS and SARS [...]. There is no evidence that coronaviruses of our common veterinary species have entered humans in the recent past or vice versa.

"However, the tendency for coronaviruses to jump species is an ongoing occurrence, and it is possible that a coronavirus from a common pet species such as a cat or dog may enter humans and cause disease sometime in the future. If it should ever humanize, it will no longer be a cat or dog virus, but rather a new human virus."

The owner was said to have developed symptoms on [20 Feb 2020] and was diagnosed with the coronavirus 5 days later [25 Feb 2020]. Local media reported that she went out to drink tea and attended a wedding while infected.

The financial hub has confirmed 93 cases of [COVID-19], with 2 deaths earlier this month [February 2020].

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[2] OIE working group on COVID-19
Date: Fri 29 Feb 2020 [accessed]
Source: OIE [summarized, edited]
https://www.oie.int/fileadmin/Home/eng/Our_scientific_expertise/docs/pdf/COV-19/COVID19_21Feb.pdf

In January 2020, the OIE called a group of international experts with the purpose to discuss what is known about the role of animals in the emergence of COVID-19 and to make preliminary recommendations relating to investigations at the human-animal ecosystems interface.

Priorities for research to investigate the animal source were discussed and were presented at the WHO Global Research and Innovation Forum (11-12 Feb 2020) by the President of the OIE Wildlife Working Group.

Some of the outcomes from the discussion of the OIE informal advisory group on COVID-19 follow:

1. General immediate recommendations
- The Advisory Group offers technical collaboration to support investigations into the animal source.
- Multisectoral One Health collaboration including animal health, public health, and wildlife experts should be encouraged.
- Immediate sharing of information from field investigations so far (including positive and negative results) should be encouraged.

2. Research priorities (broad categories)
(a) Surveillance and risk assessment

Strategic objective: To develop a better understanding of the key determinants of COVID-19 virus infection and transmission dynamics in animals (including at ecosystem level) and to humans to inform research, surveillance, and control.
Suggestions: Identify the animal reservoir and intermediate host through surveillance/investigation strategies that consider:
- Transmission pathways
- Host range
- Dynamics of wildlife trade
- Possible role of livestock
- Possible role of companion animals in epidemiology of human disease

(b) Diagnostics
Strategic objective: To develop diagnostic tools (for use in animal species) that provide consistent optimal results in any setting.
Suggestions:
- Serology
- RT-PCR
- Other tests

(c) Prevention and control interventions
Strategic objective: To guide targeted and effective evidence-based interventions.
Suggestions: In addition to the priorities listed under Surveillance and risk assessment above:
- Collect baseline data to inform prevention and control strategies
- Assess drivers of high-risk practices
- Develop strategies to reduce risk of spillover events
- Information from laboratory studies

(d) Host-pathogen interaction
Strategic objective: To improve understanding of virus-host interactions and factors that affect the interactions, such as disease pathogenesis, transmissibility, and immune responses, to better inform infection control.
Suggestions:
- Host pathogen studies
- Behavioral risk

(e) Socioeconomics and policy
Strategic objective: To improve the effectiveness of detection, prevention and control measures through the integration of social, economic and institutional analyses of the environment affected.
Suggestions:
- Wildlife trade
- Wildlife capture vs production
- Wildlife consumption
- Domestic animals

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[The complete information of the outcomes from the discussion of the OIE informal advisory group on COVID-19 can be read at the source URL for section [2] above.

The confirmation of SARS-CoV-2 infection of the exposed dog in Hong Kong is pending. In the absence of clinical disease, serological tests should be applied.

We are not aware of another COVID-19-affected country applying a similar policy as Hong Kong's AFCD, namely, quarantining

pets of infected people for 14 days. This, so far solitary policy, is likely being driven by adhering to the "precautionary principle," an internationally recognised strategy for approaching issues of potential harm when extensive scientific knowledge on the matter is lacking. Such protections should be relaxed only if further scientific findings emerge that provide sound evidence that no harm will result.

The following Q&A's are extracted from a publication, dated 18 Feb 2020, by WSAVA (World Small Animals Veterinary Association; please see also in 20200218.7002276):

"1. Can 2019-nCoV infect domestic animals?
- Currently there is no evidence that pets or other domestic animals can be infected with this new coronavirus. Additionally, there is currently no evidence that pets or other domestic animals might be a source of infection to people with the new coronavirus. This is a rapidly evolving situation and information will be updated as it becomes available.

2. Should I avoid contact with pets or other animals if I am sick?
- Do not handle pets or other animals while sick. Although there have not been reports of pets or other animals becoming sick with 2019-nCoV, several types of coronaviruses can cause illness in animals and spread between animals and people. Until we know more, avoid contact with animals and wear a facemask if you must be around animals or care for a pet in order to protect the pet from the possibility of disease transmission.

3. What should I do if my pet or other animal becomes ill and was around a person with novel coronavirus?
- If your pet or other animal becomes ill, call your veterinarian to let them know that you are bringing a sick pet that was exposed to a person with the new coronavirus. Do not take the animal to a veterinary clinic until you have had a discussion with clinic staff. Tell them about any contact the animal may have had with someone with 2019-nCoV infection.

4. If my pet or other animal has been in contact with someone who is sick, can they spread the disease to other people?
- We do not yet know if animals can get infected. We also do not know if they could get sick from this new coronavirus. Currently there is no evidence that pets or other domestic animals can be infected with this new coronavirus. Additionally, there is currently no evidence that pets or other domestic animals might be a source of infection to people with the new coronavirus. This is a rapidly evolving situation and information will be updated as it becomes available."

An update of the above WSAVA document, with fewer unknowns and more concrete advice to practitioners and animal owners, may become feasible if/when more sampling and testing of pets from infected premises, anywhere, are performed, analyzed, and published.

According to one research project (1), cats are included among the animal species that "contain largely favorable 2019-nCoV-contacting residues in their ACE2*, and hence may serve as animal models or intermediate hosts for SARS-CoV-2" (the others are pigs, ferrets and non-human primates). (*Host receptor angiotensin-converting enzyme 2 (ACE2), which regulates both the cross-species and human-to-human transmissions of the virus).

1. Wan Y, Shang J, Graham R, et al. Receptor recognition by novel coronavirus from Wuhan: an analysis based on decade-long structural studies of SARS. J Virol. 2020; pii:JVI.00127-20. doi: 10.1128/JVI.00127-20.

- Mods.AS/CRD

HealthMap/ProMED-mail map:
Hong Kong: https://promedmail.org/promed-post?place=7036661,198]

See Also

COVID-19 update (17): China, animal reservoir, wildlife trade & consumption 20200225.7024245
COVID-19 update (11): animal reservoir, intermediate hosts, pangolin susp 20200220.7009213
COVID-19 update (08): companion animal, RFI 20200218.7002276
COVID-19 update (06): animal reservoir, intermediate hosts 20200217.6997782
Novel coronavirus (42): China, global, COVID-19, SARS-CoV-2, WHO 20200211.6979942
Novel coronavirus (40): animal reservoir, pangolin poss intermediate host, RFI 20200210.6972104
Novel coronavirus (28): China (HU) animal reservoir 20200201.6943858
Novel coronavirus (22): reservoir suggested, bats 20200129.6930718
Novel coronavirus (20): China, wildlife trade ban 20200127.6922060
Novel coronavirus (18): China (HU) animal reservoir 20200125.6915411
Novel coronavirus (15): China (HU) wild animal sources 20200123.6909913
Novel coronavirus (03): China (HU) animal reservoir suggested, RFI 20200114.6887480
Novel coronavirus (01): China (HU) WHO, phylogenetic tree 20200112.6885385
Undiagnosed pneumonia - China (HU) (07): official confirmation of novel coronavirus 20200108.6878869
Undiagnosed pneumonia - China (05): (HU) novel coronavirus identified 20200108.6877694
Undiagnosed pneumonia - China (03): (HU) updates, SARS, MERS ruled out, WHO, RFI 20200105.6872267
Undiagnosed pneumonia - China (01): (HU) wildlife sales, market closed, RFI 20200102.6866757
2019

Undiagnosed pneumonia - China: (HU) RFI 20191230.6864153
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