

Rapid review on quarantining, testing and management of COVID-19 exposed Pets: As public health measures

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Abstract

Background: number of dogs have tested positive for SARS CoV-19 using PCR (Hong Kong, USA), all of these dogs lived with people who have COVID-19, none had signs of illness and however no study has provided evidence of viral shedding or transmission to humans. If a person with a confirmed case of Covid-19 infection had contact with animals, either in the patient's home or elsewhere, a risk assessment will need to be conducted in collaboration with human and animal health officials to determine how to handle the animal(s) and whether quarantine and testing of the animal is warranted.

Objective: To assess, quarantining, test and management of COVID-19 exposed pets.

Methods: Rapid review of literatures on COVID-19 Reverse zoonoses are reviewed.

Results: Based on the availability of this guideline and information EPHI conducting pet testing in Ethiopia

Conclusion: This is the first guiding document for assess, Quarantining, Testing and Management of COVID-19 Exposed Pets for minimizing the spread of covid-19.

Keywords: COVID-19, exposed pet, quarantine, public health

Introduction

The Concept of Management of COVID-19 Exposed

Pets: As Public health measures: More than Seventy five percent of emerging diseases originate in animals (particularly wildlife) like SARS CoV-1, MERS CoV, Ebola, Rift Valley Fever and Avian Influenza because of land use changes, Agricultural intensification, Food industry changes and Wild meat consumption. Infected animals can travel from country to country and continent to continent in a few hours, with increased public health threats, creating increased global health insecurity. On December 31, 2019, China alerted the World Health Organization to a cluster of unusual cases of pneumonia that were diagnosed in Wuhan, Hubei province, China. Although the cause at that time was unknown, the patients' symptoms and clinical features were most suggestive of a viral etiology. On January 7, 2020, officials reported that they had isolated the causative agent behind the cases-a novel corona virus (Currance 2005; AVMA 1995). No reports of natural infection in any livestock or poultry species to date, and also no evidence that livestock or poultry pose a risk to humans, no studies evaluating survival of SARS CoV-2 on fur, hair, skin, feathers or hides. Small number of dogs have tested positive for SARS CoV-19 using PCR (Hong Kong USA), all of these dogs lived with people who have COVID-19, none had signs of illness and however no study has provided evidence of viral shedding or transmission to humans. If a person with a confirmed case of Covid-19 infection had contact with animals, either in the patient's home or

elsewhere, a risk assessment will need to be conducted in collaboration with human and animal health officials to determine how to handle the animal(s) and whether quarantine and testing of the animal is warranted (Mershon MM and AV Tennyson. 1987; Wolff and Hamilton 2020). This guidance document is developed by the Ethiopian public health institute zoonotic disease research team and public health emergency directorate for the management of animal covid-19 exposures for human health issue and to answer major animal-related questions. This document is proposed to provide national and/or Interventional guidance based on the latest scientific evidence and reviewing recommendations from different organizations, for the management of pets, specifically dogs and cats with exposure to COVID-19 (Wolff and Hamilton 2020; WHO 2020).

Materials and Methods

Screening of animals at ports during Exporting/importing

1. Document review: Point of entry screening is a public health measures during movement of animals on arrival or departure of ports by authorities with the possible violence of entry criteria's, symptoms, or risk of exposure to covid-19. Responsible authorities shall review documents of entry of animals as per criteria stated by responsible authorities which are part of the process of identifying evidence of covid-19 tests exposures and, Review of animal history in affected areas shall also be conducted. (Wolff and Hamilton 2020; Soric et al. 2008).

2. Inspection: At the point of entry animals shall be inspected on arrival or departure of ports by the responsible authorities. During inspection, trained public health veterinarian shall examine animals, including relevant data and documentation, to determine if an animal free from covid-19 tests risk. Based on evidence of inspection findings, the authority can decide on implementation of further measures as per document.

2.1. Risk Assessment at the ports whether Quarantine is Necessary for exporting and/or importing of animals: Risk assessment is an iterative process that continues from the time covid-19 tests is first detected to the time the covid-19 outbreak is closed. The estimate of potential risk from the covid-19 is a critical phase to determine which, if any, public health measures may be required to manage the event. Steps that can form the basis of the risk assessment process at the port and community level include:

- **Collecting Information:** A public health veterinarian in collaboration with public health officials should collect the information on identification and medical history of the animals, assessment of risk of exposure and infection, and assessment of contacts of the with other animals and people.
- **Identification and Medical History:** Information should be collected on standard identification of the animals and its relevant medical histories.
- **Assessment of Risk Exposure and Infection:** Information should be collected to help evaluate the animals' history of exposure to exposed animal and human patients and possible risks of acquiring the infection due to these exposures.
- **Assessment of the animal's Activities:** Information should be collected to help assess potential contact with other humans and animals following exposure to the symptomatic patient. This information should also be used to help develop any potentially necessary risk communication messages to areas where the pet may have visited.

Results and Discussion

1. Guidance if Quarantine is warranted for the exposed pets: If quarantine is required for exposed pets, a local or state public or animal health official should be designated as the point of contact (henceforth called "designated official") during the quarantine of the animals in consultation with local or state health departments.

1.1. Criteria for Quarantine Facility or Enclosure

- Minimum of two physical containment levels (i.e., crate/kennel housed in secured facility).
- Secure primary enclosure (for example, a kennel or crate) to prevent escape (for example, no climbing over or digging out) and approved by the designated official.
- The same brand, type, variety of animal food the animal typically eats should be obtained to feed the animal during the quarantine period in order to avoid gastrointestinal episodes that could confuse the clinical picture
- Quarantine may be subject to additional conditions specified by the designated official to protect the public health and animal welfare. While animals moved and confined due to infection may not be a regulatory issue, further guidance on transport and housing animals may be found in local, state, and Federal Animal Welfare Regulations.
- At the end of quarantine period, clean and disinfect the facility

1.2. Transportation of animals to Quarantine Facility

- Any animal handlers should be appropriately trained on and fitted for personal protective equipment (PPE).
- Individual(s) removing animal from home must follow PPE guidance for caretakers listed below.
- Collar, clothing, etc., should be removed from the animal so all possibly contaminated objects are left in the home.
- Clean and disinfect vehicle after arrival at quarantine facility.
- Consider having animal control on site for advice in the event the animal is difficult to capture.

1.3. Laboratory testing of quarantined pets: Every quarantined pets shall tested for covid-19 in the designated and existing government or private laboratories, or newly established for covid-19 test purpose which has been decided by EPHI or other responsible authority which have Standards of the laboratories for covid-19 testing.

The referral linkages (Diagnostic Referral Linkage): Not all tests are expected to be done at the same laboratories. Tests that require sophisticated laboratory and special conditions for specimen storage should be done at laboratories with proven capacity for covid-19 tests. Hence referral linkage of POE and quarantine with proven labs for the test should be established.

Animal Testing for COVID_19: Currently, mass screen routine testing for COVID- 19 is not done for pets.

COVID- 19 virus testing of animal samples will be done according to OIE and WHO covid-19 testing guideline.

- **Specimen collection:** To increase the *likelihood* of detecting COVID- 19 infection, collecting multiple specimens from different sites at different times at the point of entry and/or exit and after symptom onset (Shapiro *et al.*, 2016) Before sample collection the animal shall be Anaesthetized or use any other controlling mechanisms. upper respiratory tract (Nasopharyngeal, oropharyngeal) and rectal swabs will be collected with experienced professionals which can be placed in the tube (World Organisation for Animal Health,2020).
- **Specimen transportation, processing and storage:** Samples will be collected in viral transport medium (VTM) containing antifungal and antibiotic supplements. Then samples will be triple packaged and transported to EPHI COVID-19 testing laboratories in cold chain. Upon samples arrival to EPHI, the primary package will be removed under biosafety level-2 and disinfect with bleach and ready for viral RNA extraction. As Specimens planned to be performed within 24 hours can be stored at 4°C; those that cannot be detected within 24 hours should be stored at -70°C or below to maintain viral integrity (Cork and Halliwell 2019).
- **Management/Treatment Referral Linkage:** Covid-19 cases shall be managed and treated per the prevailing standard of care. There shall be designated treatment facilities for disease conditions identified at the established facilities. These facilities need to have a standard set up to treat the cases as per these national guidelines. Treatment facilities designated for such purpose may be existing vet facilities or newly established for this purpose as situations may dictate. Transport arrangements to transfer cases to the treatment centers should be put in place. Infection prevention measures should be strictly observed to prevent transmission at the Community, point of entry, quarantine, management center and during the transfer.

2. Criteria for Caretakers

- Be limited to as few pets as possible (minimum of two, so a backup is available in the event the primary caretaker is not available).
- Have experience handling the appropriate animal species.
- Is required to be appropriately trained on and fitted for PPE.
- Wear PPE when caring for the animal, while in its enclosure, or when handling waste material.
- Follow other general guidance for putting on (donning) and taking off (doffing) PPE and hand hygiene. Taking off PPE is the step during which a responder is most likely to become contaminated, so training and attention to that process is critical.
- Maintain an animal caretaker log, including name, date, and time animal attended, and any notes on the animal's appearance or behavior.

3. Health Monitoring of Caretakers

- Caretaker should voluntarily self-monitor for fever twice daily.
- Report a fever (any elevated temperature) to designated official immediately.
- Report any symptoms of illness immediately to the designated official for further evaluation.

4. Health Monitoring of Dog or Cat

- Direct contact with the dog or cat's body fluids and waste must be avoided during the quarantine period.
- An exposed pet will be monitored with a public health veterinarian as outlined above for a minimum of 21 days following the last date of exposure to the symptomatic COVID- 19 patient. The dog or cat should be monitored for general signs of illness.
- Other potential signs of illness, including decreased appetite, lethargy, vomiting, and diarrhea should be closely monitored.
- During the quarantine period, the dog or cat's caretaker must monitor the pet's behavior and health status. Health status will be evaluated by observation unless apparent illness indicates the need for further assessment.
- The caretaker will immediately notify the designated veterinarian of any abnormalities in the dog or cat's health or behavior. The veterinarian will determine if the designated official should be notified.
- If the dog or cat has a fever or other concerning signs or symptoms, contact the designated official immediately.
- In the case of a dog or cat developing an unrelated condition, the situation would be addressed on a case-by-case basis, based on assessment by the designated veterinarian.
- Caretakers should provide daily updates to the designated official who will provide updates to the pet's owner.

5. Waste Disposal: Primary containment (e.g. crate or kennel) should be cleaned at least once daily to

remove waste. The dog or cat should be moved to another crate or kennel during the cleaning process.

6. Record keeping: Maintain an animal caretaker/kennel log, including name, date, time animal attended, and any notes on the animal's appearance or behavior, (Department for environment, food and rural affairs and Animal and Plant Health Agency 2020; USDA 2020).

4. Minimum Criteria to Release animals from Quarantine

The animal will be considered releasable and able to move out of quarantine after all three criteria listed below are met:

- A minimum of 14 days in quarantine.
- Free from classical signs of covid-19 in pets
- Only if animal tested and a confirmed negative test for COVID-19 virus based on all appropriate specimens. Evaluation by the designated veterinarian to ensure the animal is healthy upon release or to determine the appropriate course of action for an animal exhibiting any signs of illness. It is recommended, before release of animal from quarantine, to bathe the animal so it will be clean when returned to the owner. This should be done after all testing results have been confirmed (Ecdc 2020; IHR 2005).

Conclusion

This is the first guiding document to assess, Quarantining, Testing and Management of COVID-19 Exposed Pets for minimizing the spread of covid-19.

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