



Animal &
Plant Health
Agency

APHA Briefing Note 18/20

SARS-CoV-2 in Animals – Case Definition, Testing and International Reporting Obligations

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Purpose

To provide advice to veterinarians and veterinary diagnostic laboratories on testing for Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) in animals. To advise on the professional obligations associated with reporting and the process to report positive test results to the relevant competent authority and Chief Veterinary Officer (CVO) in support of the UK's international reporting obligations to the World Animal Health Organisation (OIE).

N.B. This note is applicable to ALL veterinary practitioners including Official Veterinarians (OVs) and veterinary diagnostic laboratories considering SARS-CoV-2 testing.

To be read in conjunction with:

- APHA Briefing Note [10/20](#) Advice for Veterinarians and their Clients on Pets and COVID-19.

Background

1. There is emerging evidence that some animals can become infected with Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) (the causative agent of COVID-19) following close contact with infected humans (a reverse zoonosis).
2. Globally only a small number of cases of naturally acquired SARS-CoV-2 infections in animals have been reported, the majority of which had had contact with infected households or people. We have confirmed historical infection in one cat in the UK, from a household with COVID-19 infected humans. The cat had been co-infected with another respiratory virus but has now made a full recovery. There was no transmission to other cats in the household. We still consider human-to-human transmission is responsible for the burden of disease in the UK.
3. Government is aware that there is increasing interest amongst owners, veterinary practitioners, universities and veterinary diagnostic laboratories in testing for SARS-CoV-2 in animals. Government is also aware that such testing capability exists, although as yet there is no indication that commercial testing has begun in the UK. Government's focus is on providing testing for SARS-CoV-2 for humans.

4. Testing for SARS-CoV-2 should only be undertaken where it is in the interest of the health and welfare of the animal.
5. The animals which have tested positive for SARS-CoV-2 to date have shown only mild respiratory signs and gastrointestinal distress. In the absence of a specific treatment for the virus, testing for SARS-CoV-2 has not and should not result in alteration to case management.
6. Collecting samples from animals must only be undertaken with due consideration to the Royal College of Veterinary Surgeons (RCVS) guidelines on veterinary work during the current social distancing requirements.
7. The detection of infection with SARS-CoV-2 in animals meets the criteria for reporting to the World Animal Health Organisation (OIE) (of which the UK is a member country) as an emerging infection in accordance with the OIE Terrestrial Animal Health Code.
8. SARS-CoV-2 is currently not a notifiable disease in animals in the UK (or EU) Nevertheless, veterinarians have a professional obligation to report positive test results to the competent authority (Office of the UK Chief Veterinary Officer (CVO) in England and respective CVOs in the devolved administrations) to support the UK's international reporting obligations to the OIE.

If you wish to consider testing an animal for SARS-CoV-2

9. Government does not offer a diagnostic service for SARS-CoV-2 infection in animals.
10. If you wish to consider private testing this should only be undertaken where it is in the interest of the health and welfare of the animal.
11. It should be noted that under the Veterinary Surgeons Act 1966 sampling and testing should generally provide a benefit to the animal i.e. be of diagnostic and treatment value. Sampling to answer research investigations is regulated by The Home Office under The Animal (Scientific Procedures) Act 1986, though clinical research may also be conducted, under appropriate ethical review.
12. Government advises that private testing should only be considered in animals which meet all four of the criteria set out in the following case definition. This case definition has been assessed based on the current scientific knowledge of SARS-CoV-2 infection in animals:
 - a. The animal is a Felid, Canid or Mustelid.
AND
 - b. It is exhibiting a combination of the following clinical signs as determined by a veterinary professional:
 - i. respiratory infection
 - ii. gastrointestinal infection
 - iii. feverAND
 - c. other common diagnoses have been considered and discounted as determined by a veterinary professional.
AND
 - d. the animal has had confirmed contact with a suspect or known human case of COVID-19 within three weeks of developing clinical signs.

13. In instances where the animal being considered for SARS-CoV-2 testing is from a non-domestic species from a zoo, animal park or research establishment, attending veterinarians should contact Officials by telephone (see section 19 for contact telephone numbers) to discuss the application of the above case definition.
14. Testing undertaken at private laboratories should be based on the detection of SARS-CoV-2 viral RNA in animals via polymerase chain reaction (PCR) (typically a reverse transcriptase quantitative PCR assay (RT-qPCR)) or an equivalent assay.
15. Based on current scientific knowledge **oropharyngeal and rectal swabs are the only suitable specimen types** for the detection of SARS-CoV-2 infection in animals. Faecal and vomitus samples or swabs of the animal's coat/fur or other environmental swabs are NOT suitable due to the potential for environmental contamination.
16. Serological assays are coming onto the commercial market for SARS-CoV-2; however, these assays currently have poor validation, low specificity and sensitivity, and their use to test animals is not recommended. In addition, serological assays used to detect antibodies would demonstrate past infection only and therefore would not be of diagnostic or treatment value to the animal (see note above regarding the Veterinary Surgeons Act).
17. The receiving laboratory should be capable of retaining the sample or nucleic acid extraction from the specimen pending the test result. Laboratories should store the sample in a manner appropriate to maintaining its integrity and traceability. In the event of a positive result, the sample/nucleic acid extraction may be required to be sent to the Animal and Plant Health Agency (APHA) Weybridge Laboratory where secondary/confirmatory testing (in accordance with international standards) will be undertaken.

What you will need to do if you undertake private SARS-CoV-2 testing

18. Veterinarians should ensure clients and diagnostic laboratories used are aware of the following actions when test results are known.
19. **If the results are negative:** you have no further obligation to report these results to the competent authority. Veterinarians should continue case management as appropriate to the animal's condition.
20. **If the results are positive**
 - a. Reports of a positive result should be communicated to the competent authority. This should be made as soon as possible by telephone using the number for the administration in which the tested animal resides (see below). You should be prepared to provide information on the animal and its testing as outlined in Annex A. All information provided will be handled with appropriate confidentiality.
 - i. **England** : Defra Rural Services Helpline on 03000 200 301
 - ii. **Wales:** Animal and Plant Health Agency Regional Office Wales on 0300 3038268
 - iii. **Scotland:** your local Field Services Office
 - Ayr** on 03000 600703
 - Galashiels** 03000 600711
 - Inverness** 03000 600709
 - Inverurie** 03000 600708

Perth 03000 600704

- iv. **Northern Ireland:** DAERA on 0300 200 7840 / 0300 2007852 or contact your local Divisional Veterinary Office.
 - b. Where relevant, the Official coordinating your report will discuss with you the need to contact public health officials in your area.
 - c. You (the private veterinary surgeon (PVS)) should be prepared to take additional samples from the animal and submit these to the APHA Weybridge laboratory for secondary testing. Details of how to submit the sample will be provided by the Official coordinating your report. Samples requested will typically be:
 - I. Oropharyngeal and rectal swabs
AND
 - II. 2ml of clotted blood
 - d. In addition, where possible, you (the PVS) should arrange for the original sample to be sent from the laboratory at which the positive sample was achieved to the APHA Weybridge laboratory for confirmatory testing. Details of how to submit the sample will be provided by the Official coordinating your report.
21. Sampling and postage costs of submitting additional samples will be at your (the PVS/clients) cost. The laboratory costs of conducting any secondary/confirmatory testing will be paid for by Government.
 22. Results of the secondary/confirmatory testing conducted by APHA Weybridge, and any other relevant information, will be made available to you (the PVS). It is your (the PVS) responsibility to share these results with your client. Where relevant, the Official coordinating your report will discuss with you the need to contact public health officials in your area.
 23. Secondary/confirmatory testing may not be required if the report does not meet the case definition outlined above. Additional samples from the animal for confirmatory testing may also not be required if the initial samples were collected at post-mortem, or the animal has since died or otherwise is not available for retesting. Submission of the original sample from which the positive test result was obtained may, however, still be required in these instances. The Official who answers your report call will make this assessment and inform you of the result (either during the initial call or during a subsequent call-back) and inform you of any subsequent requirements to submit samples for secondary/confirmatory testing (as outlined above).
 24. Samples from other animals in the household in direct contact with the reported case may also be considered as suitable for secondary testing. The Official coordinating your report will inform you of any requests to also submit samples from these animals for testing at APHA Weybridge.

Annex A – Epidemiological and Test Information Required at the Time of the Telephone Report

This information should be collected in advance of making the initial telephone report call on receipt of a positive private SARS-CoV-2 test result, to avoid unnecessary delays. Ideally this information should be recorded when considering testing. All information provided will be handled with appropriate confidentiality

1. The species (and if appropriate, type) of animal from which the sample was taken.
2. The age and sex of the animal from which the sample was taken.
3. History of clinical signs of the animal(s) concerned.
4. The specimen type(s) from which the positive test result(s) were obtained (in addition to details of any samples where negative results were obtained from the same animal).
5. Any other animals in contact / displaying clinical signs.
6. Were any other animals in the household in which the animal resides previously tested and if so, with what result? (Including details of any samples where negative results were obtained from these animals).
7. The address where the specimen(s) were taken, and the name, address and phone number/email address of the owner / person in charge of the animal (or property if the animal is part of a commercial/charitable organisation).
8. The date of sampling and the date the specimens(s) were analysed by the laboratory (if available), and the name and address of the laboratory.
9. The organism considered to be detected.
10. Details of any other differential diagnostic testing of the animal(s) which has been undertaken.
11. The name, address and phone number/email address of the veterinarian making the report.
12. Confirmation that there was no reason to suspect that the specimens(s) were cross-contaminated (by an infected person or environment) while being taken.
13. The COVID-19 status of the people in the animals' household (e.g. confirmed human case(s), suspected human case(s)), including how the onset and duration of symptoms in people relates to the onset of signs in the animal. We do not need to know which household member was ill – just that a household member or members were ill. Where relevant, we will discuss with you the need to contact public health officials in your area.
14. If known – the assay platform used by the laboratory, and the number of cycles (commonly expressed as a C_t or C_q value) needed or viral copy number used to generate the positive result (these figures indicates the amount of viral RNA present in the sample).