

Middle East Respiratory Syndrome Coronavirus (MERS-CoV) INFORMATION FOR MICROBIOLOGISTS AND VIROLOGISTS

Version 9 – February 2019
(based on PHE lab guidance)

Case definitions - please refer to the following algorithms:

- [SECONDARY CARE ALGORITHM](#)
- [CLOSE CONTACT ALGORITHM](#)
- [PRIMARY CARE ALGORITHM](#)

Laboratory testing guidance:

[LABORATORY TESTING ALGORITHM](#)

Infection Control guidance:

[INFECTION CONTROL GUIDANCE FOR MERS-COV](#)

Handling of samples

All samples from possible cases of Middle East Respiratory Syndrome Coronavirus (MERS-CoV) infection are to be handled at containment level 3. Respiratory samples are most likely to contain virus, but there is a possibility that it may be present in faeces and urine. Once lysis buffer has been added these samples may be taken out of containment level 3 according to local practices.

Transport

All samples from patients with possible MERS-CoV infection are to be transported by Category B transport (see Appendix B).

Laboratories:

For NHS Lothian, NHS Borders and NHS Fife, testing for MERS CoV will be carried out at the Royal Infirmary of Edinburgh (RIE).

For all other NHS boards testing for MERS CoV will be carried out at the West of Scotland Specialist Virology Centre (WoSSVC).

The WoSSVC/ RIE will send any positive samples urgently to RVU Colindale for confirmation (see section on confirmation and clinical support). See section on “PRIMARY TESTING/SCREENING for MERS-CoV” for further details including contact numbers.

Testing for other pathogens

Please note that it may be appropriate to arrange for testing for other respiratory pathogens in parallel to testing for MERS-CoV, if all other clinical and epidemiological criteria to constitute a possible case are fulfilled. Use existing arrangements to contact the local microbiology, virology, infectious disease or respiratory consultants and discuss testing arrangements for individual cases with the WoSSVC (RIE for NHS Lothian, NHS Borders and NHS Fife).

Information sent out to healthcare professionals advises that possible cases should first be discussed with a local infectious disease physician or microbiologist and / or the local respiratory physician.

Based on clinical picture, local infectious disease physician or microbiologist and / or the local respiratory physician should advise on the processing and testing of the samples. If it is appropriate to perform testing for other pathogens at the local laboratory, please ensure screening for other causes of pneumonia, including a primary respiratory viral screen and/or Legionella, is carried out. **Please inform the local virology laboratory that samples are to be received and ensure that the specimen request forms are clearly marked with the relevant clinical and epidemiological history.**

The local virology laboratory should reserve an untreated aliquot of all samples at CL3, and send these to the WoSSVC (RIE for NHS Lothian, NHS Borders and NHS Fife) (Category B transport) if the primary testing for other respiratory pathogens is negative.

(Refer to algorithm: [SECONDARY CARE ALGORITHM](#))

PRIMARY TESTING/SCREENING for MERS-CoV:

A diagnostic service for MERS CoV, using MERS CoV specific assays (UpE assay) is offered by the WoSSVC and the RIE (for NHS Lothian, NHS Borders and NHS Fife) for all patients who meet the appropriate clinical and epidemiological criteria. Please refer to the [LABORATORY TESTING ALGORITHM](#) for the case definition. The service had been rolled out as part of a co-ordinated UK wide response to carry out surveillance for any further cases of MERS-CoV

Laboratories in Scotland should refer samples from patients fulfilling the case definition for a possible case of MERS-CoV to the WoSSVC or the RIE (for NHS Lothian, NHS Borders and NHS Fife) which will provide specific primary testing for MERS-CoV and / or primary testing with a respiratory virus screen (if required). Laboratories should not request primary MERS-CoV testing directly from the national reference laboratory at PHE Colindale.

The following **initial samples** should be collected from each possible MERS case:

- an upper respiratory tract sample (combined nose and throat viral swabs, or nasopharyngeal aspirate **AND**
- if obtainable, a lower respiratory tract sample (sputum, or an endotracheal tube aspirate if intubated)

Testing of a lower respiratory tract sample (i.e. sputum or BAL) is necessary for formal exclusion of MERS-CoV diagnosis.

Please ensure that the specimen request forms are clearly marked with the relevant clinical and epidemiological history.

It is important, that the corresponding lab is contacted prior to sending samples. Phoning ensures that the test request will be carried out and that it is processed as rapidly as possible. If your request is out of hours please contact the on-call virologist via the switchboard who will be able to deal with your request.

WoSSVC:

Office hours: 0141 201 8722,

Out of hours: contact via switchboard: 0141 211 4000

Royal Infirmary of Edinburgh – for NHS Lothian, NHS Borders and NHS Fife cases only:

Office hours: 0131 242 6086

Out of hours: contact via switchboard: 0131 536 1000

Please note that testing can also be carried out on samples that have already been submitted and tested by the local laboratory. Please contact the laboratory to organise testing.

Any laboratory performing generic coronavirus (gCoV) testing should send gCoV positive samples that fulfil the clinical and epidemiological criteria of a possible case to the WoSSVC (or RIE for Lothian, NHS Borders and NHS Fife) for primary detection of MERS-CoV. If MERS-CoV positive, please follow the guidelines below for onward referral and confirmation by the national reference laboratory, Respiratory Virus Unit, Public Health England at Colindale.

The WoSSVC / RIE will send UpE positive samples urgently to Respiratory Virus Unit, Public Health England at Colindale for confirmation, as described below.

CONFIRMATION AND CLINICAL SUPPORT

PHE Colindale requests that all MERS-CoV positive samples from any setting are referred from the WoSSVC/ RIE laboratory for MERS-CoV confirmation and clinical support. **Please note: No charge will be made for MERS-CoV confirmatory testing.**

PHE Colindale will also request further follow-up samples for investigation (e.g. BAL, EDTA blood, faeces, urine, serum) from a MERS-CoV confirmed patient. All samples submitted should be urgently transported to PHE Colindale in accordance with Category B transportation regulations.

SAMPLES: Please contact the Respiratory Virus Unit (RVU) at PHE Colindale (details below) prior to sending samples. PHE Colindale accepts original clinical samples only. Please do not send nucleic acid extracts or samples in lysis buffer. Please provide MERS-CoV Ct values on the request form and inform PHE Colindale of intention to refer samples prior to sending the samples. Sequential follow-up samples from positive MERS-CoV cases may be requested by PHE including serum samples for serological investigations. Specific request forms for Confirmation of MERS-CoV can be found at:-

<https://www.gov.uk/government/publications/mers-cov-confirmatory-testing-request-form>

Respiratory Virus Unit
Public Health England
61 Colindale Ave
London
NW9 5EQ

respiratory@phe.gov.uk

Telephone: 020 8327 6017 or 020 8200 4400 (out of hours)

PUBLIC HEALTH ACTIONS

Enhanced infection control procedures should be employed for possible, probable and confirmed cases of MERS –CoV. On detection of MERS-CoV at the WoSSVC positive result should be urgently reported to the local Health Protection Team and HPS. HPS will inform PHE Colindale. Further information on infection control procedures and patient management of a MERS-CoV case can be found at:-

<http://www.hps.scot.nhs.uk/resp/coronavirus.aspx?subjectid=CA>

Appendices

A. Infection control

For guidance on Personal Protective Equipment (PPE) and infection control precautions, please refer to the [National Infection Prevention and Control Manual](#) and [Infection control guidance for MERS-CoV](#).

B. Category B Transportation

Category B transportation is appropriate for sending samples from possible MERS CoV patients to local virology laboratories, the WoSSVC, RIE and Colindale. Details on Category B transportation are provided in the document: [Guidance on regulations for the Transport of Infectious Substances 2017-2018](#).

C. Advice re clinical management

Use existing arrangements to contact the local microbiology, virology, infectious disease or respiratory consultants for clinical advice on management of possible cases.