

UNIQUE IDENTIFER NO: C-87-2014

Review Date: June 2018

Review Lead: Lead Infection, Prevention and Control Nurse

Calderdale and Huddersfield 
NHS Foundation Trust

SECTION U - MIDDLE EAST RESPIRATORY SYNDROME CORONAVIRUS (MERS-CoV)

Version 2

Important: This document can only be considered valid when viewed on the Trust's Intranet. If this document has been printed or saved to another location, you must check that the version number on your copy matches that of the document online.

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| Does this document map to other Regulator requirements? | |
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| <i>Regulator details</i> | <i>Regulator standards/numbers etc</i> |
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| Document Version Control | |
|--------------------------|--|
| Version 1 | This is a new policy focusing on the management of suspected or confirmed cases of MERS-CoV (Middle East Respiratory Syndrome) |
| Version 2 | The Initial Assessment table (Section 6) has been removed A new 'Summary of Advice' section has been added (Section 13) The references, reading and links to appropriate documents section has been updated. The MERS-CoV Case algorithm has been updated (App. 4) A 'Putting on and Removing PPE' section has been added (App. 7) |

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1. Introduction

Middle East Respiratory Syndrome (MERS-CoV)

MERS-CoV is a viral respiratory disease caused by a novel coronavirus (MERS-CoV) that was first identified in the Kingdom of Saudi Arabia in 2012.

The majority of outbreaks of MERS-CoV in the Middle East and South Korea have been linked to healthcare settings. The WHO has concluded that gaps in infection control measures have most likely contributed to the outbreaks and has recommended reinforcing the importance of strict adherence to recommended infection control measures in healthcare facilities (PHE 2015). Staff should be mindful that there have been cases of transmission in healthcare facilities in several countries. Infection prevention and control measures are critical to prevent the possible spread of MERS-CoV in healthcare facilities (WHO, 2014).

This policy will assist in the identification and management of patients who are suspected or confirmed to have **Middle-East Respiratory Syndrome – Coronavirus (MERS-CoV)**

2. Purpose

The purpose of this policy is to ensure that staff have access to information regarding the management of patients with suspected or confirmed MERS-CoV.

It is intended that the information provided will be consistent with national guidance and will be updated as required in order to promote a high standard of care for individual patients and those with whom they have been in contact. The interventions outlined aim to reduce the risk of transmission to others.

3. Scope

This policy applies to all health care workers working within the Trust and should be used in conjunction with other relevant policies and guidelines, including the following policies from 'Infection Control Policies & Guidelines'.

- Standard precautions: Section C
- Decontamination and Disinfection policy: Section F
- Hand hygiene policy: Section H
- Isolation policy: Section K
- Specimen policy: Section R
- Bed management and movement of patients policy: Section W
- Antibiotic guidelines: **Medicines Code**

It should also be used in conjunction with the following document:
'Infection Control Precautions to Minimise Transmission of Respiratory Tract Infections (RTIs) in the healthcare setting': this can be accessed by the following link:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/452928/RTI_infection_control_guidance_PHE_v3_FPF_CT_contents2.pdf

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4. Duties (Roles and Responsibilities)

The Chief Executive is responsible for ensuring that there are effective infection prevention and control arrangements in the Trust. Matrons, Ward and Department Managers are responsible for ensuring that this policy is implemented and adhered to in their areas.

The Infection Prevention & Control Team (IPCT) is responsible for providing expert advice on relevant infection prevention and control measures; the Microbiologists will advise regarding the clinical management of cases.

The Infection Control Doctor (ICD) / Director of Infection Prevention & Control (DIPC) will initiate an outbreak meeting in the event of an outbreak or cluster of cases.

All staff that have patient contact are required to adhere to this Policy.

5. What is Middle East Respiratory Syndrome (MERS-CoV)

Pathogen

Human coronaviruses cause respiratory tract infections of varying severity. MERS-CoV is a novel coronavirus first identified in 2012. Dromedary camels are an identified host and the likely source of primary infection in some cases however, most cases are now due to human-to-human transmission. Large outbreaks linked to healthcare facilities are a feature of MERS-CoV and have occurred both within the Middle East and South Korea (PHE 2015).

At Risk Population

There is a low risk of imported cases to the UK from affected countries and healthcare workers should remain vigilant. Early identification and implementation of infection control measures for suspected cases is crucial (PHE 2015).

As of 24 December 2015, cases have been reported in Bahrain, Jordan, Iraq, Kingdom of Saudi Arabia, Kuwait, Oman, Qatar, United Arab Emirates and Yemen.

Symptoms

Most patients present with fever and cough that can progress to a severe pneumonia. Renal problems have been detected in some cases and on occasions diarrhoeal disease has been the first symptom to appear.

Mechanisms of Spread

Coronaviruses are mainly transmitted by large respiratory droplets and direct or indirect contact with infected secretions. They have also been detected in blood, faeces and urine. Airborne transmission is thought to have occurred from aerosolised respiratory secretions and faecal material.

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Possible case: any person meeting the criteria for a 'Patient under investigation' i.e. any person with severe acute respiratory infection requiring admission to hospital;

- With symptoms of fever (>38°C) or history of fever and cough
- With clinical or radiological evidence of pneumonia or acute respiratory distress syndrome (ARDS).

AND

- not already explained by any other infection or aetiology

AND AT LEAST ONE OF

- History of travel to, or residence in an area where infection with MERS-CoV could have been acquired in the 14 days before symptom onset

OR

- Close contact during the **fourteen days** before onset of illness with a confirmed case of MERS-CoV while the case was symptomatic

OR

- Healthcare worker based in ICU caring for patients with severe acute respiratory infection, regardless of history of travel or use of PPE

OR

- Part of a cluster of two or more epidemiologically linked cases within a two week period requiring ICU admission, regardless of history of travel.

(See Case Management Algorithm, Appendix 4, p.20).

Case classification:

Possible case: any person meeting the criteria for 'patient under investigation' (see above).

Presumptive positive case: Any person with PHE MERS-CoV Testing Laboratory positive confirmation of infection with MERS-CoV.

Confirmed case: Any person with PHE National Reference Laboratory (RVU) positive confirmation of infection with MERS-CoV.

Discarded case: Any possible case with a negative MERS-CoV laboratory result.

Close contact definitions:

Health and social care workers: workers who provided direct clinical or personal care or examination of a symptomatic confirmed case of MERS-CoV, or was within close vicinity of an aerosol generating procedure AND who was not wearing full personal protective equipment (PPE) at the time. Full PPE is defined as correctly fitted high filtration mask (FFP3), gown, gloves and eye protection.

Household or close contact: any person who has had prolonged face-to-face contact (>15 minutes) with a symptomatic confirmed case of MERS-CoV in a household or other closed setting.

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The incubation period for MERS-CoV is currently considered to be up to 14 days. Any respiratory illness occurring in the 14 days following last contact with a confirmed case of MERS-CoV is considered relevant.

Close contacts should self-isolate and alert their GP as soon as possible: where the close contacts are healthcare workers, this should be their Manager or Occupational Health Service.

Treatment

In the absence of effective drugs or a vaccine, control of this disease relies on the appropriate management and isolation of possible and confirmed cases and the investigation and follow up of close contacts (PHE 2013).

6. Initial Assessment

Please see algorithm re initial assessment and management - Appendix 4, p.20.

A MERS-CoV surveillance form to be completed for all suspected or confirmed cases and their contacts: forms are accessible on the following website:

<https://www.gov.uk/government/publications/mers-cov-epidemiological-protocols-to-assess-cases-and-their-close-contacts-in-the-uk>

Please select and complete the appropriate form from this document:
(‘The First Few Hundred FF100’. Epidemiological protocols for comprehensive assessment of Early Middle East Respiratory Syndrome Coronavirus cases and their close contacts in the United Kingdom).

| | |
|----------|--|
| Form 1: | (p.13) Possible case |
| Form 1a: | (p.16) Initial confirmed case report |
| Form 1b: | (p.25) Case follow-up form – final outcome – Day 14-21 |
| Form 2a: | (p.31) Initial contact report |
| Form 2b: | (p.40) Contact follow-up form – Day 14 (since last exposure) |

The forms should be completed by the clinical team responsible for the care of the patient.

Appendix A of the ‘Enhanced Case and Contact Protocol’ provides guidance about completing the forms.

The IPCT must be notified immediately of any possible or confirmed cases of MERS-CoV admitted or diagnosed whilst in care.

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7. Infection Prevention & Control Management

If a patient fitting the case definition for possible MERS-CoV is admitted, respiratory, **standard and enteric precautions** must be implemented.

NB: Personal, protective equipment (PPE) and good infection control are extremely useful in preventing spread but can never completely eliminate risk as they are user-dependent.

Patient Isolation

- Patients requiring assessment and investigation must be assessed in a single cubicle or at home.
- Patients who need hospital admission should be admitted directly to a negative pressure single room with en-suite facilities.
- Room doors to remain closed at **all** times, except for necessary access.
- Isolation precautions – incorporating contact, respiratory precautions and enteric precautions (see Section K, Infection Control Policies & Guidelines)
- Only **essential staff** should enter the room.
- If on a critical care unit, the patient should be nursed in a negative-pressure room where available, or, if not available, a neutral-pressure side-room (with closed-ventilator circuit if required) should be used.

Staff

- A record of all staff involved in the assessment, care and management of the patient must be maintained. The record sheet should be placed at the door and all staff entering must complete this (see Appendix 1, p. 17).
- Only staff directly involved in the care of the patient should access the room.
- The use of bank or agency staff should be avoided wherever possible.

All staff should be vigilant for any respiratory symptoms in the 14 days following last exposure to a case and should not come to work if they have a fever or cough. They should seek advice from the IPCT / Occupational Health Dept. The IPCT and/or local Health Protection Team will advise on where they should be medically assessed. During this period, symptomatic staff should avoid close contact with people both in the hospital and in the general community.

Visitors

- The number of visitors should be restricted.
- Visitors entering the isolation room must wear PPE, as detailed below.
- Visitors must be trained in the appropriate use of protective clothing and hand hygiene.

A log of all visitors must be kept (see Appendix 2, p.18).

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Contact tracing

- Follow up of staff contacts of patients will be co-ordinated by the Trust Occupational Health Department.
- Follow up of community contacts of patients will be co-ordinated by the local Health Protection Team.

Use of PPE (personal protective equipment).

Protective clothing: to be worn by **ALL staff and visitors** entering the room of a patient with suspected / confirmed MERS-CoV.

Staff to wear PPE as detailed below: (See App. 7, p.23 for information regarding the correct procedure for putting on and removing PPE).

- Long-sleeved, fluid repellent disposable gown (if staff wore scrubs underneath, this would obviate problems with laundering of uniforms and other clothing).
- Non-sterile surgical gloves
- An FFP3 respirator (conforming to EN149:2001) to be worn by all personnel carrying out clinical care and visitors or staff in the room during aerosol-generating procedures. **Fit testing must be undertaken before using this equipment and a respirator should be fit-checked every time it is used** – please see Appendix 3, p.19.
- Eye protection e.g. tight-fitting goggles or face shield. If non-disposable, these must have a wipeable surface; they must not have elastic straps (prescription glasses do not provide adequate protection against droplets, sprays and splashes).
- All staff who are likely to be caring for possible or confirmed cases must be familiar with the use of FFP3 respirators and have been fit tested to ascertain whether they are able to use the disposable or reusable FFP3 masks.

Disposable FFP3 masks: all staff who have been fit tested and are able to use the disposable FFP3 masks should perform a fit check each time a new mask is used and dispose of this as infectious waste following each single use. **Before leaving the room:** remove gloves, apron and eye protection, dispose in the infectious waste stream (orange) and decontaminate hands.

Reusable FFP3 masks: staff who use the reusable FFP3 masks, with filters, must be familiar with the masks and able to perform a fit check for each use. Ensure all PPE is removed at the end of a clinical procedure or task in the correct order to minimise the risk of self-contamination i.e. **before leaving the room:** remove gloves, apron and eye protection. Once outside the side-room, remove mask and place on the trolley situated outside the room. Staff member to don fresh apron and disposable gloves and decontaminate the reusable mask thoroughly, using detergent wipes. Filters to be removed and stored separately unless it is intended that the mask is to be reused by the same staff member

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when they can remain attached to and stored with the mask. The surface of the trolley to be decontaminated following this process.

Ward area

- Dedicated, single patient use equipment within the side-room.
- Single-use equipment to be disposed of as infectious waste within the room (orange waste stream).
- Reusable equipment should be avoided if possible: if used, this should be disinfected in accordance with the manufacturer's instructions.
- Only essential staff should be in the patient's room when aerosol-generating procedures are being carried out.
- Hand hygiene is essential before and after all patient contact, removal of protective clothing and cleaning of the environment.
- Alcohol hand gel may be used if hands are visibly clean, otherwise use soap and water.
- All staff **must** comply with BBE requirements: one plain wedding band only.
- Crockery can be treated as normal.
- Use of equipment that recirculates air e.g. fans should not be used.
- Linen must be placed in a water-soluble bag within the room and must not be carried through the ward / department.
- **All** waste generated by the affected patient or from within the room must be treated as infectious (orange waste stream).

Critical care area

In addition to the above precautions, the following precautions must also be adhered to:

- If on a critical care unit, the patient should be nursed in a negative-pressure room where available, or, if not available, a neutral-pressure side-room (with closed-ventilator circuit if required) should be used.
- PPE should be worn as detailed above.
- All respiratory equipment must be protected with a high efficiency filter e.g. BS EN 13328-1.
- The ventilator circuit should not be broken unless absolutely necessary.
- Ventilators must be placed on stand-by when carrying out bagging.
- Disposable respiratory equipment should be used wherever possible. Re-usable equipment must, as a minimum, be disinfected according to the manufacturer's instructions.
- The use of non-invasive positive-pressure ventilation equipment carries with it an increased risk of transmission of infection.
- Water humidification should be avoided and a heat and moisture exchanger should be used if possible.
- Only essential staff should be in the patient's room when aerosol-generating procedures (AGPs) are carried out.

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Theatres

- Must be informed in advance.
- The patient should be transported directly to the operating theatre and should wear a surgical mask if it can be tolerated.
- The patient must be anaesthetised and recovered in Theatre.
- Staff should wear protective clothing as detailed above.
- Disposable anaesthetic equipment should be used wherever possible.
- Re-usable anaesthetic equipment should be decontaminated in line with the manufacturer's instructions.
- The anaesthetic machine must be protected by a filter with viral efficiency to 99.99%.
- Instruments and devices should be decontaminated in the normal manner. Instruments must be transported safely.
- The Theatre should be cleaned as per policy.

Theatres should not be used for 15 minutes after the patient leaves if conventionally ventilated, or 5 minutes if ultraclean ventilation is used.

Medical procedures

- Procedures that produce aerosols of respiratory secretions e.g. bronchoscopy, induced sputum, positive-pressure ventilation via a face mask, intubation, extubation and airway suctioning, carry an increased risk of transmission. Where these procedures are medically necessary, they should be undertaken in a negative-pressure room if available or in a single room.
- The minimum number of required staff should be present and they **must** wear PPE as specified in this policy, including eye protection. Entry and exit from the room should be minimised during the procedure.
- If a room is used for a procedure, it should be left for 20 minutes, cleaned and should then be ready for re-use. This is because the large particles will fall out within seconds and the small aerosol particles will behave almost as a gas. Clearance of any aerosol is dependent on the ventilation of the room. In hospitals, this is usually around 12 – 15 air changes per hour therefore, after 20 minutes there should be less than 1% of the starting level (assuming cessation of aerosol generation).

Specimen collection

The Consultant Microbiologist should be consulted to discuss the required samples for diagnostic testing of MERS-CoV (see Appendix 6).

- A minimum of one sputum specimen, two duplicate sets of Nose and Throat swabs in viral transport media and an acute serum sample must be collected.
- **All** specimens generated from a suspected / confirmed case must be treated as biohazard i.e. Hazard Level 3 which requires that the specimens,

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requests and specimen bags must have an infection risk label attached (available from Pathology Stores).

- Double bag.

Transportation of samples between laboratories should be enhanced Category B.

(Further information can be accessed at the following website:

http://www.who.int/ihr/publications/who_hse_ihr_2012.12/en/)

8. Patient Transfers within the Hospital

Where possible, all procedures and investigations should be carried out in the single room with a minimal number of staff present. Only if clinical need dictates, and in conjunction with the IPCT, should patients be transferred to other departments.

The following procedures then apply:

- The department must be informed in advance.
- The patient must be taken straight to and from the investigation / treatment room and must not wait in communal areas.
- To allow appropriate decontamination after any procedures, patients should be at the end of the list.
- The patient should wear a surgical mask if this can be tolerated – this will prevent large droplets being expelled into the environment by the wearer.
- The treatment / procedure room, trolley / chair and all equipment should be cleaned with Tristel following use.
- Staff carrying out the procedure must wear the protective clothing outlined in this policy.
- It is possible that the virus can survive in the environment for at least 48 hours so environmental decontamination is vital.

Transfers to other institutions

- Transfer of cases to another hospital should be avoided unless it is necessary for medical care.
- Patients should not be transferred solely for the purpose of accommodation in a negative-pressure room.

If transfer is essential, the IPCT at the receiving hospital and the ambulance staff must be advised in advance of the special circumstances of the transfer.

9. Cleaning

It is possible that Coronaviruses are able to survive in the environment for up to 48 hours; they are easily destroyed by most detergents and cleaning agents.

- Domestic staff to wear protective clothing as indicated above and they must be made aware of the need for additional precautions and be trained in these.

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- Daily cleaning should be carried out with more frequent cleaning of commonly used hand-touched surfaces.
- The isolation area should be cleaned after the rest of the ward area.
- Dedicated or disposable equipment must be used for cleaning.
- Cleaning equipment must be decontaminated following use.
- A terminal clean using a chlorine-releasing agent (e.g. Tristel) must be carried out when the patient is discharged, followed by an HPV clean.

10. Management of Contacts

The risk to contacts of confirmed cases of **MERS-CoV** infection is low but contacts should be followed up in the 14 days following exposure and any new febrile or respiratory illness investigated urgently: see Appendix 5.

- Follow up of staff contacts of patients will be co-ordinated by the Trust Occupational Health Department.
- Follow up of community contacts of patients will be co-ordinated by the local Health Protection Team.

Please select and complete the appropriate surveillance forms accessible from Section 6, p.7 in this policy.

11. Communication

The Microbiologist, IPCT and PHE Health protection team must be informed of any cases meeting the Possible Case definition.

12. Handling Deceased Bodies

The act of moving a recently deceased body onto a hospital trolley for transportation to the morgue might be sufficient to expel small amounts of air from the lungs and thereby present a minor risk. A body bag should be used for transferring the body, but hospital porters carrying out this task with an un-bagged body should wear full PPE.

- Once in the hospital mortuary, it is acceptable to open the body bag in order to view the body.
- Washing or preparing the body is acceptable if those carrying out the task wear long-sleeved gowns and gloves which should then be discarded. Facial protection may be considered against splashing and should be guided by local assessment with the activity being undertaken (washing for example would necessitate the use of splash protection).
- Mortuary staff and funeral directors must be advised of the biohazard risk.

13. Summary of advice

If a patient fitting the case definition for possible MERS-CoV is admitted, infection control personnel should follow transmission-based precautions (droplet and

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contact precautions), the full details of which can be found in the document *Infection Control Precautions to Minimise Transmission of Respiratory Tract Infections (RTIs) in the Healthcare setting*. In addition, given that MERS-CoV has been detected in faeces, enteric precautions should also be followed.

Infection control personnel should be notified immediately of any possible or confirmed cases of MERS-CoV admitted or diagnosed whilst in care. In addition to standard precautions, infection control measures for inpatients should include:

- Airborne precautions e.g.
 - Either an isolation room with negative-pressure relative to the surrounding area or a single room with own bathroom or toilet facilities.
 - Use of FFP3 respirators conforming to EN 149:2001 for persons entering the room. Fit testing should be undertaken prior to using this equipment.
- Contact and droplet precautions (including use of long-sleeved fluid-repellent gown and latex or similar non-latex gloves with long tight-fitting cuffs for contact with the patient or their environment).
- Standard precautions to include careful attention to hand washing and hygiene.
- When caring for patients, clinicians should wear eye protection for all patient contact.
Contact IPCT for advice.
- Enteric precautions.
- Standard precautions when handling any waste which must be placed in leak-proof clinical waste bags or bins and disposed of safely.
- Laundry should be classified as infected.

14. Training and Implementation

The policy will be available on the Trust intranet and communicated through existing clinical forums, senior managers' briefings, divisions, induction and mandatory training.

The IPCT will also carry out ad hoc training sessions as required.

15. Trust Equalities Statement

Calderdale and Huddersfield NHS Foundation Trust aims to design and implement services, policies and measures that meet the diverse needs of our service, population and workforce, ensuring that none are placed at a disadvantage over others. We therefore aim to ensure that in both employment and services no individual is discriminated against by reason of their gender, gender reassignment, race, disability, age, sexual orientation, religion or religious/philosophical belief, marital status or civil partnership.

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16. Monitoring Compliance with this Procedural Document

Compliance will be monitored via the IPC monthly dashboard and reported to the Executive Boards; by the use of daily checklists, via the key performance indicators and the weekly and monthly FLO audits.

17. References and further reading

Infection Control Advice – Possible or Confirmed MERS-CoV cases:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/361569/MERS-CoV_infection_control.pdf

Information and guidance:

<https://www.gov.uk/government/collections/middle-east-respiratory-syndrome-coronavirus-mers-cov-clinical-management-and-guidance>

MERS-CoV Case Algorithm

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/491902/Algorithm_case_v27-13January2016.pdf

MERS-CoV Close Contact Algorithm:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/422713/Algorithm_contact_v16.pdf

Updated risk assessment Sept 2015

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/461192/MERS-COV_RA_sep_2015_final.pdf

Referral of samples to the Public Health Laboratory for testing for MERS-CoV in England:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/462691/Referral_of_samples_MERS_CoV.pdf

Referral Pathway of positive MERS-CoV samples to the National Reference Laboratory.

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/463134/MERS-CoV_RVU_Referral_guidance_21_09_2015_3_.pdf

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Infection Control Precautions to Minimise Transmission of Respiratory Tract Infection (RTIs) in the Healthcare Setting and with local policies:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/452928/RTI_infection_control_guidance_PHE_v3_FPF_CT_contents2.pdf

Public Health England: Key facts: MERS-CoV 2013

<http://www.hpa.org.uk/Topics/InfectiousDiseases/InfectionsAZ/MERSCoV/GeneralInformation/respqandanovelcoronavirus2013/>

Public Health England: “The First Few Hundred (FF100)”, Enhanced Case and Contact Protocol v6.3. December 2015.

Available from:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/484195/2015_2016_FF100_Protocol_MERSCoV_V6_3_2015527.pdf

World Health Organisation: *Frequently asked questions on Middle East Respiratory Syndrome Coronavirus (MERS-CoV)*. May 2014.

Available at: http://www.who.int/csr/disease/coronavirus_infections/faq/en/

Fit check

Cover the front of the respirator with both hands, being careful not to disturb the position of the respirator on the face. For an unvalved product, exhale sharply. For a valved product inhale sharply. If air flows around the nose, re-adjust the nosepiece; if air flows around the edges of the respirator, re-adjust the headbands. A successful fit check is when there is no air leaking from the edges of the respirator.

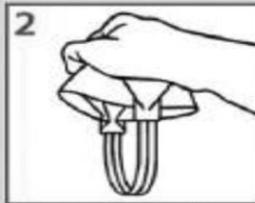
HOW TO FIT AND FIT CHECK AN FFP3 RESPIRATOR

FOLLOW THESE FIVE STEPS TO FIT YOUR RESPIRATOR CORRECTLY

Tip: It may be helpful to look in the mirror when fitting your respirator



1 Hold the respirator in one hand and separate the edges to fully open it with the other hand. Bend the nose wire (where present) at the top of the respirator to form a gentle curve.



2 Turn the respirator upside down to expose the two headbands, and then separate them using your index finger and thumb. Hold the headbands with your index finger and thumb and cup the respirator under your chin.



3 Position the upper headband on the crown of your head, above the ears, not over them. Position the lower strap at the back of your head below your ears.



4 Ensure that the respirator is flat against your cheeks.



5 Mould the nosepiece across the bridge of your nose by firmly pressing down with your fingers until you have a good facial fit. If a good fit cannot be achieved, try another size or design of FFP3.

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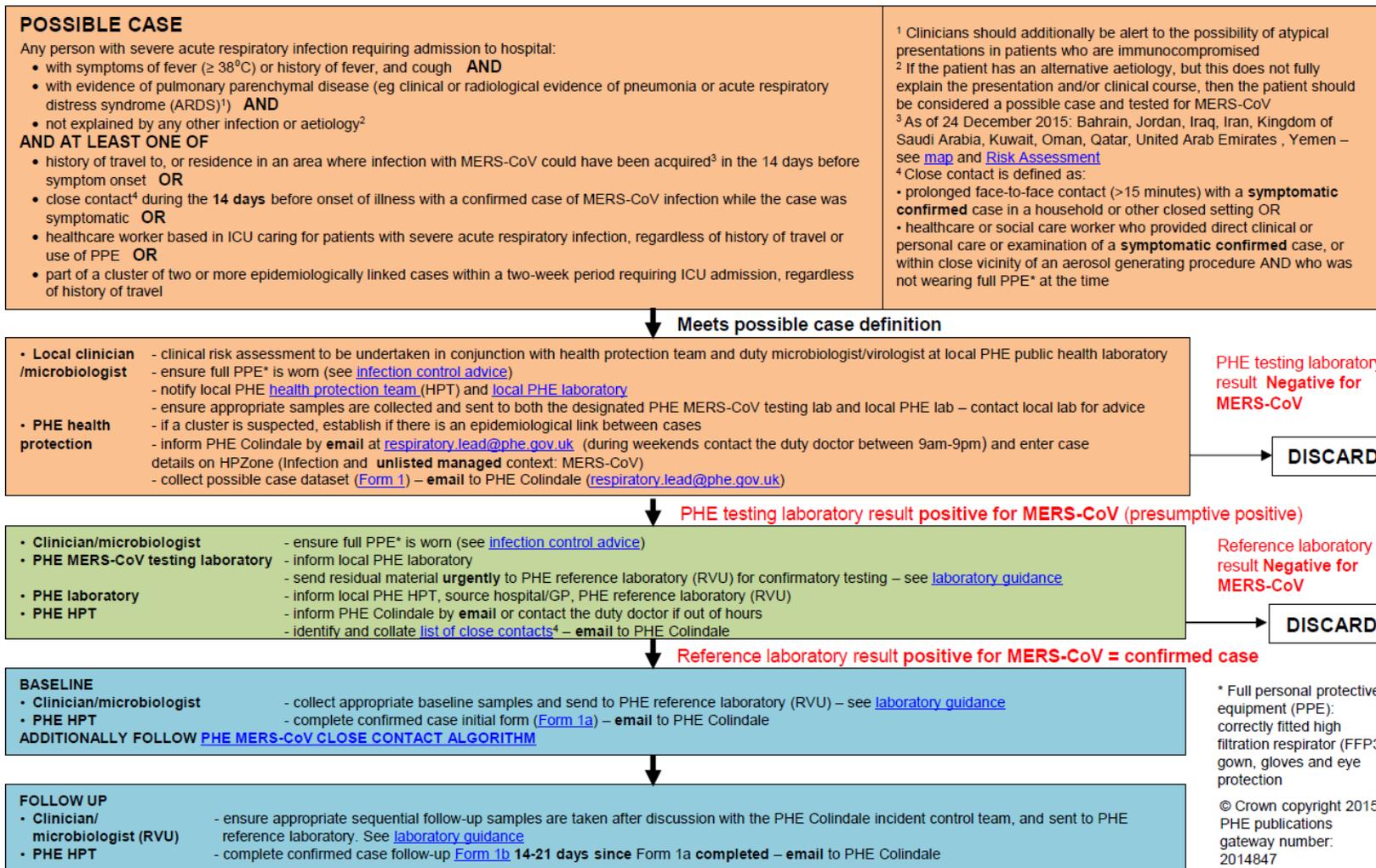
Review Date: June 2018

Review Lead: Lead Infection, Prevention and Control Nurse



MERS-CoV Case Algorithm Version case_v27 13 January 2016

Investigation and public health management of possible cases of severe acute respiratory illness associated with Middle East respiratory syndrome coronavirus (MERS-CoV)

For all email contact please use respiratory.lead@phe.gov.uk

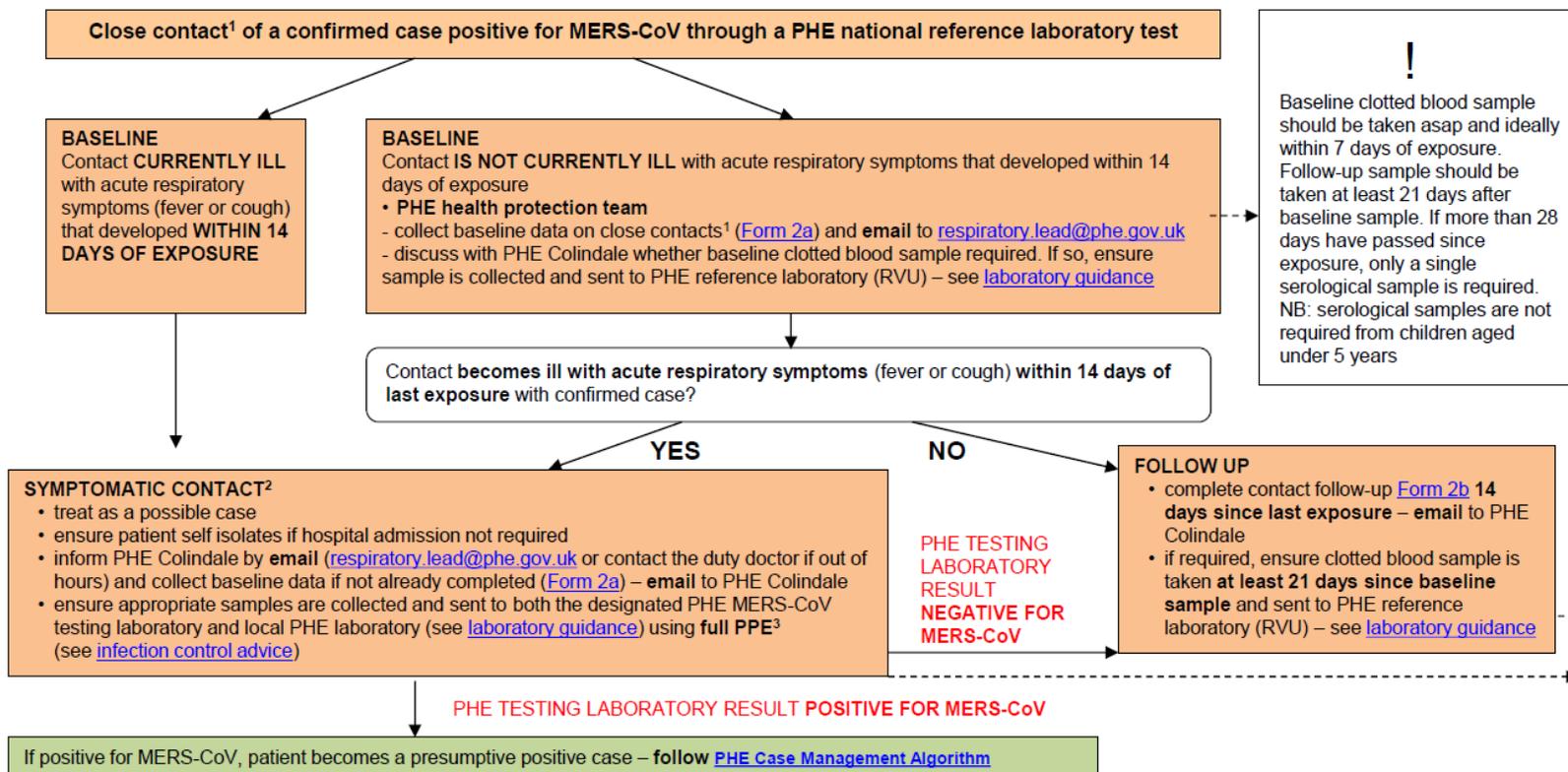


MERS-CoV Close Contact Algorithm

Version contact_v16 16 May 2014

For all email contact please use respiratory.lead@phe.gov.uk

Investigation and public health management of close contacts of Middle East respiratory syndrome coronavirus (MERS-CoV) cases



¹ Close contact definition (from date of illness onset in index case and throughout their symptomatic period):

- any person who had prolonged face-to-face contact (>15 minutes) with a symptomatic confirmed case of MERS-CoV in a household or other closed setting
- health or social care worker who provided direct clinical or personal care or examination of a symptomatic confirmed case of MERS-CoV, or was within close vicinity of an aerosol generating procedure AND who was not wearing full personal protective equipment (PPE^{**}) at the time

² NB If there is no possibility of laboratory confirmation because the patient or samples are not available and the symptoms are not already explained by any other infection or aetiology, the symptomatic contact becomes a probable case (see [WHO interim recommendations](#) for further details)

³ Full PPE: correctly fitted high filtration respirator (FFP3), gown, gloves and eye protection

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Review Lead: Lead Infection, Prevention and Control Nurse

Appendix 6



Public Health
England

Referral of Samples to a PHE Public Health Laboratory for Testing for the Middle East Respiratory Syndrome Coronavirus (MERS-CoV) in England**

CLINICAL CASE FOR INVESTIGATION

This reflects current WHO advice and the definition being used by PHE. See

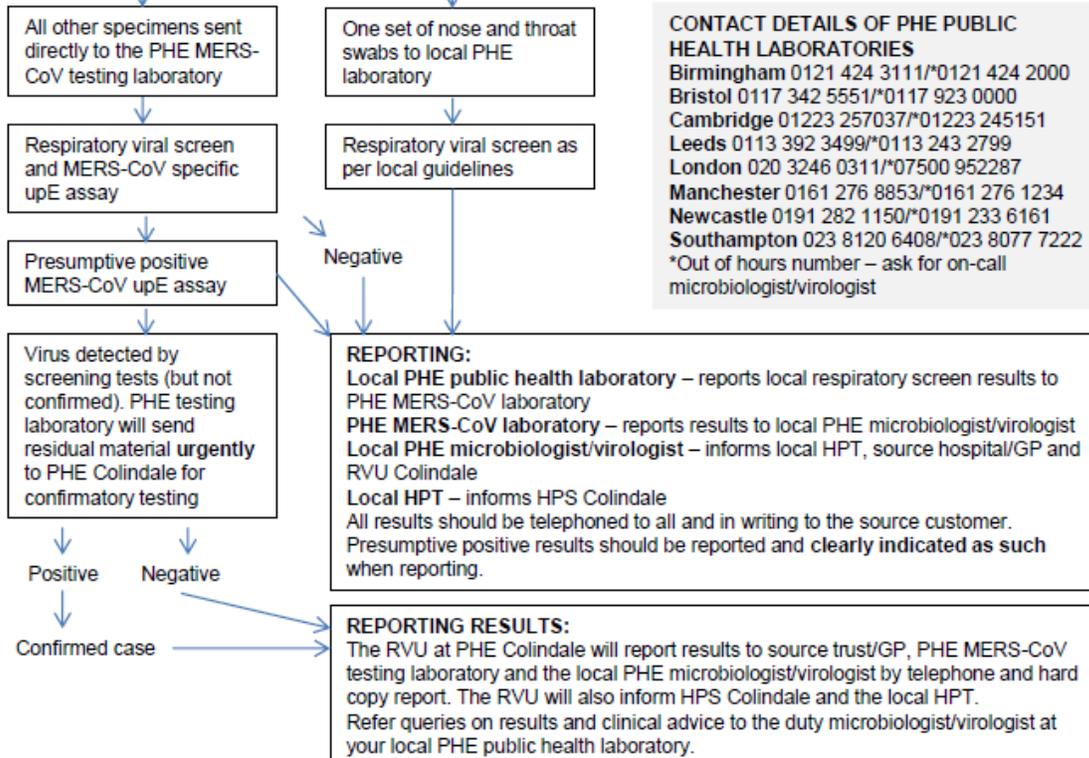
<https://www.gov.uk/government/collections/middle-east-respiratory-syndrome-coronavirus-mers-cov-clinical-management-and-guidance>

When case clusters are being investigated specimens should only be sent after discussion with the local PHE health protection team (HPT) to clarify contacts and relationships. This link is reviewed and revised regularly.

Samples should only be tested from patients who fulfil the case criteria or testing has been agreed by a Health Protection team. Contact the PHE duty microbiologist/virologist at the nearest PHE public health laboratory, who will make arrangements for transport of sample(s) to both the designated PHE MERS-CoV testing laboratory and local PHE laboratory. The local PHE microbiologist/virologist will inform the MERS-CoV testing laboratory, appropriate PHE centre HPT AND the National Reference Laboratory (RVU) at PHE Colindale.

Four samples should be (at the minimum): 1) a sputum sample*, 2) and 3) a duplicate set of nose and throat swabs in viral transport media, and 4) an acute serum sample. (*Testing of a lower respiratory tract sample (ie sputum or BAL) is necessary for formal exclusion of MERS-CoV diagnosis). Samples should be handled at containment level 3 (CL3). Samples should be sent by category B transport – see http://www.who.int/ihr/publications/who_hse_ihr_2012.12/en/

Please provide contact details for telephone and hard copy reporting back to the originating laboratory.



CONTACT DETAILS OF PHE PUBLIC HEALTH LABORATORIES

Birmingham 0121 424 3111/*0121 424 2000

Bristol 0117 342 5551/*0117 923 0000

Cambridge 01223 257037/*01223 245151

Leeds 0113 392 3499/*0113 243 2799

London 020 3246 0311/*07500 952287

Manchester 0161 276 8853/*0161 276 1234

Newcastle 0191 282 1150/*0191 233 6161

Southampton 023 8120 6408/*023 8077 7222

*Out of hours number – ask for on-call microbiologist/virologist

This document should be used in conjunction with guidance on the Referral of positive MERS-CoV samples to the national reference laboratory, [available online](#). Contact: Virus Reference Department, Public Health England, 61 Colindale Avenue, London NW9 5HT. Tel: 020 8200 4400.

**A similar, but regional-specific and locally agreed testing process applies to the three devolved administration laboratories at: Cardiff, Glasgow and Belfast

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Appendix 7

Putting on and removing personal protective equipment

Putting on PPE

The level of PPE used will vary according to the procedure being carried out and not all items of PPE will always be required. PPE should be put on before entering a side room. If full PPE is required, for example for a potentially infectious aerosol generating procedure, all staff in the room, or entering a room that has not been appropriately cleaned, should wear the following PPE, put on in the following order:

1. Gown
2. FFP3 respirator
3. Eye protection i.e. goggles or face shield
4. Disposable gloves

The order given above is practical but the order for putting on is less critical than the order of removal given below.

Removal of PPE

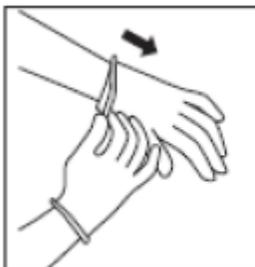
PPE should be removed in an order that minimises the potential for cross-contamination. Before leaving the side room gloves, gown and eye protection should be removed (in that order, where worn) and disposed of as infectious waste.

After leaving the area, the respirator can be removed and disposed of as infectious waste.

Guidance on the order of removal of PPE is as follows:

1. Gloves

- Grasp the outside of the glove with the opposite gloved hand; peel off.
- Hold the removed glove in gloved hand.
- Slide the fingers of the ungloved hand under the remaining glove at the wrist.
- Peel the second glove off over the first glove and discard appropriately.
-



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Gown

- Unfasten or break ties
- Pull gown away from the neck and shoulders, touching the inside of the gown only.
- Turn the gown inside out, fold or roll into a bundle and discard.



2. Eye protection

- To remove, handle by headband or earpieces and discard appropriately.



3. Respirator

- Untie or break bottom ties, followed by top ties or elastic, and remove by handling ties only and discard appropriately.
- To minimise cross-contamination, the order outlined above should be applied even if not all items of PPE have been used.



Clean hands thoroughly immediately after removing all PPE.