Immediate management of a suspected case of MERS-CoV in GG&C acute hospitals.

Introduction

Middle Eastern Respiratory Syndrome coronavirus (MERS-CoV) emerged as a human pathogen in 2012 in the Middle East. This virus is found in camel populations in the Middle East. It can cause an acute severe illness and there has been notable outbreaks in healthcare facilities, largely in the Middle East but notably the largest outbreak was in South Korea when it was imported by a traveller. Treatment is supportive as multi-organ failure can occur and may require intensive care. There is no vaccine or antiviral agent currently available.

It is important to take a clear travel history from any patient presenting with a febrile respiratory tract infection to ensure prompt isolation and infection control procedures are put in place. It is important to note that in the current literature once appropriate PPE was used no onward transmission to healthcare workers has occurred.

The patient *should only be moved to a different site due to clinical need.* This needs full agreement of the Infection Control Consultant, the Infectious Diseases Consultant and the Public Health Consultant and will usually require a PAG(problem assessment group).

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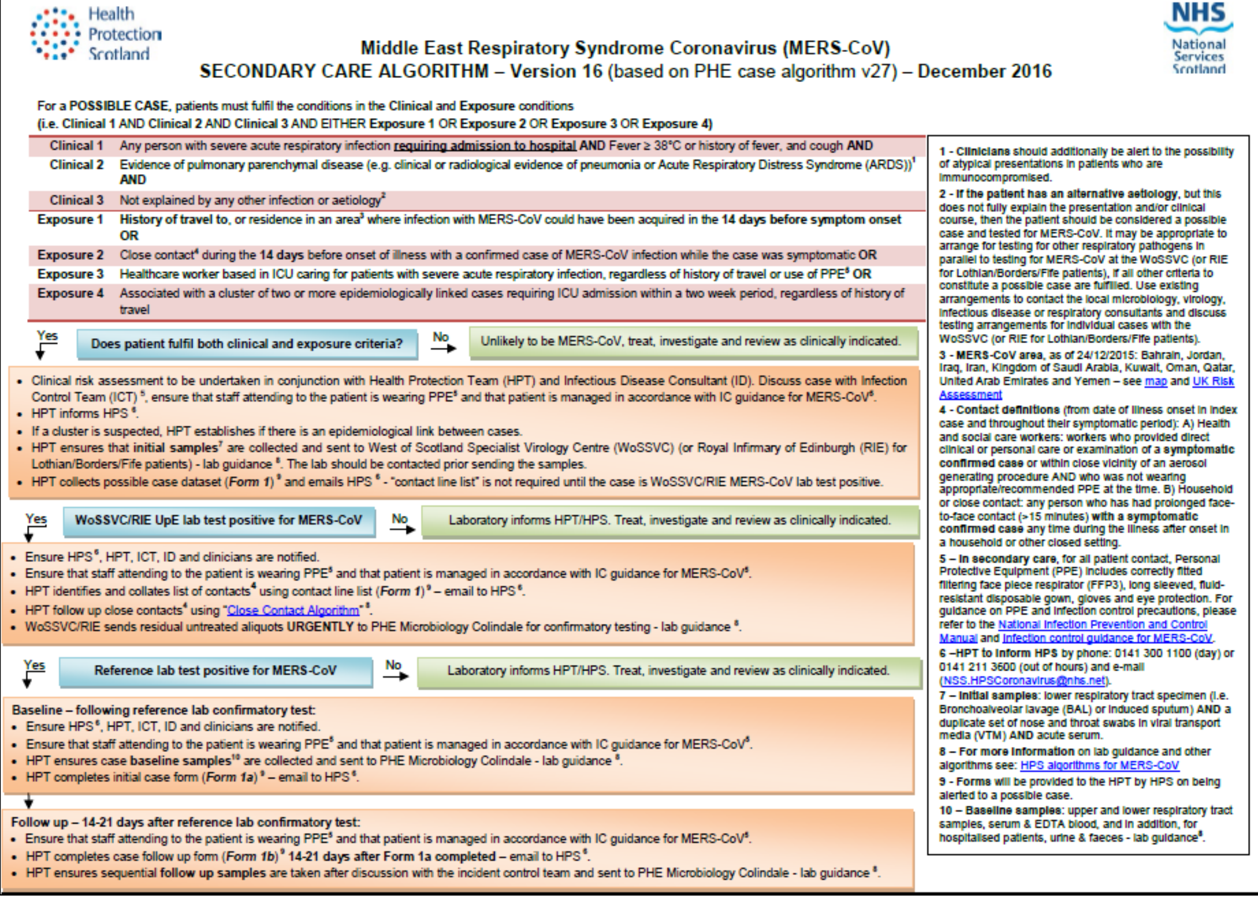
1. Medical criteria & links to HPS page and algorithms

Algorithm HPS Dec 2016

http://www.hps.scot.nhs.uk/resourcedocument.aspx?id=5735



Health Protection Scotland

NHS National Services Scotland

Middle East Respiratory Syndrome Coronavirus (MERS-CoV)
SECONDARY CARE ALGORITHM – Version 16 (based on PHE case algorithm v27) – December 2016

For a **POSSIBLE CASE**, patients must fulfil the conditions in the **Clinical** and **Exposure** conditions
(i.e. **Clinical 1** AND **Clinical 2** AND **Clinical 3** AND EITHER **Exposure 1** OR **Exposure 2** OR **Exposure 3** OR **Exposure 4)**

Clinical 1	Any person with severe acute respiratory infection **requiring admission to hospital** **AND** Fever ≥ 38°C or history of fever, and cough **AND**
Clinical 2	Evidence of pulmonary parenchymal disease (e.g. clinical or radiological evidence of pneumonia or Acute Respiratory Distress Syndrome (ARDS))[1] **AND**
Clinical 3	Not explained by any other infection or aetiology[2]
Exposure 1	**History of travel to**, or residence in an area[3] where infection with MERS-CoV could have been acquired in the **14 days before symptom onset** **OR**
Exposure 2	Close contact[4] during the **14 days** before onset of illness with a confirmed case of MERS-CoV infection while the case was symptomatic **OR**
Exposure 3	Healthcare worker based in ICU caring for patients with severe acute respiratory infection, regardless of history of travel or use of PPE[5] **OR**
Exposure 4	Associated with a cluster of two or more epidemiologically linked cases requiring ICU admission within a two week period, regardless of history of travel

Does patient fulfil both clinical and exposure criteria?
No → Unlikely to be MERS-CoV, treat, investigate and review as clinically indicated.
Yes ↓

- Clinical risk assessment to be undertaken in conjunction with Health Protection Team (HPT) and Infectious Disease Consultant (ID). Discuss case with Infection Control Team (ICT) [5], ensure that staff attending to the patient is wearing PPE[5] and that patient is managed in accordance with IC guidance for MERS-CoV[8].
- HPT informs HPS [6].
- If a cluster is suspected, HPT establishes if there is an epidemiological link between cases.
- HPT ensures that **initial samples**[7] are collected and sent to West of Scotland Specialist Virology Centre (WoSSVC) (or Royal Infirmary of Edinburgh (RIE) for Lothian/Borders/Fife patients) - lab guidance [8]. The lab should be contacted prior sending the samples.
- HPT collects possible case dataset (*Form 1*) [9] and emails HPS [6] - "contact line list" is not required until the case is WoSSVC/RIE MERS-CoV lab test positive.

WoSSVC/RIE UpE lab test positive for MERS-CoV
No → Laboratory informs HPT/HPS. Treat, investigate and review as clinically indicated.
Yes ↓

- Ensure HPS[6], HPT, ICT, ID and clinicians are notified.
- Ensure that staff attending to the patient is wearing PPE[5] and that patient is managed in accordance with IC guidance for MERS-CoV[5].
- HPT identifies and collates list of contacts[4] using contact line list (*Form 1*)[9] – email to HPS[6].
- HPT follow up close contacts[4] using "Close Contact Algorithm"[8].
- WoSSVC/RIE sends residual untreated aliquots **URGENTLY** to PHE Microbiology Colindale for confirmatory testing - lab guidance [8].

Reference lab test positive for MERS-CoV
No → Laboratory informs HPT/HPS. Treat, investigate and review as clinically indicated.
Yes ↓

Baseline – following reference lab confirmatory test:
- Ensure HPS[6], HPT, ICT, ID and clinicians are notified.
- Ensure that staff attending to the patient is wearing PPE[5] and that patient is managed in accordance with IC guidance for MERS-CoV[5].
- HPT ensures case **baseline samples**[10] are collected and sent to PHE Microbiology Colindale - lab guidance [8].
- HPT completes initial case form (*Form 1a*)[9] – email to HPS[6].

↓

Follow up – 14-21 days after reference lab confirmatory test:
- Ensure that staff attending to the patient is wearing PPE[5] and that patient is managed in accordance with IC guidance for MERS-CoV[5].
- HPT completes case follow up form (*Form 1b*)[9] **14-21 days after Form 1a completed** – email to HPS[6].
- HPT ensures sequential **follow up samples** are taken after discussion with the incident control team and sent to PHE Microbiology Colindale - lab guidance [8].

1 - Clinicians should additionally be alert to the possibility of atypical presentations in patients who are immunocompromised.

2 - If the patient has an alternative aetiology, but this does not fully explain the presentation and/or clinical course, then the patient should be considered a possible case and tested for MERS-CoV. It may be appropriate to arrange for testing for other respiratory pathogens in parallel to testing for MERS-CoV at the WoSSVC (or RIE for Lothian/Borders/Fife patients), if all other 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 (or RIE for Lothian/Borders/Fife patients).

3 - MERS-CoV area, as of 24/12/2015: Bahrain, Jordan, Iraq, Iran, Kingdom of Saudi Arabia, Kuwait, Oman, Qatar, United Arab Emirates and Yemen – see map and UK Risk Assessment

4 - Contact definitions (from date of illness onset in index case and throughout their symptomatic period): A) Health and social care workers: workers who provided direct clinical or personal care or examination of a **symptomatic confirmed case** or within close vicinity of an aerosol generating procedure AND who was not wearing appropriate/recommended PPE at the time. B) Household or close contact: any person who has had prolonged face-to-face contact (>15 minutes) **with a symptomatic confirmed case** any time during the illness after onset in a household or other closed setting.

5 – In secondary care, for all patient contact, Personal Protective Equipment (PPE) includes correctly fitted filtering face piece respirator (FFP3), long sleeved, fluid-resistant disposable gown, gloves and eye protection. For guidance on PPE and infection control precautions, please refer to the National Infection Prevention and Control Manual and Infection control guidance for MERS-CoV.

6 –HPT to inform HPS by phone: 0141 300 1100 (day) or 0141 211 3600 (out of hours) and e-mail (NSS.HPSCoronavirus@nhs.net).

7 – Initial samples: lower respiratory tract specimen (i.e. Bronchoalveolar lavage (BAL) or induced sputum) **AND** a duplicate set of nose and throat swabs in viral transport media (VTM) **AND** acute serum.

8 – For more information on lab guidance and other algorithms see: HPS algorithms for MERS-CoV

9 - Forms will be provided to the HPT by HPS on being alerted to a possible case.

10 – Baseline samples: upper and lower respiratory tract samples, serum & EDTA blood, and in addition, for hospitalised patients, urine & faeces - lab guidance[8].

Patient Assessment

Must have ALL of:	**BOX A**
1. Severe acute respiratory infection requiring admission to hospital	
2. Fever ≥ 38ºC or history of fever or cough	
3. Not explained by other infection or aetiology	
4. Evidence of pulmonary parenchymal disease or ARDS on CXR (Remember it may not be appropriate to take CXR in the ED)	

AND

Must have ONE of:	**BOX B**
1. History of travel to or residence in areas where MERS-CoV could have been acquired in the 14 days before symptom onset (i.e. from 01/09/2016 onwards) **MERS-CoV area**: Bahrain, Jordan, Iraq, Iran, Kingdom of Saudi Arabia Kuwait, Oman, Qatar, United Arab Emirates , Yemen (refer to flag poster)	
2. Close contact with a confirmed MERS-CoV case in the 14 days prior to symptom onset while the case was symptomatic	
3. Healthcare worker based in ICU or HDU caring for patients with severe acute respiratory infection, regardless of history of travel or use of PPE	
4. Part of a cluster of two or more epidemiologically linked cases within a two week period requiring ICU admission, regardless of history of travel.***	

***i.e. If your patient presents with **ALL** the criteria from Box A **AND** has had contact with someone unwell and admitted to an ITU in the previous 14 days then consider the possibility of a new, as yet undiagnosed outbreak out with the geographical areas listed above and follow Immediate ED Actions

2. <u>ED signage for patients</u>

Have you visited any of the following countries in the last 14 days?

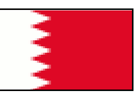
You must tell reception staff <u>immediately</u>.

If you have transited through the Middle East but not left the airport this does not apply

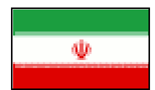
3. Triage nurse reminder signage

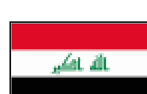
Ask?
1. Severe acute respiratory infection requiring admission to hospital
2. Fever ≥ 38ºC or history of fever or cough

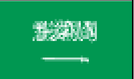
AND one of:
History of travel to or residence in areas where MERS-CoV could have been acquired in the 14 days before symptom onset
Close contact with a confirmed MERS-CoV case in the 14 days prior to symptom onset while the case was symptomatic
Healthcare worker based in ICU or HDU caring for ANY patients with severe acute respiratory infection
CONSIDER MERS & ISOLATE PATIENT IN THE ROOM THEY ARE IN

Bahrain 

Jordan

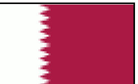
Iran 

Iraq 

Kingdom of Saudi Arabia 

Kuwait

Oman

Qatar 

United Arab Emirates

Yemen

4. **Sample and Laboratory Guidance**

SPECIMEN TYPE

Recommended minimum diagnostic sample set -refer to
http://www.hps.scot.nhs.uk/resp/coronavirus.aspx

1. **Upper respiratory tract sample** (nose and throat swab or nasopharyngeal aspirate) in VPSS container
2. **Lower respiratory tract sample** (induced sputum, endotracheal tube aspirate or bronchoalveolar lavage- we understand it may not be possible to get these samples and if so a sputum would be sufficient)
3. **Clotted blood (4.5ml yellow top container)**

HOW TO ARRANGE TESTING

Please contact the West of Scotland Specialist Virology Centre **BEFORE** the samples are sent to ensure no risk to laboratory staff accidently opening a respiratory sample from a suspected Mers-CoV patient. It is important to discuss a possible case of Mers-CoV with the virologist on clinical for a decision to be made on the urgency of the sample. **No Mers-CoV test will be performed at the laboratory without prior agreement.**

Please contact the laboratory between 09:00 to 17:00 on 0141 201 8722 / 0141 201 8721 (38722/38721)

Out of hours (17:00 to 09:00) and weekends: Switchboard (0141 211 4000) and ask for the Virologist on-call

SPECIMEN CONTAINER AND TRANSPORTATION

Specimens should be sent to the West of Scotland Specialist Virology Laboratory in a **UN3373 Category B** container (these boxes are distributed by ward 5C, QEUH and A+E Departments)).

Once the specimens are packaged correctly in the Category B container, the samples should be sent by taxi or porter (if in GRI) to:

Opening Hours 08:45 to 17:00	Out-of-hours (17:00-0:845) and weekends
West of Scotland Specialist Virology Centre Level 5 New Lister Building Glasgow Royal Infirmary	Wishart Street Admission entrance at Princess Royal Maternity (G31 2HT) Enter under the blue canopy and on right hand wall just before the security office is a **black box** for urgent virology
DO NOT SEND WITHOUT PRIOR DISUSSION WITH THE VIROLOGY LABORATORY	

5. **Specific responsibilities**

Reception staff

- Ask the question about travel history if a patient presents with cough and temperature
- Ask patient to put on a surgical mask if all the criteria are met and cough is present
- Inform Nurse in Charge

Nurse in charge

- Informs Consultant in charge
- Coordinates move of the patient to appropriate location
- Ensures staff assessing patient have PPE available and only staff familiar with PPE are entering the room
- Initiates recording of names of all staff entering the room where patient is located
- Ensures staff have access to appropriate guidance and documents
- Coordinates transport of samples to virology
- Ensures all Infection control precautions are followed
- Exclude visitors where possible and where necessary show how to use PPE

Consultant in charge

- Must make sure the protocol is followed and has responsibility for the patient.
- Discusses the case with the infectious diseases Consultant on call
- Ensures the initial set of samples is obtained
- Ensures all infection control precautions are followed

Infectious disease on call must ensure contact has been made with

a. On call virologist
b. Public Health
c. On call Infection Control Doctor(Consultant Microbiologist on call if out of hours)

HPS link http://www.hps.scot.nhs.uk/pubs/detail.aspx?id=471

6. **Personal Protective Equipment (PPE)**

Personal Protective Equipment (PPE)

To be worn by ALL staff and any visitors entering the room:

- Long-sleeved, fluid-resistant disposable gown.
- Non-sterile disposable gloves.
- An FFP3 respirator conforming to (EN149:2001): Fit testing must be undertaken prior to using this equipment and fit checking must be performed each time an FFP3 respirator is worn.
- Eye protection compatible with the FFP3 respirator (prescription glasses do not provide adequate protection against droplets, sprays and splashes).

It is vital that the PPE described above is worn for all airway management, including intubation.

7. **Cleaning and decontamination**

Decontamination of affected clinical areas in ED

Following transfer and/or discharge of patient(s) PPE must be worn to clear and decontaminate the area.(Note, this also applies to Domestic Service staff)

Remove: All healthcare waste and any other disposable items
Bedding/bed screens, treat as infectious linen
Patient care equipment following decontamination

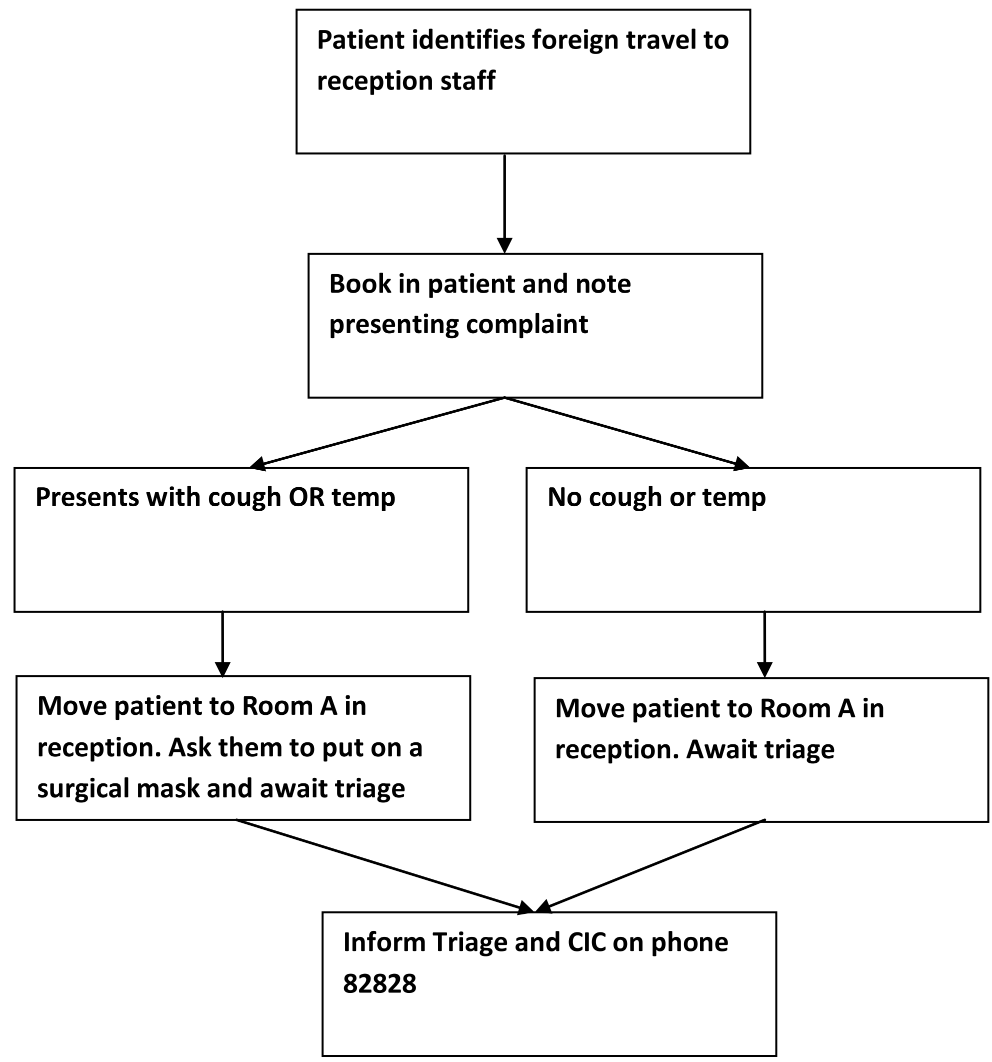
The room/area should be decontaminated using a combined detergent disinfectant solution at a dilution (1000ppm av.cl.);

A detailed guide on Infection Control issues including PPE can be found here and all staff working with these patients should be trained in PPE and fit tested.
http://www.hps.scot.nhs.uk/resourcedocument.aspx?id=2050

8. Site specific management

A. QEUH

QEUH ED triage



QEUH ED triage

1. Keep the patient in the room they are in when the diagnosis is first suspected. Keep the *door closed*.

   Specific Examples

   1. Triage Room A or B – isolate in room and quarantine **both** Triage Rooms A & B (this is to allow the unaffected 'Clean' Triage room to be used for staff changing)
   2. Ambulance queue move patient to Major Procedures Rooms 4 or 8 in Resus
   3. Ambulance-remain in ambulance until move to Procedure room/HDU/ITU.

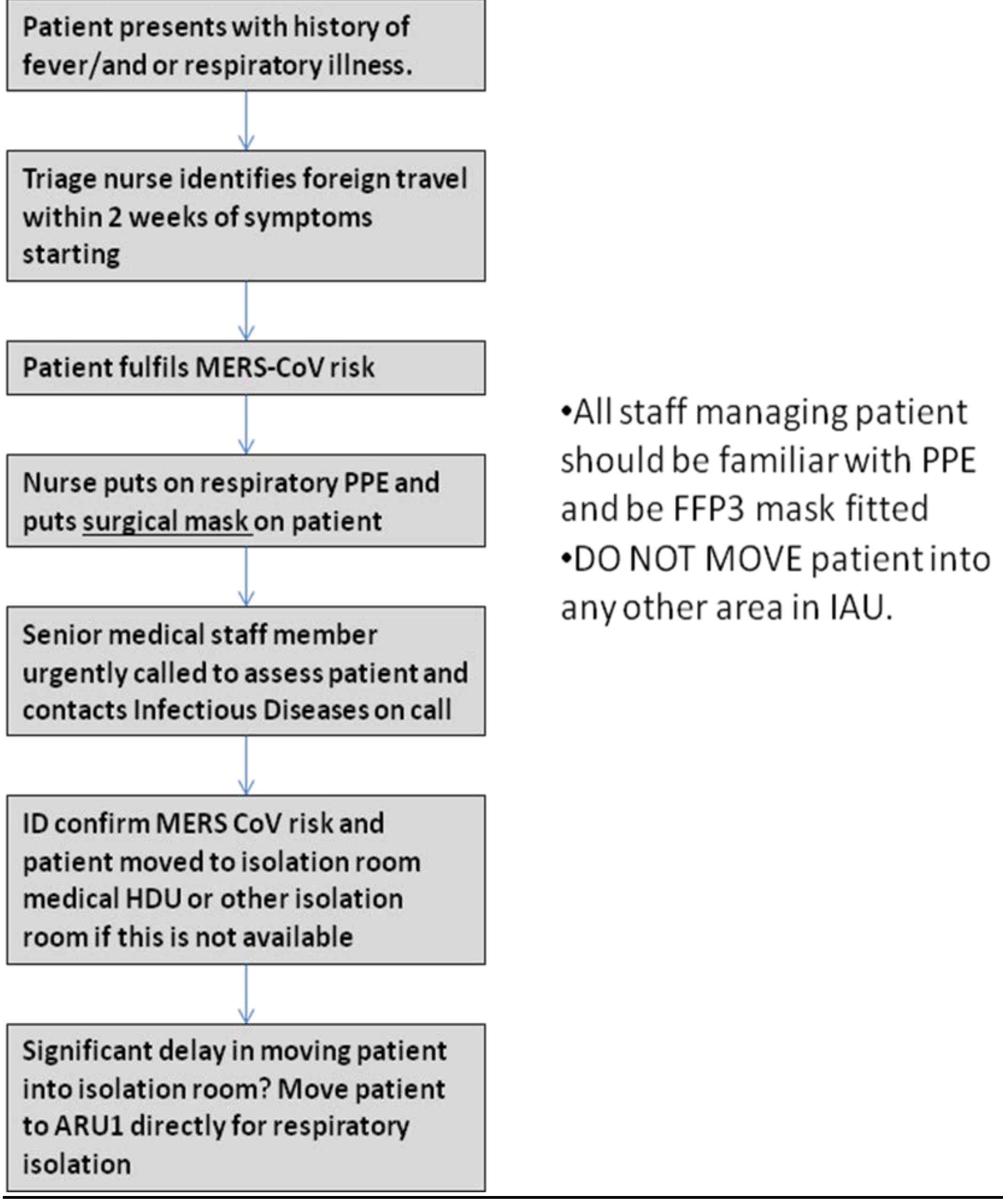
   If reception highlight a potential patient then move them to Room A in Reception for Triage (flow chart attached for Reception staff)

2. Put surgical mask on patient (as per flow chart for Reception staff) or once concern has been raised by assessing staff i.e. Boxes A & B both confirmed.
3. Apply **full** PPE including FFP3 mask, eye protection and fluid repellent gown to anyone assessing the patient once concern has been raised i.e. Boxes A & B both confirmed
4. Inform Nurse-in-Charge and Consultant-in-Charge as soon as concern is raised.

Emergency Department Dos and Don'ts

- The patient **should not be moved anywhere** through the department without consultation with the ED consultant in charge in conjunction with the Infection Control Consultant on call.
- Unless the patient has an emergent airway issue **ALL** intubations should be performed in a respiratory isolation rooms in **ITU**. If intubation is required for an airway issue in-extremis in ED it should be performed in one of the Procedures Rooms.
- Under no circumstances should the Decontamination Room be used to assess and treat unwell patients with ? MERS (or VHF).
- **CXR** should be done as a portable in HDU/ITU with radiographers who are PPE trained. A patient with possible MERS-CoV should not be X-rayed in the radiology department
- If Infectious disease team decide the patient requires admission they should be managed in a respiratory isolation room in HDU/ITU. Once a room is ready then the patient (wearing surgical mask) should be moved to HDU using the route with minimal patient contact through ED and up to HDU using *core lifts G*. Close the corridors affected by the patient journey to the public.

QEUH IAU triage



QEUH IAU triage

1. Keep the patient in the triage area they are in when the diagnosis is first suspected.
2. Put surgical mask on patient once concern has been raised by assessing staff

   i.e. Boxes A & B both confirmed.
3. Apply **full** PPE including FFP3 mask, eye protection and fluid repellent gown to anyone assessing the patient once concern has been raised i.e. Boxes A & B both confirmed
4. Inform Nurse-in-Charge and Consultant-in-Charge as soon as concern is raised.

IAU Dos and Don'ts

- The patient **should not be moved anywhere** through the department without consultation with the IAU consultant in charge and in conjunction with the Infection Control Consultant on call and not until a bed has been identified and prepared in HDU.
- If no bed is available within a reasonable timeframe in HDU (as agreed by Infection Control consultant) then the patient should be moved to a room in ARU1 as a temporary measure.
- Unless the patient has an emergent airway issue **ALL** intubations should be performed in a respiratory isolation rooms in **ITU**.
- **CXR** should be done as a portable in HDU/ITU with radiographers who are PPE trained. A patient with possible MERS-CoV should not be X-rayed in the radiology department
- If Infectious disease team decide the patient requires admission they should be managed in a respiratory isolation room in HDU/ITU. The ID on call team must ensure that HDU are aware of the patient and make sure a room has been cleared and prepared before the patient can be moved.
- Once a room is ready then the patient (wearing surgical mask) should be moved to HDU using the route with minimal patient contact and up to HDU using core lifts G.

B. Royal Hospital for Children Emergency Department.

ED reception staff

- Reception staff to ask patients if they have been to one of the "MERS POTENTIAL" countries in the last 14 days.
- If there is a positive travel history to any of the listed countries in that time frame, reception staff to ask patient to wait in the breast feeding consultation room across from the reception desk for *immediate* assessment by the triage nurse.
- **Positive travel history –THE PATIENT MUST have been in a "MERS potential" country in the last 14 days before symptom onset and have respiratory symptoms. (NOT patient relative and NOT just transiting through the airport)**
- Reception staff to inform triage nurse and ED nurse coordinator immediately.
- Reception staff to take screen shot identifying list of patients in the ED waiting room and in triage queue.
- Breast feeding room to have a terminal clean after it is vacated.

ED Triage Nurse

- Triage nurse to wear appropriate PPE (FFP3/Eye protection/gloves/theatre gown) to assess child
- Triage nurse to go to the breast feeding room to confirm that child has respiratory symptoms and give the patient a surgical face mask if possible and take patient/s directly through to CDU Room 17/18 to gather further information.
- If the child is coughing and unable to wear a mask then close all the doors and clear the corridor before moving the child
- **Full information gathering should not be done in the breast feeding room or in triage** to minimize contamination of rooms and to allow more time to gather the information in a safe and private room.
- If child appears unwell, take the child straight to the resuscitation room.
- **Remember lots of children will just have a simple cold. The ones we are concerned about are the ones :**

  Unwell enough requiring admission to hospital with severe acute respiratory infection (clinical and/or radiological evidence of pneumonia)

  (+) With Fever >/= 38 ^{o}c or history of fevers and cough

  (+) Together with the travel history

  - **See Health Protection Scotland Secondary Care Algorithm (MERS-CoV)**

Resuscitation room

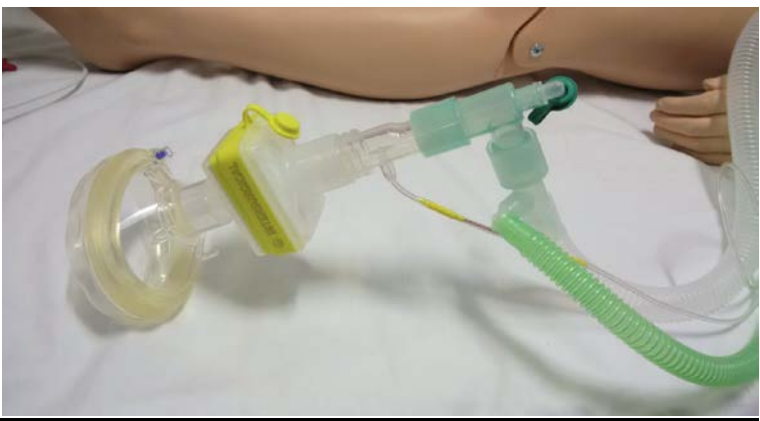
- Patients arriving by ambulance. Parents should be asked a brief travel history.
- These potentially unwell MERS patients do NOT go to CDU and are managed in the Resuscitation room.
- Child should be placed at one end of the resuscitation room and the automatic door on that end is sealed with signage restricting access to allow a single point of access.
- Non essential staff are not permitted to access this space.
- Please use resuscitation space 4 if space 4 is being used, please use space 1. If bay 4 is being used, please lock the store room door from the other side to prevent contamination of store room.
- All staff in direct contact with the child MUST wear appropriate PPE

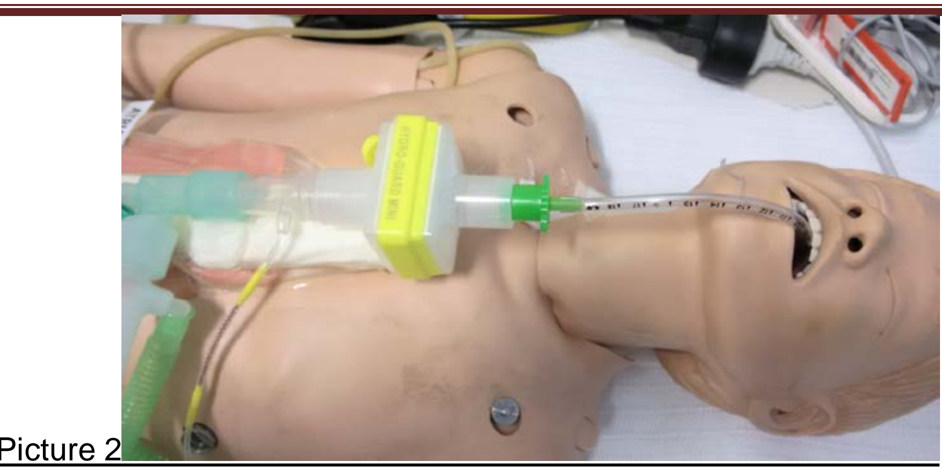
Intubation and Transfer

- All staff in direct contact with the patient must wear appropriate PPE.
- Intubation of a potential MERS child should be done in the Resuscitation room.
- Intubation to be done with a cuffed endotracheal tube and an extra INTERSURGICAL filter should be placed on the patient end. (See picture 1)
- Transfer to PICU- The oxylog ventilator is not a closed circuit so it has been agreed that it should NOT be used for transfer. The child should have an extra INTERSURGICAL filter on the patient end and be bagged up to PICU (See picture 2)
- Transfer – corridor to closest lift. No significant risk to people in corridor unless in close contact with patient.

- Patient should be transferred to Room 5 in PICU

- Picture 1



Picture 2 

Medical Assessment of patient in CDU pressure room

- All non essential medical equipment should be removed from the room before the patient enters
- Initial medical assessment of potential MERS patients should be done by an ED doctor and ED nurse.
- PPE should be worn by the staff at all times.
- Those in PPE should be in communication with a member of staff outside at all times.
- Medical staff to contact Infectious Diseases (ID) and Infection Control (IC) team as soon as possible for advice.
- If the child is unwell, move the child through to the resuscitation room.
- If the child requires admission, the ED doctor will refer the patient to the medical team for further management.
- If the child is well enough to be sent home, virology samples should still be taken (just in case they represent 24 hours later) and the child can be sent home with advice to return if worsening symptoms. This must be done in consultation with the on call Public Health consultant.

Use of the CDU pressure room for MERS

- Close each door after patient goes through into room 17/18.
- Supplies/equipment are available in store room in CDU (right side across from reception desk)
- Move supply/equipment trolley from store room into the negative pressure room (Between the inner and outer door)
- 2 large yellow waste bins are required - One should be placed in the negative pressure room (inside room through both doors) and another between inner and outer doors for contaminated PPE.
- De-robing should take place between inner and outer doors of negative pressure room and contaminated PPE should be placed in the yellow waste bin.
- Medical equipment –should be single use where possible or cleaned as per manufacturers guidelines.

Parents/ Adult in attendance with child

- Where possible attending adults should be restricted in number.
- No attending children should be permitted except in exceptional circumstances.
- Parents of patients should be advised of the risk to them and if well should be given PPE and instructed on how to use it. They can wear an FFP3 mask but will not be fit tested.
- *Unwell a*dult/parent should be assessed for symptoms and remain in CDU pressure room and advised to wear a surgical mask
- ED doctor to contact Adult ED to discuss management of unwell adult.

PPE training and stock

- Each department is responsible for their own staff training.
- Training sessions/ refresher sessions on PPE use are run by Tony Brown and Jim Kidd in the ED.
- ED senior charge nurse is responsible for PPE stock in store room in both ED and CDU.

List of RHC Contact numbers

CDU Consultant	**84678**
ED Majors Consultant	**84059**
Infection Control **Susie Dodd Lead Infection Control Nurse)** **Angela Johnson (Senior IPCN)** **Sharon Carlton (Adminstrator)**	 **86381** **86381** **86382**
Infectious Diseases Consultant- Dr Conor Doherty **Infectious Diseases Consultant- Dr Rosie Hague** **Infectious Diseases Consultant- Dr Louisa Pollock**	**Page 18418** **Page 18076** **Mobile via switchboard**
Microbiology lab	**89132**
PICU Consultant	**84719**
Resus space 1	**84042**
Resus space 4	**84045**
Virology lab (West of Scotland Specialist Virology centre)	**38721**

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C. GRI

ED Triage

1. If patient reports history of travel to one of the affected countries move to ‘clean prep room’ from reception or triage. If patient has been in triage this room should be cleaned with 1000 ppm av.Cl by domestic staff wearing full PPE prior to being used(page 8).

2.If patient requires resus level care this can be provided in the clean prep room

3. Keep both doors closed.

4. Commode to be provided.

5. Place screens outside corridor door of clean prep room to create a bay for equipment storage and staff changing.

6. Put surgical mask on patient.

7. Apply full PPE(page 8) to anyone assessing the patient once the concern has been raised.

8. Inform nurse-in-charge and consultant-in-charge and IPCT (consultant microbiologist on call if out of hours) as soon as concern is raised.

9. If fulfils criteria as a POSSIBLE case patient should be transferred to a negative pressure room in ITU or respiratory. Once a room is ready patient should be moved using a route to minimise contact with other patients. Close corridors to the public during transfer. Patient should wear a surgical mask during this transfer.

10. Record the names of those who were in the waiting room with the patient

GRI MAU triage

1. If GP requests on the phone review of a patient and reports travel to one of the affected countires , request that they direct telephone query to ID consultant on call for consideration of direct admission to QEUH

2. If patient reports travel to one of the affected countries move from MAU triage to 'clean prep room' in ED.

3. Ongoing nursing care will be provided by ED staff.

4. Ongoing medical care will be provided by MAU staff.

5. For further detail see ED triage notes.

Emergency department dos and don'ts.

- The patient should not be moved anywhere through the department without consultation with the ED consultant in charge in conjunction with the consultant on call for infection control.
- Unless the patient has an emergent airway issue all intubations should be performed in a respiratory isolation room in ITU.
- CXR should be done as portable, by radiographers who are PPE trained. A patient with MERS CO-V needing to visit the radiology department should be discussed with IPCT.

D. CLYDE, RAH

Patient identifies foreign travel to reception staff

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Book in patient and note presenting complaint

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Present with cough and temperature → Ask patient to put on surgical mask. Move patient to Resus 5 Single room and await triage → Inform Nurse in Charge

No cough or temperature → Prioritise to triage → Inform Nurse in Charge

Suspected MERS - Immediate ED Actions

Move patient to the designated room

Patient identified by Reception staff

- Move patient to the Resus 5 single 1 room
- Quarantine **both** Resus 5 single room and Resus Bed 4 (this is to allow the unaffected 'Clean' Resus Bed 4 to be used for staff changing)

Ambulance service

- Move patient to the Resus 5 single room
- Quarantine **both** Resus 5 single room and Resus Bed 4 (this is to allow the unaffected 'Clean' Resus Bed 4 to be used for staff changing)

Patient is identified during assessment in ED and is in the bay area

- Ask the patient to put on surgical mask
- Immediately inform Nurse in Charge and Consultant in Charge
- Move patient to the Resus 5 single room
- Quarantine **both** Resus 5 single room and Resus Bed 4 (this is to allow the unaffected 'Clean' Resus Bed 4 to be used for staff changing)

Apply full PPE including to anyone assessing the patient

Emergency Department Dos and Don'ts

- The patient **should not be moved anywhere** through the department without consultation with the ED Consultant in Charge in conjunction with the Infection Control Consultant on call

- If intubation is required for an airway issue in-extremis in ED it should be performed in Resus 5 single room

- **CXR** should be done as a portable with radiographers who are PPE trained (a patient with possible MERS-CoV should not be X-rayed in the radiology department)

- If Infectious disease team decide the patient requires admission the most appropriate option for admission has to be agreed by clinical team with ID specialists and ICT

- If the decision is to admit patient to ITU they have to be taken by the shortest route, using lift to ITU and placed in isolation room

- Close the corridors affected by the patient journey to the public until this area has been appropriately cleaned

Suspected MERS immediate actions in MAU

- Keep the patient in the room they are in when the diagnosis is first suspected
- Put surgical mask on patient once concern has been raised by assessing staff
- Inform Nurse in Charge and Consultant in Charge as soon as concern is raised
- Apply full PPE including FFP3 mask, goggles and fluid repellent gown to anyone assessing the patient once concern has been raised

MAU Dos and Don'ts

- The patient **should not be moved anywhere** through the department without consultation with the Consultant in Charge and in conjunction with the Infection Control Consultant on call

- Consultant in Charge should discuss the most appropriate option for admitting patient with ID consultant and Infection Control Doctor

- Unless the patient has an emergent airway issue **ALL** intubations should be performed in a respiratory isolation rooms in ITU

- **CXR** should be done as a portable with radiographers who are PPE trained (a patient with possible MERS-CoV should not be X-rayed in the radiology department)

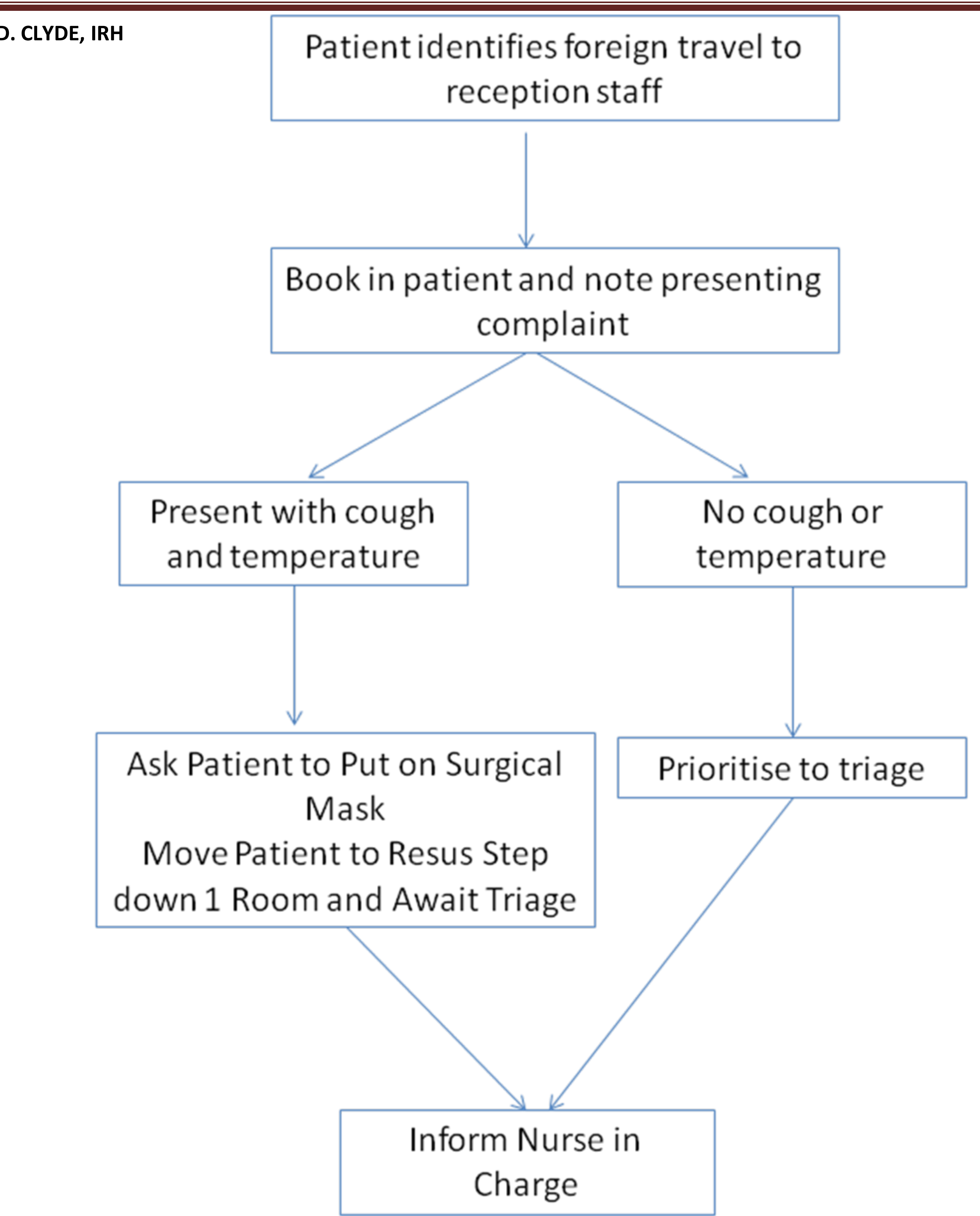
- If the decision is to admit the patient to RAH they should be managed in a respiratory isolation room in ITU

- The Consultant in Charge must inform ITU about the patient transfer

- Once a room in ITU is ready then the patient (wearing surgical mask if possible) should be moved to ITU by the shortest route, using lift to ITU and placed in isolation room

- Close the corridors affected by the patient journey to the public until this area has been appropriately cleaned

D. CLYDE, IRH



Suspected MERS - Immediate ED Actions

Move patient to the designated room

Patient identified by Reception staff

- Move patient to the Resus Step Down 1 room
- Quarantine **both** Resus Step Down 1 and Resus Step Down 2 (this is to allow the unaffected 'Clean' Resus Step Down 2 to be used for staff changing)

Ambulance service

- Move patient to the Resus Step Down 1 room
- Quarantine **both** Resus Step Down 1 and Resus Step Down 2 (this is to allow the unaffected 'Clean' Resus Step Down 2 to be used for staff changing)

Patient is identified during assessment in ED and is in the bay area

- Ask the patient to put on surgical mask and immediately inform Nurse in Charge and Consultant in Charge
- Move patient to the Resus Step Down 1 room, quarantine **both** Resus Step Down 1 and Resus Step Down 2 (this is to allow the unaffected 'Clean' Resus Step Down 2 to be used for staff changing)

Apply full PPE to anyone assessing the patient

Emergency Department Dos and Don'ts

- The patient **should not be moved anywhere** through the department without consultation with the ED Consultant in Charge in conjunction with the Infection Control Consultant

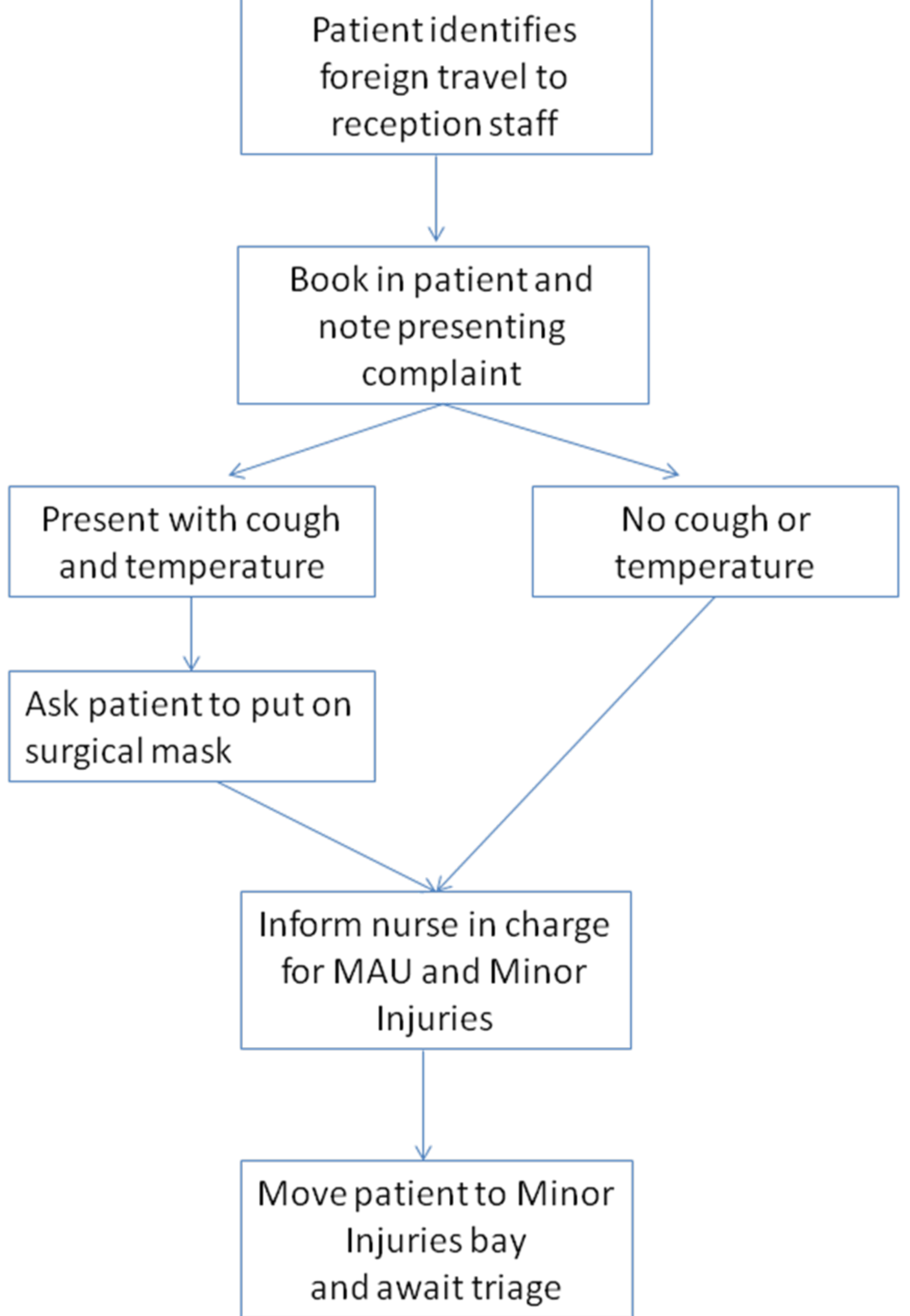
- If intubation is required for an airway issue in-extremis in ED it should be performed in Resus Step Down 1 room

- **CXR** should be done as a portable with radiographers who are PPE trained (a patient with suspected MERS-CoV should not be X-rayed in the radiology department)

- If Infectious disease team decide the patient requires admission the most appropriate option for admission has to be agreed by clinical team with ID specialists and ICT

- If the decision is to admit patient to IRH ITU they have to be taken by the shortest route, using theatre lift to ITU and placed in isolation room
- Close the corridors affected by the patient journey to the public until this area has been appropriately cleaned

D. CLYDE, Vale of Leven



Patient identified at the MAU or at the Out-of-Hours GP Clinic

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Do not move patient out of the Bay Area/GP Room

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Inform Nurses in Charge for MAU and MIU who will take decision on the most appropriate location for the patient

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Leave patient in MAU bay and transfer all other MAU work to MIU MIU to continue their work in Fracture Clinic area	Transfer patient to Minor Injuries Unit MIU to continue their work in Fracture Clinic area

Suspected MERS - Immediate MAU Actions

Move patient to the designated room/bay area

Patient identified by Reception staff

- Ask the patient to put on surgical mask if cough and temperature present
- Inform Nurse in Charge for Medical Assessment Unit (MAU) and Minor Injuries Unit (MIU). MAU Nurse in Charge to inform the Consultant in Charge for MAU
- Patient to be transferred to a bay in MIU
- Make sure all patients are transferred out of Minor Injury Unit and all non-essential equipment has been removed from the area
- MIU to move all work to the Fracture Clinic
- Transfer the patient to the MIU bay and await triage
- Use adjacent bay as “clean anteroom” for staff changing and for decontaminating the equipment
- Keep the MIU entrance doors closed

Ambulance service – inform the unit about possible MERS case in advance and move patient to MIU

Patient is identified during assessment in MAU and is in the bay area

- Ask the patient to put on surgical mask
- Immediately inform Nurse in Charge and Consultant in Charge
- Do not move the patient out of the bay
- Nurse in Charge to discuss with senior management the most appropriate placement for the patient
    - Issues to consider will include:
        i. occupancy of the MAU and MIU
        ii. availability of domestic staff to carry out terminal clean of the unit
        iii. predicted stay of the patient at the VoLH
        iv. senior management will consider a divert of all SAS calls to another site
        v. senior management will inform NHS24 during OOH period and consider diverting all OOH GP calls to other OOH centres

If it is possible within a reasonable timeframe to carry out terminal clean of MAU then the patient should be transferred to MIU (see actions above for the move of workload of MIU) and terminal clean of MAU should be carried out before normal work of MAU can be resumed.

In case it is not logistically feasible to carry out a terminal clean of MAU within reasonable timeframe then the patient should be cared for at the MAU bay and all the other MAU work should be transferred to MIU area.

Patient is identified at the Out-of-Hours GP Clinic

Keep the patient in the GP clinic room if clinical situation allows this and follow the actions as for "Patient identified by Reception Staff" pathway

Apply full PPE including FFP3 mask, goggles and fluid repellent gown to anyone assessing the patient once concern has been raised

MAU Dos and Don'ts

- The patient **should not be moved anywhere** through the department without consultation with the MAU Consultant in Charge in conjunction with the Infection Control Consultant
- **CXR** should be done as a portable with radiographers who are PPE trained (a patient with possible MERS-CoV should not be X-rayed in the radiology department)
- If Infectious disease team decide the patient requires admission the most appropriate option for admission has to be agreed by clinical team with ID specialists and ICT
- If the decision is to admit patient to ward 3 (AMRU) they have to be taken by the shortest route, using the AMRU lift and placed in isolation room 6
- Close the corridors affected by the patient journey to the public until area has been appropriately cleaned

Actions if a suspected MERS patient is identified or abmitted on ward 3 (AMRU)

Suspected MERS patient is identified on ward 3

- Immediately inform Nurse in Charge and Consultant in Charge
- Move patient to isolation room 6. Make sure room is prepared and all the non-essential equipment has been removed from the room
- Vacate the adjacent room 5 and use this as "clean anteroom" for staff changing and decontamination of the equipment

It has been decided to admit a suspected MERS patient from MAU/MIU

- MAU Nurse in Charge has to inform the ward 3 Nurse in Charge in advance and coordinate transfer of the patient. Please follow the actions described above.