MIDDLE EAST RESPIRATORY SYNDROME [MERS] – INFECTION CONTROL MANAGEMENT OF SUSPECTED OR CONFIRMED CASES – CHW

DOCUMENT SUMMARY/KEY POINTS

- A suspected or probable case of MERS (see definitions) must meet the criteria and the Infectious Diseases Consultant on Call must review all cases
- Standard, contact and droplet precautions apply.
- All patients arriving in the Emergency Department with respiratory symptoms and a relevant travel history within the last 14 days should be treated as a suspect MERS case until it is proven otherwise.
- Signs must be displayed on the door designating the room as an Isolation Room and showing the Infection Prevention and Control precautions and personnel protective equipment that must be worn.
- Negative pressure-rooms are not necessary.
- DO NOT use aerosol-generating procedures on suspect MERS patients (eg. Nebulisers) unless essential for clinical management.

This document reflects what is currently regarded as safe practice. However, as in any clinical situation, there may be factors which cannot be covered by a single set of guidelines. This document does not replace the need for the application of clinical judgement to each individual presentation.

CHANGE SUMMARY

- Minor changes made throughout in response to staff feedback from Variety Ward and Emergency Department. The changes were to close gaps and remove contradicting information.

READ ACKNOWLEDGEMENT

- All clinical staff should be aware of this document.

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1 Introduction

Middle East Respiratory Syndrome (MERS) is a potentially lethal respiratory disease caused by a novel coronavirus. The virus was first isolated from a patient who died from a severe respiratory illness in June 2012 in Jeddah, Saudi Arabia. As of May 31, 2015, 1180 laboratory confirmed cases (483 deaths; 40% mortality) had been reported to the World Health Organisation (WHO). http://www.who.int/emergencies/mers-cov/en/ Both community and hospital acquired cases had been reported with little human-to-human transmission reported in the community. Most cases of MERS have occurred in Saudi Arabia and the United Arab Emirates. Cases have been reported in Europe, USA and Asia in people who travelled from the Middle East or their contacts.

Clinical features of MERS range from asymptomatic or mild disease to acute respiratory distress syndrome and multi-organ failure resulting in death, especially in individuals with underlying comorbidities. No specific drug treatment exists for MERS and infection prevention and control measures are crucial to prevent spread in healthcare facilities.

1.1 Case Definition

Suspected case

MERS-Corona Virus (CoV) testing should be considered for:

- Individuals with clinical or radiological evidence of pneumonia or pneumonitis and history of travel to (1), or residence in, the Middle East (2), in the 14 days before illness onset.
- Individuals with clinical or radiological evidence of pneumonia or pneumonitis and history of contact with those mentioned above in the 14 days before illness onset.
- Health care workers with clinical or radiological evidence of pneumonia or pneumonitis who have been caring for patients with probable or confirmed MERS infections.
- Laboratory workers with clinical or radiological evidence of pneumonia or pneumonitis, who have handled clinical specimens from confirmed MERS-CoV cases without adequate infection prevention and control precautions.

Probable case

- A person with an acute respiratory infection with clinical, radiological, or histopathological evidence of pulmonary parenchymal disease (e.g. pneumonia or Acute Respiratory Distress Syndrome (ARDS)); and
  - No possibility of laboratory confirmation for MERS-CoV because the patient or samples are not available for testing; and

Confirmed case

- A confirmed case requires laboratory definitive evidence of infection with MERS-CoV.

Notes:

1. Transiting through an international airport (<24 hours stay, remaining within the airport) in the Middle East is not considered to be risk factor for infection.

2. Countries in the Middle East and immediate surrounding areas may be defined as Bahrain, Iraq, Iran, Israel, Jordan, Kuwait, Lebanon, Oman, Palestinian territories, Qatar, Saudi Arabia, Syria, the United Arab Emirates (UAE), and Yemen.

2 Personnel and Contact Numbers

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POSITION	CONTACT DETAILS
Paediatric Virologist/ Microbiologist	98453823/ Page 6444 9845 3279/ Page 7019 9845 3267 / Page 6628
Infection Prevention and Control	98452578/ Page 6131 98452534 /Page 6550
Public Relations	9845 3364
Nurse Unit Manager/Team Leader – Variety Ward	9845 1063 Page 6355
Radiology	9845 2944
Manager Domestic Services	9845 3248/ Page 6556
Biomedical Engineering	9845 2602
After hours Nurse Manger	9845 2466 Page 6056 Mobile telephone through switch.

3 Command and Control

Responsibility for implementation of this policy is the direct responsibility of appropriate Clinical Line Managers caring for affected patients.

- The Clinical Line Managers will consult with the Infection Prevention and Control Team regarding appropriate patient placement and Infection Prevention and Control procedures.
- Where there is a dispute between Clinical Line Managers and Infection Prevention and Control/ Microbiology or if there is no policy on a particular issue or the policy needs updating then there needs to be further discussion between Clinical Line Managers, Infection Prevention and Control, Microbiology and the Director of Clinical Operations to develop a consensus agreement based on best evidence at that time. If a dispute arises about policy it is to be referred to the Chief Executive for resolution.

NOTE: MERS infections are mandated as a reportable infection to Public Health Unit.

- A Reportable Incident Brief (RIB) will be sent to New South Wales (NSW) Ministry of Health (MOH) on any potential media interests or problems. This is currently the responsibility of the Executive Assistant to the CE.

4 Infection Prevention and Control Guidelines

All Infection Prevention and Control guidelines have been developed with the best information at any given time. This information is constantly changing as more evidence comes to light about the MERS-CoV virus and thus changes to these guidelines will occur as updates are received.

4.1 Infection Prevention and Control Precautions

Infection prevention and control precautions for caring for potential MERS patients consist of the following.

Standard, Contact and Droplet Precautions

- Perform hand hygiene before patient contact,
- Handwash with 2% Chlorhexidine solution after patient contact, and
- Use alcohol based hand rub after contact with the patient or patient's surrounds. Allow to dry.
- Wearing appropriate Personal Protective Equipment (PPE) for healthcare worker protection.
- Patient's room – Door must remain shut

Personal Protective Equipment (PPE)

- Surgical masks: Staff looking after children with suspected MERS will wear surgical masks. These masks must be discarded when leaving the room or changed every 2 hours
- Goggles/face shield as respiratory viruses can be transmitted through the conjunctiva. DO NOT RUB YOUR EYES OR TOUCH YOUR FACE WITH UNWASHED HANDS when looking after children with suspected MERS.
    - Staff who experience an eye splash with material that may be infected should wash their eyes thoroughly with normal saline or tap water
    - Face shield/goggles should be wiped with disposable 70% Isopropyl alcohol impregnated wipes after each use.
    - The Protective eye wear is NOT disposable.
- Impervious gowns when in the child's room.
- Gloves - non-sterile - must be worn for handling body fluids.

Donning and Removal of Personal Protective Equipment (PPE)

- Always perform appropriate hand hygiene action prior to donning PPE.
- All PPE equipment should be put on before entering the room.
- Gown and gloves to be removed in designated space.
- After washing hands in 2% chlorhexidine antiseptic hand wash, then use alcohol based hand rub-remove face shield/goggles and mask. Perform hand hygiene with alcohol based hand rub again.
- PPE must be removed in a way that does not allow transmission of MERS CoV s to the wearer.

5 Management of Child

5.1 Emergency Department

All patients arriving in the Emergency Department with respiratory symptoms and a relevant travel history within the last 14 days should be treated as a suspect MERS case until it is proven otherwise.

- The triage nurse should put on a surgical mask and face shield/goggles and ascertain the child's status as rapidly as possible by asking the relevant questions (see Appendix 2
- All potential cases should be diverted into the infectious waiting room; Ambulance arrivals should be triaged as usual and placed in isolation.
- Patients seen in the Emergency Department need to been seen in the Fast Track Room
- Signs must be attached to the door designating the room as an Isolation Room and showing the infection prevention and control precautions and PPE that must be worn.
- The door must remain closed and the child and family informed of the reason for this.
- Standard, contact and droplet infection prevention and control measures, as listed previously must be enforced.
- Inform the Infectious Disease Team
- The Infection Prevention and Control Team must be notified. After hours contact the Senior Nurse Manager.
- Minimise the number of staff entering and leaving the child's room.
- Equipment such as thermometers and stethoscopes should be dedicated to the patient and left in the room.
- DO NOT use aerosol-generating procedures on suspect MERS patients (eg. Nebulisers) unless essential for clinical management. A spacer device may be used for administration of inhaled medications. Oxygen if required can be given via mask or nasal prongs.
- Order tests and collect specimens as per section 5.3- Inpatient Care. Notify the Microbiologist (so testing can be arranged).
- Appropriate treatment needs to commence in the Emergency Department for a patient with suspected MERS who needs to be admitted, then transferred to a single room as soon as they are stable and the appropriate room is available.

5.2 Transferring the Child to the Ward

If the child needs to be transferred to the ward the following strategies must be implemented;

- Notify the ward and allow time for adequate set up and preparation.
- The child must be transferred with a surgical mask in place if possible.
- Parents/relatives accompanying the child should also wear a surgical mask.
- The nurse and porter must accompany the child in personal protective surgical mask, face shield/goggles, gown and gloves.

5.3 Inpatient Care

- Standard, contact and droplet infection prevention and control measures, as listed previously must be enforced.
- Children with suspected or probable MERS should be nursed single room in Variety Ward or PICU. This room does not need to be a negative pressure-room. A room with HEPA filters is not necessary.
- The room must have all doors closed. The child and family must be informed of the reason that the door needs to remain shut.
- The room must have signage attached to the door detailing the type of isolation precautions required and the personal protective equipment to be worn.
- Minimise the number of staff entering and leaving the child's room.
- If possible, allocate a staff member to care for the patient for an entire shift. The staff member can care for other patients.
- Equipment should be dedicated to the patient's use only and should stay in the room, or be cleaned thoroughly on removal with neutral detergent and water followed by wiping over with disposable 70% Isopropyl alcohol impregnated wipes.
- Transfer of the child to other areas for investigations must be undertaken only when absolutely necessary. Preferably investigations should occur in the patients room (e.g chest x-rays).
- Infectious Cleaning of these departments needs to be performed when the patient leaves. This needs to be as per the *NSW MOH Environmental Cleaning Policy*.
- The child can only leave the room when cleared by the Infection Prevention and Control Team. The duration of infectivity for MERS-CoV infection is unknown. Precautions should be applied throughout any admission; should be continued until 48 hours after the resolution of symptoms.

Investigations required for suspected MERS cases at CHW

Routine investigations are to be collected as usual.

The following investigations must be taken.

1. Two nasopharyngeal aspirates (NPA) should be collected for diagnosis (substitute two nasopharyngeal swabs in older children where NPA is impossible to collect). One is for routine virology molecular testing (PCR) for respiratory viruses, which will be performed at CHW, the other for MERS PCR, which will be performed at Institute for Clinical Pathology and Medical Research (Westmead) (ICPMR).
2. A dry throat swab is to be taken for M/C&S (Group A Streptococcus) if required.
3. Request form to be labelled with patient identifiers and as "suspect or probable MERS". Send all specimens to Pathology for management.

5.4 Discharge

Prior to discharge from hospital a suspected case, the patient should be afebrile for 48 hours and symptoms resolved. However, if appropriate home isolation can be ensured and a

competent caregiver is available and able to be trained in infection prevention and control then the child may be discharged earlier.

1. The Public Health Unit should be notified of the child's discharge and home infection prevention and control training should be conducted. This is the responsibility of the admitting team to notify.

6 Parents, Siblings & Visitors

- Parents may stay with the child if they are asymptomatic.
    - If parents are symptomatic they need to be encouraged to go home and arrange for someone else to provide care for the patient
- Asymptomatic parents must don a surgical mask prior to leaving their child's room.
- Parents must be instructed to wash hands prior to exit, and then perform an additional hand hygiene action on the outside of the room after closing the door of the isolation room. Visitors are not allowed other than carers
- If it is not possible to restrict the visiting of well siblings, they must remain in the room They are not allowed to wander around the ward or play with any communal toys. The family must exit the hospital by a direct route and not use communal areas in the hospital.

7 Equipment

- If the child is relocated to another room, all equipment if possible should be moved with the child to the new location.
- If devices are to be re-used they should be reprocessed in accordance with manufacturer's instructions.
- Toys should remain with the child.
- Ward equipment can be washed with neutral detergent and water and then wiped over with disposable 70% Isopropyl alcohol impregnated wipes.
- Equipment from the Biomedical Engineering Department must be bagged in a clear plastic bag and appropriately tagged.

8 Cleaning

All cleaning staff should wear PPE including surgical masks, non sterile gloves and gown.

8.1 Daily cleaning during admission

- The child's room should be thoroughly cleaned daily as per the *NSW MOH Environmental Cleaning Policy*. This includes wiping over of all surfaces that may have

been touched such as light switches, doorknobs, television controls, telephones and benches.

- Rubbish bins and dirty linen bags must be removed at least once a day.
- The floor must be washed daily as usual.

8.2 Discharge cleaning

- Terminal cleaning should be performed according to the *NSW MOH Environmental Cleaning Policy* (PD 2012_061) and Standard Operating Procedures.
- Once the patient has left the room the entire room should be cleaned with a neutral detergent then allowed to air dry. Once the room is air dry repeat the cleaning process with a 5000 ppm bleach solution (eg. 5 dichloroisocyanurate tablets dissolved in 1L of water) and ensure the disinfectant is liberally applied to all surfaces within the isolation room.
- Disposable 70% isopropyl alcohol impregnated wipes should be used for surfaces on which bleach is contraindicated. All equipment should be wiped down with neutral detergent and water followed by disposable 70% isopropyl alcohol-impregnated wipes.

9 Linen and Waste

- Linen skip to be kept in patient's room
- A Clinical Waste bin must be available inside the patient's room.
- All waste including discarded PPE, must be placed in Clinical Waste bags and disposed of in the usual manner.
- A sharps container should be available at the point of use if practicable.

10 Specimen Collection

- Notify Pathology that specimens will be sent
- Specimens must be enclosed in a leak proof container with a secure closure and placed in a Biohazard bag.
- The accompanying request form must clearly state that the specimen is from a "suspected or Probable MERS" patient.
- Specimens must be hand delivered to the laboratory. They Must not be placed in the Lampson tube/
- After delivering the specimens, the staff member must immediately remove and dispose of gloves and perform hand hygiene with alcohol hand rub
- Specimens are to be collected and transported by Medical or Nursing staff only.

11 Radiology Department

- Where possible the chest x-ray should be performed in the patient's room.
- If possible the patient should wear a mask.
- The radiographer must wear PPE available outside the room.
- Any items that are in contact with the patient must be cleaned with detergent and water, followed by wiping over with alcohol wipes. The equipment should be cleaned before leaving the ward or in the department after the child has left the room.

12 Surveillance of Healthcare Workers

- All breaches in Infection Control must be reported to Infection Prevention and Control.
- In the event that there is an unprotected exposure to a child with suspected MERS by a staff member or visitor.
    - **i.** Report the incident to your supervisor/
    - **ii.** Report to Work health and Safety
- Complete an IIMS notification to record any reports of exposure to MERS cases. Supervisor needs to notify the Infection Prevention and Control team or Infectious Disease Consultant on call after hours.

13 Education

All staff caring for suspected MERS patients should have attended a Local Induction to PPE Training

14 Fact Sheets

The hospital uses the Ministry of Health factsheets - http://www.health.nsw.gov.au/Infectious/factsheets/Documents/MERS-CoV-factsheet.pdf

Travel and MERS http://smartraveller.gov.au/

15 Reference

1. MERS Coronavirus (MERS_CoV) Update: http://www.health.nsw.gov.au/Infectious/alerts/Documents/MERS-CoV-Update-June-2015.pdf
2. http://www.who.int/emergencies/mers-cov/en/
3. http://www.health.gov.au/internet/main/publishing.nsf/Content/18EA5D58FA62A556CA257BF0001A8E1F/$File/interim-infection-prevention.pdf

APPENDIX 1: Isolation Information for Patient/Parent

MIDDLE EAST RESPIRATORY SYNDROME
MERS

Isolation Information

PATIENT / PARENT

- Child to be nursed in single room on Variety Club Ward or PICU
- Hands must be washed on entering and leaving the child's room wash hands with 2% Chlorhexidine hand wash. Dry your hands thoroughly and then use alcohol hand rub.
- Visitors should not enter the room.
- Parents and carers are permitted.
- Door to the room to remain closed whilst the child is in the room.
- Movement from the room is restricted to discharge or transfer within the hospital.
- The child cannot use the Starlight Room.
- The child cannot visit any of the dining areas within the hospital.
- The child cannot stay or visit Ronald McDonald House.
- The child cannot visit other inpatients.
- The child cannot attend the schoolroom.
- The child and family must use the bathroom in the room.
- If the child or family members have to leave the room they must wear the masks provided ie when being transferred between the Emergency Department and the ward.

Maybe need a note to say that an interpreter may be required

For further information please contact the Infection Prevention and Control Team, Pages 6131 or 6550 or Ext 52578 or the After Hours Nurse Manager on Duty, Page 6056.

APPENDIX 2: Triage Sign

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IDENTIFICATION OF SUSPECTED/PROBABLE CASES OF MIDDLE EAST RESPIRATORY SYNDROME (MERS) IN EMERGENCY BY TRIAGE REGISTERED NURSE

1. Does the patient have any respiratory type symptoms? (Eg. fever, cough or shortness of breath?)

2. Does the patient have other MERS – compatible symptoms such as vomiting, diarrhoea, or myalgia.

3. IN THE LAST 14 DAYS has the patient travelled to an area where local transmission of MERS is occurring?
   OR
   IN THE LAST 14 DAYS has the patients been in contact with a person who is a probable MERS case?

4. If the answers to these 3 questions are 'yes', then consider patient as possible MERS suspect and follow MERS procedures.

5. Request an ID consult to assist with patient Management.

6. Generate an Infectious Notification Form

NO NEBULISED MEDICATIONS ARE TO BE ADMINISTERED. SPACERS ARE TO BE USED FOR ASTHMATIC PATIENTS WITH SUSPECTED MERS

APPENDIX 3: ED Patient Sign

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ADVICE TO EMERGENCY PATIENTS

MIDDLE EAST RESPIRATORY SYNDROME (MERS)

Is it possible that you or your child may have MERS?

Have you or your children been in a MERS affected area in the last 14 days?

Have you or your children been in contact with someone who is suspected of having MERS?

Do not wait in the queue if you answered yes to any of these questions. Proceed immediately to the desk and ask for a mask.

APPENDIX 4: Visitor Sign

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ATTENTION ALL HOSPITAL VISITORS

Due to the recent outbreaks of Middle East Respiratory Syndrome (MERS) in overseas countries The Children's Hospital at Westmead requests that you *do not visit patients* in the hospital if:

- You are feeling unwell with a fever, cough of breathing difficulties

and

- You have recently returned from a MERS affected area

or

- You have been in close contact with a person who had been identified as possibly having MERS

IF YOU MEET THESE CRITERIA YOU SHOULD SEEK URGENT MEDICAL ADVICE