

Management of Middle East Respiratory Syndrome (MERS) in Clinics

Clinic management should take appropriate measures to ensure maximum protection of patients and staff.

1. Introduction

Causative agent

Coronaviruses are a large family of viruses which include viruses that may cause mild illness like common cold as well as severe illness like severe acute respiratory syndrome (SARS) in humans. There are 3 main subgroups of coronaviruses: alpha (α), beta (β) and gamma (γ). Middle East Respiratory Syndrome Coronavirus (MERS-CoV), formerly known as novel coronavirus (NCoV), is a beta coronavirus which has not been identified in humans before and is different from any coronaviruses (including SARS-coronavirus) that have been found in humans or animals.

Affected Areas

The affected areas of MERS include the Arabian Peninsula and its neighboring countries (including Bahrain, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Kingdom of Saudi Arabia, State of Palestine, Syria, United Arab Emirates, Qatar and Yemen). So far, over 95% of the confirmed cases were reported by Middle East countries. For the remaining cases, most of them either acquired the infection in the Middle East during travel or work, or through close contact with another patient who acquired the infection in Middle East. Moreover, there has been an outbreak of MERS in Korea since the end of May 2015 with transmissions mainly occurred in healthcare facilities. Please refer to website of Centre for Health Protection for affected areas update: http://www.chp.gov.hk/files/pdf/distribution_of_mers_cases_en.pdf

Coronaviruses are typically spread like other respiratory infections such as influenza. Based on the current information, MERS-CoV could be spread from person-to-person through close contact. Since April 2014, many cases appeared to be secondary cases which might have been infected from a confirmed patient. These secondary cases were mainly healthcare workers who had taken care of patients suffering from MERS. The majority of them presented with no or mild symptoms and had been infected within healthcare settings. Besides, recent studies support that camels serve as the primary source of MERS-CoV

2. Clinical features

Infected persons may present with acute serious respiratory illness with symptoms including fever, cough, shortness of breath and breathing difficulties. Most patients developed pneumonia. Many also had gastrointestinal symptoms or kidney failure. In people with immune deficiencies, the disease may have atypical presentation such as diarrhoea.

3. Reporting

MERS is a statutory notifiable disease in Hong Kong. Medical practitioners managing returning travelers from affected countries with compatible symptoms are advised to take into consideration the possibility of MERS. For the updated list of affected countries/areas, please refer to the following website: http://www.chp.gov.hk/files/pdf/distribution_of_mers_cases_en.pdf

Patient fulfilling the reporting criteria as stated in **Table 1** below should be isolated immediately and the attending medical practitioners should notify the Central Notification Office (CENO) of the Centre for Health Protection (CHP) via fax (2477 2770), phone (2477 2772) or CENO On-line (<http://ceno.chp.gov.hk>). The notification form could be obtained from the following website: <http://www.chp.gov.hk/en/notification/13/33.html>

4. Recommended management procedure in Clinic Settings

At Registration / Triage

- Identify any patients fulfilling the clinical and epidemiology criteria stated in the **Table 1**:
- For suspected MERS case, inform in-charge of the clinic immediately for assessment and action (please see the flow chart below for details)
- Isolate the suspected MERS case in a single room, adopt additional precautions as specified in point 5.1

Table 1: Case definition of MERS (updated as of 8th June 2015)

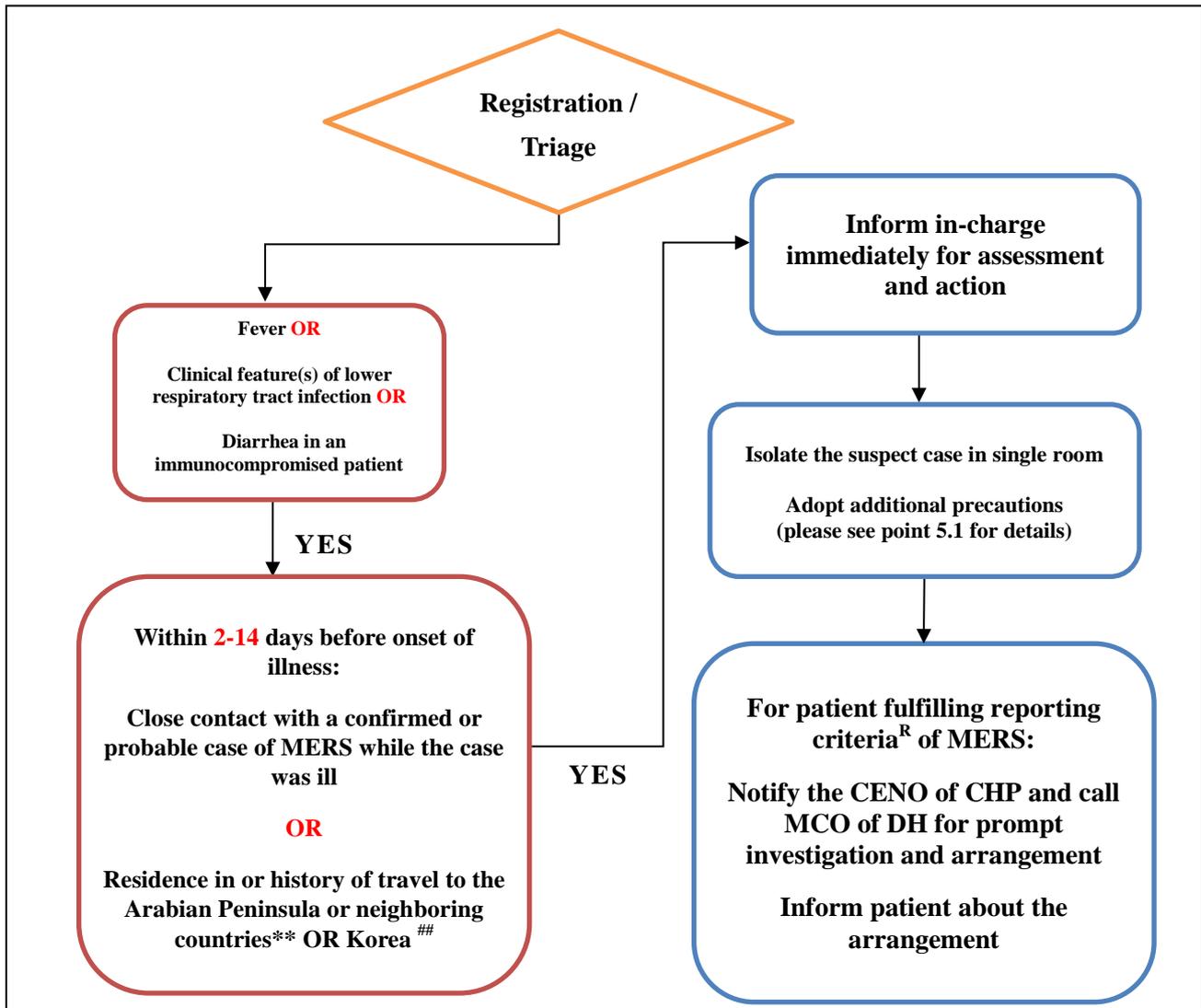
Clinical criteria:		Epidemiology criteria
A person with fever not explained by any other aetiology; OR A person with clinical feature(s) of lower respiratory tract infection not explained by any other aetiology; OR An immunocompromised patient with diarrhea not explained by any other aetiology	AND	One or more of the followings within 2-14 days before onset of illness <ul style="list-style-type: none"> ● Close contact* with a confirmed or probable case of Middle East Respiratory Syndrome while the case was ill OR <ul style="list-style-type: none"> ● Residence in or history of travel to the Arabian Peninsula or neighboring countries** OR Korea
* Close contact is defined as: <ul style="list-style-type: none"> ● Anyone who provided care for the patient, including a health care worker or family member, or who had other similarly close physical contact; ● Anyone who stayed at the same place (e.g. lived with, visited) as a probable or confirmed case 		

while the case was ill.
**i.e., Bahrain, Iran, Iraq, Israel, Jordan, Kingdom of Saudi Arabia, Kuwait, Lebanon, Oman, Qatar, State of Palestine, Syria, United Arab Emirates, and Yemen.
Confirmed case: A person with a positive viral culture for MERS Coronavirus (MERS-CoV) or positive molecular testing for MERS-CoV
The number of cases of MERS in affected areas (Middle East and Korea is regularly updated and is available on the CHP website: http://www.chp.gov.hk/files/pdf/distribution_of_mers_cases_en.pdf

(For details, please see the CENO website: <https://ceno.chp.gov.hk/casedef/casedef.pdf>)

Work flow when encountering a suspected MERS cases

- All healthcare workers must wear appropriate PPE as specified in **Table 2** when entering the room
- Notify the Central Notification Office (CENO) of CHP and call Medical Control Officer (MCO) of DH for prompt investigation and arrangement



** i.e., Bahrain, Iran, Iraq, Israel, Jordan, Kingdom of Saudi Arabia, Kuwait, Lebanon, Oman, Qatar, State of

Palestine, Syria, United Arab Emirates, and Yemen

For the updated list of affected countries/areas, please refer to the following website: http://www.chp.gov.hk/files/pdf/distribution_of_mers_cases_en.pdf

R Details of the reporting criteria, please see **Table 1**

5. Managing a patient fulfilling reporting criteria of MERS who is in the clinic and pending transferal.

Ensure that the patient has put on a surgical mask;

- Patient should be isolated and cared in a single room;
- Staff attending the patient should wear appropriate PPE (Please see **Table 2** below);
- Notify the CENO of CHP and call MCO of DH for prompt investigation and arrangement (see **point 3** and **4**);
- Inform patient about the arrangement;
- Keep a record and contact telephone numbers of patients/accompany persons/health care workers who share the waiting area with the affected patient; and
- Carry out thorough disinfection of potentially contaminated area in the clinic before seeing next patient. For the details of the use of bleach, please refer to the following website: http://www.chp.gov.hk/files/pdf/the_use_of_bleach.pdf

Table 2: PPE recommendation in health care setting (out-patient)

gs PPE	Settin	OPD registration counter Private clinic Ambulatory care setting	When patient reports positive Clinical criteria and Epidemiology criteria
Cap	/	/	Yes (optional)
Face or eye protection	/	/	Face shield /goggles
Respiratory protection	/	Surgical mask	N95 respirator
Gown	/	/	Yes
Gloves	/	/	Yes (latex gloves)

Centre for Health Protection

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(Last updated on 16 June 2015)