

# Management of asymptomatic persons who are RT-PCR positive for Middle East respiratory syndrome coronavirus (MERS-CoV)

## Interim guidance

3 January 2018

WHO/MERS/IPC/15.2 Rev.1



## Introduction

The clinical spectrum of Middle East respiratory syndrome coronavirus (MERS-CoV) infection ranges from asymptomatic infection to severe pneumonia with acute respiratory distress syndrome (ARDS) and other life-threatening complications. Mild symptoms are non-specific and can include headache, tiredness, feverishness, mild cough, sore throat, and runny nose. Some patients may present with gastrointestinal symptoms such as mild diarrhoea.

## 1. Identification of asymptomatic RT-PCR positive persons

Since 2012, approximately 21% of laboratory confirmed MERS-CoV cases<sup>1</sup> have been classified as asymptomatic or having mild disease at the time of testing. These RT-PCR positive persons with mild or no symptoms are usually identified when conducting laboratory screening tests as part of active case monitoring<sup>2</sup> or contact investigations<sup>3</sup>. However, sometimes it is difficult to classify a case as 'asymptomatic' because although the person may not have any symptoms at the time of testing, he or she may develop illness during the course of infection.

The potential for transmission from asymptomatic RT-PCR positive persons is currently unknown. One study found that within two weeks of a first positive test, 30% of asymptomatic or mildly symptomatic persons (n=13) that had been in contact with a case remained positive for viral RNA in the upper respiratory tract<sup>4</sup>. Another study reported prolonged nasal virus RNA detection (more than 5 weeks) from one asymptomatic RT-PCR positive health-care worker<sup>5</sup>.

If feasible and as a cautious approach during outbreaks in health care settings, WHO recommends that all close contacts of confirmed cases of MERS-CoV infection<sup>6</sup>, especially health care workers and other inpatient hospital contacts (e.g. non-health-care workers, patients and visitors), be tested for MERS-CoV regardless of the presence of symptoms.

This practice may lead to the identification of asymptomatic RT-PCR positive persons. The absence of symptoms should be confirmed independently in order to ensure appropriate management. Advice on the management of MERS-CoV patients with mild symptoms is described separately<sup>6</sup>.

Some persons with initial mild symptoms have developed severe lower respiratory tract illness (severe pneumonia, respiratory failure) or renal failure. Careful clinical

monitoring is warranted for development or progression of symptoms.

## 2. Isolation and follow up of asymptomatic RT-PCR positive persons

Until more is known, asymptomatic RT-PCR positive persons should be isolated, followed up daily for development of any symptoms and tested at least weekly – or earlier, if symptoms develop – for MERS-CoV.

The place of isolation (hospital or home) shall depend on the health-care system's isolation bed capacity, its capacity to monitor asymptomatic RT-PCR positive persons daily outside a health-care setting, and the conditions of the household and its occupants<sup>8</sup>.

The decision on where to isolate asymptomatic RT-PCR positive persons should be based on careful clinical judgment. The decision should be informed by:

- patient risk factors for the development of severe MERS-CoV illness, including the presence of co-morbidities;
- social and environmental conditions of the person's household<sup>1</sup> such as basic hygiene procedures, and the ability to comply with restrictions like staying away from work and social settings (e.g. shopping, school attendance); and
- presence of household members with co-morbidities associated with increased risk of severe MERS-CoV infection.

Isolation should continue until two consecutive upper respiratory tract samples (e.g. nasopharyngeal [NP] and/or oropharyngeal [OP] swabs) taken at least 24 hours apart test negative on RT-PCR.

At least daily monitoring of symptoms by a designated health-care provider, such as fever, any respiratory symptom such as sore throat, cough, shortness of breath or chest pain. Extra-pulmonary symptoms can also develop such as gastrointestinal symptoms (nausea, vomiting, diarrhoea), fatigue, myalgias and alteration of sensorium. Fever may not be present in some patients, such as the very old or the immunosuppressed

### 2.1. Hospital isolation of asymptomatic RT-PCR positive persons

Hospital isolation of asymptomatic RT-PCR positive persons involves applying standard precautions, spatial separation from others and prompt identification of symptoms.

## 2.2. Home isolation of asymptomatic RT-PCR positive persons

When providing home isolation of asymptomatic RT-PCR positive persons, the person and family should be provided with clear instructions on:

- adequate physical separation from potential household or social contacts, especially those with risk conditions for severe MERS-CoV illness (e.g. separate room and toilet);
- having food in the room and avoid sharing food or being in the same room with others as much as possible;
- avoidance of visitors and travel;
- basic hygiene procedures including frequent hand hygiene with soap and water or with alcohol-based hand rubs;
- covering nose and mouth with tissues when coughing or sneezing – assuming such symptoms are unique episodes and not persistent symptoms, in which case the person is considered symptomatic;
- at least daily monitoring of symptoms by a designated health-care provider, such as fever, any respiratory symptom such as sore throat, cough, shortness of breath or chest pain. Extra-pulmonary symptoms can also be develop such as gastrointestinal (nausea, vomiting, diarrhoea), fatigue, myalgias and alteration of sensorium. Fever may not be present in some patients, such as the very old or the immunosuppressed;<sup>9, 10</sup>
- information on when and how to immediately report if symptoms appear; and
- routine cleaning and disinfection of key areas and items, as described separately.<sup>7</sup>

Clear and specific instructions are needed for avoiding direct contact with groups in the household at greatest risk of severe disease such as older adults, pregnant women, children, and those at any age who are immunocompromised or have co-morbid conditions.

## 3. Asymptomatic RT-PCR positive health care workers – isolation and follow up

As noted above, the potential for transmission from asymptomatic RT-PCR positive individuals is still unknown. Therefore, asymptomatic health-care workers who are RT-PCR positive for MERS-CoV should be isolated and should not return to work until two consecutive upper respiratory tract samples (i.e. NP and/or OP swabs) taken at least 24 hours apart test negative on RT-PCR. Tests should be conducted at least weekly until a first negative test and then every 24-48 hours, so as to reduce isolation time for health-care workers.

As with any asymptomatic RT-PCR positive person, health-care workers should be monitored daily for symptoms. If health-care workers subsequently develop symptoms, they should be managed according to guidance for symptomatic persons<sup>11</sup>.

However, in the unlikely event that there are a significant number of asymptomatic RT-PCR positive health-care workers, and in order to keep the health-care system functioning for all patients during an outbreak, some countries may not be able to keep asymptomatic RT-PCR

positive health-care workers away from work until two consecutive RT-PCR tests taken at least 24 hours apart become negative.

If asymptomatic health-care workers who are RT-PCR positive for MERS-CoV are allowed to work, it is recommended that the following conditions are met:

- Health-care facilities ensure that the core components of infection prevention and control programmes, including technical guidelines such as isolation precautions are fully implemented.
- The asymptomatic health-care workers avoid caring for patients who are at high risk of developing severe MERS-CoV such as neonates, the elderly, pregnant women, immunocompromised patients, and patients in Intensive Care Units.
- The asymptomatic health-care workers are supported and monitored to comply with a) performing frequent hand hygiene, b) using a medical/surgical mask when in close contact with others (e.g. periods when there is a likelihood of being <1m from others, including patients), c) testing at least weekly while still positive, and more frequently thereafter until a second test at least 24 hours apart becomes negative, and d) daily monitoring of symptoms.

## Acknowledgements

Eeva Broberg, European Centre for Disease Prevention and Control (ECDC); Jeffery Cutter, Ministry of Health, Singapore; Katherine Defalco, Public Health Agency of Canada, Ottawa, Canada; Robert Fowler, University of Toronto, Canada; Susan I. Gerber, Centers for Disease Control and Prevention, Atlanta, GA, USA; Jeffrey Hageman, Centers for Disease Control and Prevention, Atlanta, GA, USA; Frederick G. Hayden, University of Virginia School of Medicine, Charlottesville, Virginia, USA; M Mushtuq Husain, Institute of Epidemiology, Disease Control & Research (IEDCR), Dhaka, Bangladesh; David T. Kuhar, Centers for Disease Control and Prevention, Atlanta, GA, USA; Yee-Sin Leo, Institute of Infectious Diseases and Epidemiology, Tan Tock Seng Hospital, Singapore; Allison McGeer, Mount Sinai Hospital, Toronto, Canada; Shaheen Mehtar, Stellenbosch University, Tygerberg, South Africa and Chair, Infection Control Africa Network; Dominique Monnet, European Centre for Disease Prevention and Control (ECDC); Babacar Ndoeye, Board Member, Infection Control Africa Network, Dakar, Senegal; Folasade T Ogunsola, University of Lagos, Nigeria and Secretary, Infection Control Africa Network; Fernando Otaiza O'Ryan, Ministry of Health, Santiago, Chile; Maria Clara Padoveze, University of São Paulo, Brazil; Pasi Penttinen, European Centre for Disease Prevention and Control (ECDC); Trish Perl, Johns Hopkins University, Baltimore, MD, USA; Diamantis Plachouras, European Centre for Disease Prevention and Control (ECDC); Nandini Shetty, Health Protection Agency, United Kingdom; and Peter Ben Embarek, Ana Paula Coutinho, Saskia Den Boon, Amgad Elkholy, Janet Diaz, Sergey Eremin, Qiu Yi Khut, Mamun Malik, Elizabeth Mathai, Satoko Otsu, Dina Pfeifer, Ron St. John, Valeska Stempliuk, Constanza Vallenias, Maria Van Kerkhove and Jane Wallace from the World Health Organization (Headquarters and Regional Offices).

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**Suggested citation.** Management of asymptomatic persons who are RT-PCR positive for MERS-CoV: Interim guidance. Geneva, Switzerland: World Health Organization; 2018. Licence: CC BY-NC-SA 3.0 IGO.

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