

WHO-EM/CSR/063/E

Report on the

Intercountry meeting on the Middle East Respiratory Syndrome Coronavirus (MERS-CoV) outbreak in the Eastern Mediterranean Region

Cairo, Egypt
20–22 June 2013



World Health
Organization

Regional Office for the Eastern Mediterranean

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CONTENTS

1.	INTRODUCTION	1
2.	OVERVIEW AND UPDATE ON THE OUTBREAK.....	2
3.	COUNTRY UPDATES	4
3.1	Saudi Arabia	4
2.2	Jordan.....	6
2.3	France	6
3.4	Tunisia	7
3.5	Qatar	7
3.6	Germany	8
3.7	Discussion.....	8
4.	TECHNICAL GUIDANCE ON SURVEILLANCE: CURRENT APPROACH AND PRACTICE.....	9
4.1	WHO interim recommendations.....	9
4.2	Influenza-like illness/severe acute respiratory infection surveillance guidance.....	10
4.3	Case investigation.....	12
4.4	Surveillance at the human–animal interface.....	13
5.	OUTBREAK AND PREPAREDNESS FOR MASS GATHERINGS.....	14
6.	TECHNICAL SUPPORT AND INTERIM GUIDANCE FOR MANAGEMENT OF CASES	15
6.1	Case management and WHO guidance	16
6.2	The experience of the United Kingdom	17
6.3	Discussion.....	19
7.	TECHNICAL GUIDANCE AND SUPPORT FOR LABORATORY DIAGNOSTICS	21
7.1	Development of laboratory diagnostics.....	21
7.2	Overview of laboratory testing	21
7.3	Shipping and transport of specimens.....	22
7.4	Discussion.....	23
8.	GUIDANCE ON INFECTION PREVENTION AND CONTROL	24
8.1	WHO interim guidance.....	24
8.2	Experience of the United Kingdom	24
8.3	Experience of Saudi Arabia	25
8.4	Discussion.....	26
9.	THE ROLES OF MEDIA AND RISK COMMUNICATION	26
10.	MINISTERIAL MEETING	28
10.1	Overview of MERS-CoV	28
10.2	Implementation of the International Health Regulations.....	29

10.3 Discussion	29
11. RECOMMENDATIONS	30
12. CLOSING	34
Annexes	
1. PROGRAMME	35
2. LIST OF PARTICIPANTS	37

1. INTRODUCTION

The emergence of a novel coronavirus, now named the Middle East Respiratory Syndrome Coronavirus (MERS-CoV), in 2012 aroused global concern. By 30 May 2013, 50 cases had been identified, with 30 of them being fatal, and the disease which was first identified in Jordan in April 2012, in Saudi Arabia and Qatar in September, and in the United Arab Emirates later the same year had spread to Europe.

About 75% of the cases of MERS-CoV are elderly men and the most severe illness occurred in people with existing chronic health conditions. Most patients required intensive care including mechanical ventilation. There are no specific treatments or vaccines for the disease. WHO is coordinating the global response to this emerging virus through the International Health Regulations.

In response to the outbreak of this new virus, the WHO Regional Office for the Eastern Mediterranean organized an intercountry meeting to brief Member States of the Region and to discuss future actions. The specific objectives of the meeting were as follows:

- To update the Member States of the Eastern Mediterranean Region on the current outbreak of novel coronavirus infection;
- To find out the current level of public health preparedness measures of Member States in response to the outbreak of MERS-CoV;
- To share and orient Member States on the currently available scientific information on MERS-CoV in the areas of:
 - surveillance
 - case management
 - laboratory diagnostics
 - infection prevention and control
 - International Health Regulations; and
- To discuss practical steps for strengthening surveillance in Member States.

The programme is contained in Annex 1.

The intercountry meeting took place at the WHO Regional Office in Cairo, Egypt, on 20–22 June 2013, and concluded on the final day with a briefing for ministers of health and their representatives. More than 100 health officials and disease research specialists attended the intercountry meeting. The list of participants by country is attached as Annex 2. The meeting was chaired by Dr Ala Alwan (WHO Regional Director), Dr Ziad Memish (Saudi Arabia) and Dr Mahmoud Mohamed Fikri (United Arab Emirates).

The meeting was opened on 20 June 2013 by Dr Ala Alwan, WHO Regional Director for the Eastern Mediterranean, who referred to the meeting as a “reality check” in addressing the threat posed by MERS-CoV to public health. Reminding participants that a technical consultative meeting on this novel coronavirus had already been organized by the Regional Office in January 2013, Dr Alwan stressed the need to translate the knowledge accumulated so far on the virus into concrete action points that could be implemented in countries.

Since any outbreak today can be a problem for the world tomorrow, cooperation between countries and international health bodies was vital, Dr Alwan said. He urged countries to enhance their surveillance of severe acute respiratory infections (SARIs) and reminded them of the value of the International Health Regulations (IHR) for rapid and meaningful information-sharing between WHO and States Parties. Timely intervention was important to curb the threat of infection, he added, so countries must be prepared to share information rapidly.

Dr Keiji Fukuda, Assistant Director-General of WHO, added his welcome to that of Dr Alwan. Although the infection originated in the Eastern Mediterranean Region, the threat was global and many countries worldwide have expressed concern, Dr Fukuda said. MERS-CoV had already been discussed by the World Health Assembly in May 2013 and the need for more information on the virus and the disease it causes was urgent. It was important to let people know what we were doing so that they were informed, Dr Fukuda added.

Dr Jaouad Mahjour, Director of the Department of Communicable Disease Prevention and Control at the WHO Regional Office for the Eastern Mediterranean, then reminded participants of the objectives of the meeting and outlined the topics that would be addressed in each session.

2. OVERVIEW AND UPDATE ON THE OUTBREAK

Dr Anthony Mounts of WHO headquarters gave a brief overview of the epidemiology of MERS-CoV, presenting the latest information as of 20 June. Thus he reported 64 laboratory-confirmed cases, of which 60% had died. Most cases are among males and most are also among the elderly, but a few younger cases have also been identified. Most infected persons have had respiratory infections, some have also had pneumonia, and some had other viruses and pathogens at the same time as MERS-CoV.

The number of cases has increased in recent months, possibly due to growing interest and therefore more testing to identify cases. The virus is centred on the Arabian peninsula, and there have been some cases reported in Europe among travellers. However, there have so far been no cases reported from the east – from places like Indonesia and Philippines – and that is a concern since many persons from such countries live in the Gulf Cooperation Council states. This absence of reports is likely to be due to a lack of surveillance, Dr Mounts suggested.

Then he described a case of a Kuwaiti man who had lived in Italy for 20 years. After a 40-day vacation with relatives in Jordan he returned to Italy and, although symptomatic, he went to work. He had severe respiratory problems and was hospitalized. However, in addition to four symptomatic contacts in Amman, he had apparently infected two other persons in Italy – a 14-month-old niece and a colleague at work who both had minor symptoms. The Italian experience suggests incubation within 3–4 days, while research in Jordan suggests 1–13 days. A case in the United Kingdom suggested the incubation period might be between 1–9 days, while in France when a traveller infected someone in a hospital the incubation period was 9–12 days.

Dr Mounts stressed that different specimens taken from same person on different days may show differing results. Nasopharyngeal swabs are not very effective, and in a number of cases such swabs showed negative for MERS-CoV while other samples were positive. He emphasized that, while specimens from both the upper and lower respiratory tract have value, specimens from the lower tract are more sensitive to MERS-CoV infection.

The discussions of the scientific meeting that took place in the Regional Office on 19 June were then summarized. The meeting found that polymerase chain reaction (PCR) assays work well for virus detection, that samples from the lower respiratory tract are most sensitive to the virus, that low titres of infection may be found in the urine, blood and stools, and that the best approach in suspect cases is to systematically sample from multiple sites. Dr Mounts noted that serology assays have been developed and, though the need for further validation remains, they have already been used to great effectiveness in the field. Some researchers have advised using two or more of the methods. To further standardize the various assays, sera are needed from persons who have been infected with the virus but are recovering.

The scientific meeting noted that transmission of MERS-CoV among contacts was limited. The typical pattern so far has been a severe case with a number of associated milder cases, but the existence of milder forms of the disease raises the question of whether some cases are being missed. The estimated number of cases, based on the number of infected travellers would suggest the possibility of over 1000 infected persons so far.

At this point it is unclear whether the pattern of disease is due to unrecognized transmission persisting in humans or an unrecognized animal reservoir with sporadic introductions. There may well be transmission via one or more intermediaries. More investigations are needed of the genetic profiles of animals. In addition, it is important to find out from index cases where they have been, what they have been doing, who they have been in contact with, what they ate, what kind of an environment they were in, and whether they had contact with animals.

In terms of developing drugs for treating MERS-CoV, the focus is on repurposing currently licensed drugs (e.g. interferons, cyclosporine, ribavirin). Two possible vaccine targets under development are the spike and nucleocapsid. It was noted, however, that the lack of an animal model is a major challenge for drug and vaccine development since the

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