Between 4 and 9 June 2013, a joint mission of the Kingdom of **Saudi Arabia** (KSA) and the World Health Organization (WHO) met in Riyadh to assess the situation due to a **new coronavirus** in the Kingdom. This virus has recently been named the Middle East **respiratory syndrome coronavirus (MERS-CoV)**. It is a new, emerging virus that is distantly related to the virus that caused **SARS**.

The first documented cases of MERS occurred in Jordan in early 2012. Globally, to date there has been a total of 55 cases confirmed by laboratory testing. Of these, 40 have occurred in KSA, and the rest have been reported from other countries in the Middle East (Qatar and the United Arab Emirates), from Tunisia in North Africa, and from France, Germany, Italy and the United Kingdom of Great Britain and Northern Ireland in Europe.

The overall number of cases is limited, but the virus causes death in about 60% of patients. So far, about 75% of the cases in KSA have been in men and most have occurred in people with one or more major chronic conditions.

There appears to be three main epidemiological patterns.

In the first pattern, sporadic cases occur in communities. At present, we do not know the source or how these people became infected.

In the second pattern, clusters of infections occur in families. In most of these clusters, there appears to be person-to-person transmission, but it seems that this transmission is limited to people who are in close contact with a sick family member.

The third pattern comprises clusters of infections in health care facilities. Such events have been reported in France, Jordan and KSA. In these clusters, the sequence seems to be that an infected person is admitted to hospital where that person then transmits the virus to other

people in the health care facility.

Two important points need to be stressed.

First, there is no evidence of widespread person-to-person transmission of MERS-CoV. Where it has been suspected that the virus has been transmitted from person to person, it appears that there had been close contact between somebody who was sick and another person: a family member, a fellow patient or a health care worker.

Secondly, many fewer infections with MERS-CoV have been reported in health care workers in KSA than might have been expected on the basis of the previous experience of SARS. During the SARS epidemic, health care workers were at high risk of infection. The MERS-CoV is different from the SARS virus. Although the reason why fewer health care workers have been infected with MERS-CoV is not clear, it could be that improvements in infection control that were made after the outbreak of SARS have made a significant difference. In this context, infection control measures in KSA appear to be effective.

Currently, the diagnosis of MERS CoV relies heavily on clinical awareness combined with confirmatory testing for the presence of MERS-CoV by the polymerase chain reaction. No bedside test exists.

Treatment is primarily supportive and there are no convincing data that the use of potent antiviral agents, such as ribavirin and interferon, brings any benefit. The use of steroids in high doses should be avoided.

The joint mission reviewed the response in KSA, and concluded that the country has done an excellent job in investigating and controlling the outbreaks. Once the first cases were identified in 2012, several steps were taken, including the following:

Measures, including infection control measures, were introduced to stop hospital outbreaks

surveillance for MERS CoV cases was significantly increased

awareness campaigns to alert and educate the public were started

cases of MERS CoV were reported to WHO

epidemiological investigations were initiated to identify the sources of infection, risk factors and routes of transmission

international experts were invited to help.

At this point, the right prevention and control measures have been applied, and the KSA Government is to be congratulated for urgently taking crucial actions.

Some final points must be stressed.

First, large gaps in our knowledge about this virus remain. Although extensive work has been done and is ongoing, it should be remembered that it often takes time for scientific investigations to produce results.

Secondly, international concern about these infections is high, because it is possible for this virus to move around the world. There have been now several examples where the virus has moved from one country to another through travellers.

Consequently, all countries in the world need to ensure that their health care workers are aware of the virus and the disease it can cause and that when unexplained cases of pneumonia are identified, MERS CoV should be considered. If cases of MERS CoV are found, they should be reported to WHO under the terms of the International Health Regulations

(2005).

So far, all cases of community acquired MERS CoV infection have been seen in the countries of the Middle East. All countries in this region should urgently intensify their surveillance efforts for infection by MERS-CoV.