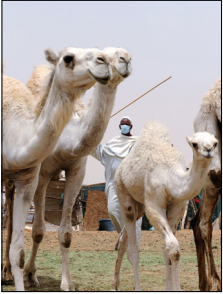


Research needed to prevent MERS coronavirus outbreaks

After a recent outbreak of MERS coronavirus was contained in Saudi Arabia, WHO calls for more research for a better control of the disease. Sharmila Devi reports.



An outbreak of the Middle East respiratory syndrome coronavirus (MERS-CoV) in a hospital in Saudi Arabia that began at the end of February and affected ten people has been contained, with all patients recovered or in recovery, WHO said. Since MERS-CoV was first identified in Saudi Arabia in 2012, there have been at least 690 deaths and 1935 cases confirmed.

MERS-CoV is thought to be carried by camels and spread by droplet infection of the airways. It kills about 36% of those infected. No vaccine exists for MERS-CoV, but vaccine studies in camels are being conducted, including at the UK's Jenner Institute.

In the past, WHO has criticised Riyadh for allowing infections to spread in hospitals where most of the known human-to-human transmission has occurred. Stringent precautions and hygiene protocols are required to prevent the disease's spread. Failure to spot MERS-CoV in a patient in a vascular surgery ward in Saudi Arabia last year led to more than 49 other people being exposed. Several patients infected with MERS-CoV contracted it in the Middle East before travelling to other countries. It takes days for symptoms to develop, so their infection was only discovered in their destination country. In mid-2015, an outbreak in South Korea started by a man who had travelled in the Gulf caused 186 cases within 2 months. Cases similar to this were to be expected.

Saudi officials contacted by *The Lancet* for comment did not respond but Maria Van Kerkhove, WHO's technical lead for MERS-CoV, said the kingdom had made much progress in the past 2 years. She expected to see further improvement in the "early identification of hospital

clusters and in the prevention of zoonotic transmission" across the entire country and medical system.

There had been a reduction in sharp peaks of cases, but "we know they are caused by delayed identification and isolation of the initial patient and suboptimal infection prevention and control measures", she said. "What we hope for is that initial patients entering health-care facilities are suspected and isolated earlier. Some hospitals in Saudi Arabia, for example, have physically modified emergency departments where patients with respiratory symptoms have separate waiting rooms, treatment facilities, and patient rooms for non-respiratory patients."

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Saudi Arabia is one of the wealthier countries in the region and there is more concern about countries with fewer resources and less resilience to tackle the disease. "We expect more cases to be identified in the Middle East and every one of these cases has the potential to start an outbreak in the country where they are identified or, if they travel to another country, anywhere else in the world", Van Kerkhove told *The Lancet*. "MERS-CoV is widespread in dromedary camels in the Middle East, large parts of Africa and possibly into South Asia where dromedaries are present", she said. "This entire region presents an opportunity for spillover events, that is, where humans can become infected from contact with infected camels."

Qatar has now reported 19 cases of MERS-CoV. This was the first outbreak since June, 2016. WHO investigators were still trying to determine how a man became exposed to the virus, the agency said in a statement on April 4. An investigation revealed the patient had not travelled outside of Qatar in the past 7 months and had no contact with camels or people infected with MERS-CoV.

Further outbreaks were likely in the absence of better regional surveillance and scientific research, said WHO. "The global community has been slow to implement fundamental research studies and while collaborative research has greatly improved in the last 2 years, we still lack answers to address key unknowns about this virus", said Van Kerkhove.

WHO has recommended that until more is understood about MERS-CoV, people at high risk of developing severe disease should take precautions when visiting farms or markets where dromedary camels are present. This includes people who are older, have diabetes, renal failure, chronic lung disease, or are immunocompromised. Precautions include avoiding contact with camels, not drinking raw camel milk, and not eating camel meat that has not been thoroughly cooked.

"One of the major challenges in identifying MERS-CoV patients quickly is that signs and symptoms of MERS-CoV are non-specific—they are similar to other respiratory diseases and early disease can be mild", said Van Kerkhove. "What we aim to accomplish with surveillance and training is to reduce the time to isolate suspected MERS-CoV patients and to improve standard infection prevention and control measures in hospitals."

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