

THIS WEEK



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Present danger

There is much hype about predicting and preventing future pandemics, but not enough is being done about a threat sitting under our noses.

If the deadly disease MERS-CoV evolves to spread easily between humans and cause a global outbreak, hard questions will be asked. Why did health authorities and scientists allow a virus with clear pandemic potential to fester for so long, and what more could have been done to nip it in the bud? Those questions need to be asked now, when there is still time to deal with the crisis.

As of 16 June, the World Health Organization (WHO) had reported 701 lab-confirmed cases of MERS-CoV (Middle East respiratory syndrome coronavirus), including 249 deaths, since the virus was first identified in September 2012. The reported cases are largely confined to the Middle East, with most in Saudi Arabia.

MERS-CoV is, in principle, eminently stoppable. It remains an animal-borne virus that sporadically infects humans: there have been large hospital outbreaks in which patients have infected health-care workers and others, but so far the virus does not spread easily between people. By tracking down its animal sources and the routes through which people contract it, authorities should be able to dam the stream of infections.

But there is a risk that MERS-CoV, like the coronavirus SARS (severe acute respiratory syndrome), might mutate to spread easily between humans and so propagate rapidly around the world. SARS was detected in late 2002 and stamped out in July 2003; in those few months, it caused more than 8,000 infections and 700 deaths. Key to the defeat of SARS was a tightly coordinated international public-health effort, led by the WHO. The organization assembled an effective in-house outbreak-response team and quickly put together an international network of scientists that for the most part set competition aside in favour of collaboration.

Partly as a result of SARS, in 2005 the WHO's member states agreed on legally binding International Health Regulations to strengthen the international response to public-health events that occur in individual countries but potentially pose a global threat. The rules, for example, require countries to strengthen their disease surveillance and outbreak-response infrastructure, and to report all cases of possible international concern to the WHO within 24 hours.

TRY HARDER

When it comes to MERS-CoV, the lessons of SARS success have too often been ignored. This is perhaps due in part to a mistaken perception that MERS-CoV is less urgent than was SARS, because it does not yet spread easily between people. Research groups have tended to compete rather than cooperate. From the outset, conflict and distrust over credit, patents and sharing of specimens and data have marred efforts. (see *Nature* <http://doi.org/s75>; 2013).

Saudi Arabia's response to MERS-CoV has been better than many of its critics give it credit for. Tackling the outbreak is challenging: with only a few hundred cases to go on, tracking down clues to the source of infections is not easy in a country that is almost three and a half times the size of France. But even so, response efforts have suffered from

ineptitude, infighting and inadequate transparency. Saudi Arabia may be rich, but it is on a steep learning curve when it comes to international research collaboration and dealing with a complicated outbreak.

In April, Saudi Arabia replaced its health minister as case numbers surged, and last month it created a Command and Control Center that brings together scientists and public-health officials to better coordinate control efforts, and acts as a focal point for international collaboration.

“Diplomacy and trust are key to building an effective outbreak response.”

This month, it removed deputy health minister Ziad Memish — the most prominent public face of Saudi MERS-CoV efforts — and announced 113 cases and 92 deaths that had occurred since 2012 but had gone unreported (these cases are not included in the WHO's latest totals). It is too soon to say how effective the Command and Control Center will be, but

domestic pressure to stop MERS-CoV is at an all-time high.

The WHO has been much less prominent and decisive on MERS-CoV than it was on SARS. Its outbreak-response division is underfunded and understaffed, and effective leadership has been lacking.

On the positive side, researchers have obtained a lead, finding the virus in camels in Saudi Arabia, Egypt, Oman and Qatar. Antibodies to the pathogen — evidence of past infection — have been detected in camels in many countries in the Middle East and North Africa. Last week, researchers reported finding the virus in unpasteurized camel milk. But almost two years after MERS-CoV was first identified, no one has definitively pinned down its routes of transmission to humans. Scientists and authorities could, and should, do better.

The many cases caused by hospital outbreaks, for instance, could have been prevented by rigorous infection-control measures. Rapid identification and isolation of cases, decontamination of surfaces and use of protective clothing such as masks can all help to block infection of people in contact with patients.

Outbreak response cannot always be decreed by international rules. There is tension between the sovereign right of nations to handle the situation in their own countries and the desire of the international community to intervene and prevent the disease crossing borders. Diplomacy and trust are key to building an effective outbreak response. Saudi Arabia needs to be encouraged, not alienated.

The International Health Regulations say little about research, but a separate WHO agreement sets out clear rules for sharing samples and sequences of pandemic influenza viruses. Similar rules for all infectious diseases that have pandemic potential are needed.

What is most lacking in the fight against MERS-CoV is global leadership. The WHO, as an intergovernmental agency with a direct line to health ministries, remains best placed to bang heads together and get things done cooperatively, but its efforts must be well funded and staffed. Politicians everywhere must wake up to the fact that the world has another Middle East problem. ■