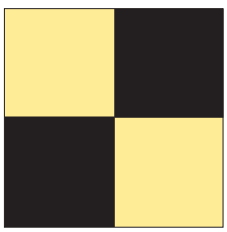
Challenges of coronavirus disease 2019



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Yet again, the world is experiencing a global viral epidemic of zoonotic origin. As of Feb 12, 45 204 confirmed cases of coronavirus disease 2019 (COVID-19) and 1116 deaths had been reported in 25 countries. The majority of cases and, at the time of writing, all but one death have been in China, despite efforts in the country to halt transmission through shutting down transport, quarantining entire cities, and enforcing the use of face masks. International flights have been cancelled and affected cruise ships quarantined. At this stage, it is unclear whether the severe acute respiratory syndrome coronavirus (SARS-CoV)-2 outbreak will run its course, as SARS-CoV did in 2003, or will become an endemic cause of viral pneumonia.

In our January issue we announced the formation of *The Lancet Infectious Diseases* Commission on Preparedness for Emerging Epidemic Threats. The Commission will revisit global preparedness planning and assumptions underlying agreements such as the International Health Regulations. It aims to account for new challenges in preparing for and responding to infectious disease outbreaks. These challenges, which are political and institutional, social, environmental, technological, and pathogen-related, are being brought to the foreground by the SARS-CoV-2 outbreak.

One issue is how prepared the world's health systems are to respond to an outbreak of this scale. It's clear the large number of cases of COVID-19 is testing the health system in China. Yet, China was able to build a hospital for affected patients in a matter of days. No other country could mobilise resources and manpower at such speed. While health systems in high-income countries would be stretched by the outbreak, the most devastating effects would be in countries with weak health systems, ongoing conflicts, or existing infectious disease epidemics. In these countries, it is imperative to rapidly detect and contain the virus at points of entry to prevent community transmission and health systems from being overwhelmed. Health authorities in Africa are on high alert for the virus, given the continent's extensive trade and transport links with Asia. The capacity in Africa to screen, isolate, and treat patients and perform contact tracing is being built under the leadership of the Africa Centres for Disease Control and Prevention and WHO.

As in all outbreaks, there is an urgent need to develop effective diagnostics, therapeutics, and vaccines. Several experimental diagnostic platforms are already in use in China and elsewhere. The whole-genome sequence of SARS-CoV-2 had been obtained and shared widely by mid-January, a feat not possible at such speed in previous infectious disease outbreaks. This sequence will allow fine-tuning of existing technologies and development of better diagnostics and targeted therapeutics. Several potential treatments have been proposed, including a Janus kinase inibitor known as baricitinib. However, no antiviral treatment has been approved for coronaviruses, and despite two outbreaks of novel coronaviruses in the past two decades, vaccine development is still in its infancy. WHO has announced that a vaccine for SARS-CoV-2 should be available in 18 months, but achieving this will require funding and public interest to be maintained even if the threat level falls.

Social media and sensationalist reporting are challenging outbreak response efforts. Misinformation and conspiracy theories spread on social media have generated panic and mistrust among the general public, diverted attention away from the outbreak response, and impeded the activities of health-care workers. WHO Director-General Tedros Adhanom Ghebreyesus said WHO is tackling the spread of false information with a "four-pronged approach", including using its WHO Information Network for Epidemics platform to track misinformation in multiple languages and collaborating with social and digital companies such as Facebook, Weibo, and Twitter to filter out false information.

How prepared the world was for the SARS-CoV-2 outbreak will surely be discussed in its aftermath. The initial response in China to contain the virus was applauded by WHO and considered much improved compared with its response to the 2003 SARS-CoV epidemic. Internationally, we have seen rapid generation and sharing of knowledge to the benefit of the outbreak response, but also counterproductive actions by some countries, including limiting trade and shutting of borders, to its detriment. With the increasing frequency of zoonotic spillovers leading to human infections and transmission, it's apparent that pandemic preparedness has become a priority for the global health agenda. ■ *The Lancet Infectious Diseases*