



Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.

Future pandemics: failing to prepare means preparing to fail



Governments of high-income countries with high SARS-CoV-2 vaccination rates have been encouraged by evidence of decreasing COVID-19-associated morbidity and mortality, and can begin to think about the change from pandemic to endemic and the prevention of future pandemics. Meanwhile, some low-income and middle-income countries (LMICs) are still grappling with high numbers of COVID-19 cases, hospitalisations, and deaths, and low vaccination rates. A similar pattern has been seen with previous pandemics, including HIV/AIDS, tuberculosis, and malaria. Although these diseases kill millions of people globally every year, they are often referred to as endemic. As stated by Prof Ali Zumla in a recent *Perspectives* article, “The pandemic exposes weaknesses of current leadership of global public health systems, inequities of resource allocation to Africa, and broken promises by wealthier nations for vaccine equity and resource allocation. This status quo is unacceptable.” Rather than allowing a splintering of attention and resources across the COVID-19 pandemic, other current pandemics, and future threats, we should move towards an integrated, multipronged approach that targets these threats collectively. We must learn from the way in which different countries responded to the COVID-19 pandemic and build on successful approaches to ensure equitable pandemic preparedness in the future. Tackling a pandemic requires a global response. Individual countries need to prepare, but success will be hindered if some countries are left without the capacity to respond to a new threat.

An analysis in the *BMJ* examined 28 national responses in the first year of the COVID-19 pandemic. Countries that were considered to be high performing were able to “partner, coordinate, develop, and strengthen” various public health, health-care system, and socioeconomic measures. Ultimately, these actions led to decreased disease transmission and lower mortality rates. Government cooperation, effective community engagement, and coordination across all levels of response led to successful procurement of resources and transformation from evidence-based policy to practice.

A recent Global Burden of Disease study also found that measures of trust in government, and less government corruption, were associated with lower infection rates

and higher SARS-CoV-2 vaccination coverage in middle-income and high-income countries. Therefore, efforts to improve communication surrounding risk of disease and community engagement strategies could help to boost public confidence in pandemic response strategies.

Low-performing countries identified in the *BMJ* analysis had four common themes: devaluation of effective pandemic preparedness plans through inadequate infrastructure and underfunded health systems; denial from heads of state of scientific evidence that COVID-19 was a severe risk to health, and lack of support for those most vulnerable to economic risks of COVID-19; delays in enacting rapid responses to different stages of the pandemic despite supporting evidence; and finally, distrust between the public, government leaders, and the scientific research community. Unfortunately, these factors have been compounded by the politicisation of many actions, including the use of facemasks and vaccines.

At present, many countries are severely underprepared to enact any plans for future pandemic prevention or response. They face numerous challenges in providing universal health coverage for citizens and are not able to allocate adequate investment or resources towards, for example, an increased workforce equipped to deal with current or future pandemics.

The Global Fund is actively involved in pandemic preparedness and response with their COVID-19

Published Online
February 10, 2022
[https://doi.org/10.1016/S2213-2600\(22\)00056-X](https://doi.org/10.1016/S2213-2600(22)00056-X)

For the **Profile of Ali Zumla** see **Perspectives** *Lancet* 2022; **399**: 427

For more on **pandemic preparedness** see <https://wellcome.org/news/how-prevent-another-major-pandemic>

For the **BMJ analysis** see *BMJ* 2021; **375**: e067507

For the **Global Burden of Disease study** see **Articles** *Lancet* 2022; published online Feb 1. [https://doi.org/10.1016/S0140-6736\(22\)00172-6](https://doi.org/10.1016/S0140-6736(22)00172-6)

For more on **C19RM** see <https://www.theglobalfund.org/en/covid-19/response-mechanism>

For more on the **One Health approach** see <https://www.who.int/news-room/questions-and-answers/item/one-health>

For more on the **Independent Panel for Pandemic Preparedness and Response** see <https://theindependentpanel.org>





Fanatic Studio/Science Photo Library

Response Mechanism (C19RM), which provides grant support to LMICs for COVID-19 tests, treatments, personal protective equipment, and critical elements of health system strengthening. C19RM aims to mitigate the impact of COVID-19 on programmes to fight HIV, tuberculosis, and malaria, and initiates urgent improvements in health and community systems; as of Jan 25, 2022, total funds approved to support C19RM reached US\$4.1 billion, made available through support from donors in the USA, Germany, the Netherlands, and Switzerland. The hope is that funding will not be diverted from current pandemic action and that separate income will be generated for future threats. Increased investment in COVID-19 tests, treatments, and vaccines has been extraordinary. To fully prepare for future pandemics, investment in mechanisms to prevent, detect, and respond to emerging pathogens is crucial.

As most emerging infectious diseases originate in animals, early-warning surveillance should be enacted at the environment–animal–human interface, alongside continued support for global genomic surveillance to sequence pathogen genomes and sharing of this information globally. Vaccination programmes and other public health initiatives are important for prevention and surveillance of emerging zoonotic infections, not least in LMICs. Hence, when such activities are reduced, the risk of new emerging zoonotic disease outbreaks with potential for global spread is greatly increased. The One Health approach

is imperative to maximise the chances of identifying zoonotic pathogens with pandemic potential before they spread to humans. It is important that countries reporting new variants are not vilified or blamed for the emergence of these variants; any backlash or shame induced might deter them from sharing crucial information. One Health is an effective framework to increase collaboration between different disciplines and countries, and for effective data-sharing.

The Independent Panel for Pandemic Preparedness and Response recommends reform of the global architecture for pandemic preparedness and for considerable changes to the way in which the WHO is funded and functions. With most WHO funding coming from voluntary contributions, it can often be spent only for purposes designated by the donor. One bold recommendation is that WHO should be given the authority to send teams to investigate outbreaks that appear to pose a pandemic threat without having to wait for approval from the country where the disease is spreading. Whether that move would be welcomed or feasible is a different matter.

The vaccine gap between high-income countries and LMICs must also be closed, allowing for equitable production—by increasing regional manufacture—and supply. Moreover, research should focus on diagnostics, therapeutics, and vaccines for other high-priority infectious diseases, such as Ebola or tuberculosis, to help with currently neglected diseases and to prepare for future threats. However, progress will depend on countries being open about the ongoing burden of disease and strain on health systems, with active lines of communication.

Preparedness for future pandemics must be multi-faceted, with flexible public health and social measures to respond to changing epidemiology and hospital capacity, and a commitment to the implementation of mitigation strategies. Success will depend on proactive, regionally and globally collective responses, as well as continuing maintenance of and preparations to create and expand resilient health-care infrastructure. Countries must strive for universal health care, have sustained investment in research and development, and work together—with sharing of information and resources—for global health equity.

■ *The Lancet Respiratory Medicine*