



THE UNIVERSITY *of* EDINBURGH

Edinburgh Research Explorer

Lessons in resilience

Citation for published version:

El Akoum, M, Dhami, S, Thompson, D & Sheikh, A 2022, 'Lessons in resilience: what covid-19 taught us about preparing for the crises to come', *BMJ (Clinical research ed.)*, vol. 378, pp. o2351. <https://doi.org/10.1136/bmj.o2351>

Digital Object Identifier (DOI):

[10.1136/bmj.o2351](https://doi.org/10.1136/bmj.o2351)

Link:

[Link to publication record in Edinburgh Research Explorer](#)

Document Version:

Publisher's PDF, also known as Version of record

Published In:

BMJ (Clinical research ed.)

General rights

Copyright for the publications made accessible via the Edinburgh Research Explorer is retained by the author(s) and / or other copyright owners and it is a condition of accessing these publications that users recognise and abide by the legal requirements associated with these rights.

Take down policy

The University of Edinburgh has made every reasonable effort to ensure that Edinburgh Research Explorer content complies with UK legislation. If you believe that the public display of this file breaches copyright please contact openaccess@ed.ac.uk providing details, and we will remove access to the work immediately and investigate your claim.





¹ World Innovation Summit for Health, Qatar

² NHS Lothian, UK

³ Usher Institute, University of Edinburgh, UK

Cite this as: *BMJ* 2022;378:o2351
<http://dx.doi.org/10.1136/bmj.o2351>

Published: 29 September 2022

Lessons in resilience: what covid-19 taught us about preparing for the crises to come

The covid-19 pandemic won't be the last global health crisis. Maha El Akoum and colleagues look at how we can strengthen health systems in preparation

Maha El Akoum,¹ Sangeeta Dhama,² Deidre Thompson,¹ Aziz Sheikh³

As of September 2022, there have been over 613 million cases of covid-19 and a global death toll of 6.5 million.¹ The pandemic caused an unprecedented global crisis, not only because of the millions of lives lost, but through the devastating economic and social disruption that accompanied it. Many health systems—even those considered “robust”—were left stretched far beyond their capacities. According to the Global Health Security Index report, released shortly before the start of the pandemic, no nation in the world was considered equipped to handle a global pandemic of this magnitude.² We also know that this pandemic won't be the last, so we need to make changes that ensure we're better prepared for the emergencies to come. How can we strengthen our fragile health systems?

By definition, in order for health systems to be deemed “resilient,” they must not only respond to the crisis at hand, but also maintain the provision of other essential health services throughout crises.^{3–5} Resilient health systems should be able to serve and protect people by preparing for, recovering from, and absorbing shocks to the system, while maintaining core functions to meet the needs of their populations.^{3,6}

Building and improving publicly funded health systems that are better prepared and more resilient against all threats to public health is crucial for sustained progress towards universal health coverage and global health security. We know that health systems do not operate in a vacuum, and healthcare is affected by other societal systems such as the economy, education, tourism, and social care. Planning for resilience therefore requires an integrated, intersectoral approach, with plans that prioritise the needs of the population as a whole (equally and without exception) during a public health emergency, as well as before and long after it.

Opportunities to build resilience

A report from the World Innovation Summit for Health (WISH), *Building health system resilience: A roadmap for navigating future pandemics*, proposes a set of practical and attainable policy recommendations for governments and policy makers that cover the short (over the next 12 months), medium (12–24 months), and longer term (24–36 months).⁷

Our recommended actions for the short term include the development of pandemic preparedness plans that are evidence based and multisectoral. Countries should establish a national pandemic

command-and-control centre that has the authority to declare outbreaks and develop a plan of action in response to emerging disease threats.⁸ Planning for “disease X” should include regularly tested simulation exercises, as well as a clear approach to maintaining healthcare services and protecting healthcare workers in the face of emergencies. These plans should also provide strategies for the urgent provision of personal protective equipment (PPE) and, once available, vaccines to protect healthcare workers.

In the medium term, we recommended that health system leaders reflect on the challenges they faced during the covid-19 pandemic. This will help them to identify and tackle the weaknesses in their health systems through the adaptation of care models, the development of information systems, and strengthening and empowering the health workforce. Specifically, the use of remote models of care should be enhanced through the development of mobile phone/wi-fi networks, additional training of healthcare workers and patients/carers, and through the incentivisation of longitudinal models of care that reward outcomes. In addition, we encourage health system leaders to learn from the responses that worked well and strengthen those models of working—for example, forging public-private partnerships and enabling third sector organisations to contribute to service delivery.

A global challenge

Our longer term policy recommendations will need to be implemented at national and international levels, and cover structural and regulatory elements aimed at improving resilience. At a national level, countries are advised to tackle shortages in the clinical and public health workforce by allocating additional funding in their annual budgets to cover capacity building activities and for increasing surge capacity. Legislative reforms should also be considered, both to allow personal health data (for example, test results and vaccination status) to be securely used to inform pandemic responses, and to ensure manufacturing capabilities can be repurposed to facilitate production of PPE, ventilators, vaccines, and drugs, where appropriate. Where there is public funding, all relevant agreements should include technology transfer and commitment to voluntary licensing.

At an international level, the World Health Organization (WHO) is encouraged to introduce measurable targets that set clear and achievable benchmarks for pandemic preparedness and

response. These targets should, we suggest, be reviewed by the WHO periodically to ensure accountability. Finally, we are in agreement with the World Bank and WHO about the need for a G20 Financial Intermediary Fund (FIF). An annual minimum budget of \$10.5 billion/year for its first five years (a total of at least \$50 billion) should be set aside for pandemic preparedness and response in order to support equitable access to diagnostics, therapeutics, global surveillance, manufacturing, vaccine development, research and development, and health system strengthening.⁹

It's true that covid-19 has exposed the vulnerabilities of our healthcare systems worldwide, but it has also presented new opportunities to build resilience for the crises to come. It is crucial that policy makers around the world now leverage these opportunities in order to build back health systems that are more resilient and better prepared.

Competing interests: AS is an adviser to a number of UK and Scottish government covid-19 advisory bodies and was a member of AstraZeneca's Thrombotic Thrombocytopenic Taskforce. He chaired the WISH 2022 Forum on Building Health System Resilience.

Acknowledgments: We acknowledge and thank the contribution of the advisory board of the WISH 2022 Forum on Building Health System Resilience who offered their unique insights to the report, namely: Dr Abdullatif Al-Khal, Hamad Medical Corporation, Qatar; Dr David Bates, Harvard T.H. Chan School of Public Health, USA; Dr Roberto Bertolini, Ministry of Public Health, Qatar; Prof Zulfiqar A. Bhutta, Hospital for Sick Children, Toronto, Canada; Prof Dame Sally Davies, Trinity College Cambridge, UK; Dr Victor Dzau, National Academy of Medicine, USA; Ms Preetha Reddy, Apollo Hospitals, India; and Dr Nicole Spieker, PharmAccess, Netherlands.

Provenance and peer review: commissioned; not peer reviewed

- 1 World Health Organization. WHO Coronavirus (COVID-19) Dashboard. [Cited 29 Sep 2022]. <https://covid19.who.int/>
- 2 Johns Hopkins Bloomberg School of Public Health. Global Health Security Index. 2019. <https://reliefweb.int/report/world/global-health-security-ghs-index-october-2019>
- 3 Kruk ME, Myers M, Varpilah ST, Dahn BT. What is a resilient health system? Lessons from Ebola. *Lancet* 2015;385:2. doi: 10.1016/S0140-6736(15)60755-3. pmid: 25987159
- 4 Kruk ME, Gage AD, Arsenault C, et al. High-quality health systems in the Sustainable Development Goals era: time for a revolution. *Lancet Glob Health* 2018;6:252. doi: 10.1016/S2214-109X(18)30386-3. pmid: 30196093
- 5 Azzopardi-muscat N, Mckee M, Sagan A, Webb E, De La Mata I, Figueras J. Health systems resilience during COVID-19 pandemic: Lessons for building back better. Health Policy Series 56. European Observatory on Health Systems and Policies; World Health Organisation. 11 Nov 2021. <https://eurohealthobservatory.who.int/publications/f/health-systems-resilience-during-covid-19-lessons-for-building-back-better>
- 6 United Nations. United Nations Plan of Action on Disaster Risk Reduction for Resilience. 2017. https://www.preventionweb.net/files/49076_unplanofaction.pdf
- 7 El Akoum M, Dhani S, Thompson D, Sheikh A. Building health system resilience: A roadmap for navigating future pandemics. 2022.
- 8 World Health Organization. Prioritizing diseases for research and development in emergency contexts. [Cited 8 Sep 2022]. <https://www.who.int/activities/prioritizing-diseases-for-research-and-development-in-emergency-contexts>
- 9 World Health Organization. Delivering on the G20 Leaders commitment to build an equitable and effective Financial Intermediary Fund (FIF) for Pandemic Preparedness and Response (PPR). 19 Apr 2022. [https://www.who.int/news/item/19-04-2022-delivering-on-the-g20-leaders-commitment-to-build-an-equitable-and-effective-financial-intermediary-fund-\(fif\)-for-pandemic-preparedness-and-response-\(ppr\)](https://www.who.int/news/item/19-04-2022-delivering-on-the-g20-leaders-commitment-to-build-an-equitable-and-effective-financial-intermediary-fund-(fif)-for-pandemic-preparedness-and-response-(ppr))