

# Perspectives for Better Health: prepare for the Exiting Severe Phase of the COVID-19 pandemic

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## ABSTRACT

On May 5, 2023, the World Health Organisation declared that COVID-19 was no longer considered a public health emergency of international concern, and various governments are closing their healthcare facilities, meticulously prepared for the world's worst pandemic. However, the question arises of how to exit this pandemic's severe phase responsibly. The present communication discusses the follies of being underprepared to tackle COVID-19, particularly by the economically weaker nations, and it also outlines the necessary steps that are now needed for better management of future pandemics with international cooperation of the developed and developing countries. More attention is needed to address the paradox of digital access in excess but of little technical use, particularly in emergencies like the recent viral pandemic. If the scientific analyses of the healthcare issues had been carried out correctly, their predictions and strategies supported by authentic big data, managing the pandemic could have been better. Still, there is time and expertise developed recently that can help future generations. On the individual front, mass education, awareness of hygiene, and understanding and application of basic science, particularly in rural areas, needed to be safer rather than depend on traditional beliefs and expect miracles, a system prevalent in developing countries.

## Introduction

The COVID-19 emergency in most parts of the world is at its fag end, and governments of the member nations of the World Health Organization are closing their healthcare facilities, which were meticulously prepared for the world's worst pandemic. Global efforts have controlled the coronavirus using state-of-the-art technological

innovations [1]. Science has made it possible in a very short period. However, the world has lost millions, partly due to the mishandling of the viral attacks. Ultimately, the crisis has reminded us about the importance of health and well-being in our societies. Healthcare personnel worldwide should learn from earlier mistakes to mount more robust responses, as the transition from the pandemic to the endemic is relatively recent. The

successful control of the virus and its emerging lineages and sub-lineages has indicated some concealed failures that must be addressed now, requiring more vigilance, as even a bit of laxity can spoil the good work done. On societal and governmental parts, the utmost care and caution are required long-term. Healthcare systems battered by famines, droughts, and epidemics in low-income countries have been more affected by COVID-19, causing a great reverse in decades of economic and health sector improvements and reiterating the need for various national governments to prioritise issues of healthy living and well-being and work towards the goal of Sustainable Development Goals [2].

Post-COVID-19, several deluges follow, a mix of viral endemics asking to close one of the most outstanding global efforts very casually. For COVID-19, this means understanding the critical contradictions at the core of the pandemic in various parts of the developing and developed world, including the USA. The Global Health Security Index data shows that even high-income countries, which tend to respond well to pandemics, experienced over 6960783 confirmed deaths from COVID-19 [3]. However, this number may differ since correct data are unavailable for confirmed deaths due to the pandemic. Msemburi et al. [4] found it was 2.74 times higher globally than the figure reported till Dec 2021. The catastrophic destruction leading to deaths by COVID-19 in India was at its peak during the middle of 2021. The highest cumulative excess death numbers for India accounted for 4.74 million deaths. Conclusively, it is a cumulative loss of millions of human lives worldwide, enough to point out that mismanaged causalities cannot be counted for sure in an uncontrolled pandemic.

## Getting Prepared

People from low-income countries with mediocre healthcare efficiencies can only partially rely on government healthcare help. They must be ready to pool resources to make a robust platform for providing essential health services. The European Union and the high-income countries have different healthcare systems, as fewer of the population are financially supported by their governments. Most of these countries have

a system of tightly regulated, competing private health insurance companies, with government subsidies available for citizens who cannot afford coverage. The problem lies more with economically weaker nations. For instance, in India, bearing hospital costs has been typically out of pocket for decades, particularly in economically weak nations. However, the government has provided some help by increasing health budgets and doling out freebies at the cost of taxpayers, which is not enough to cater to the needs of millions. More than allocated government funds will be required to improve health care; alternate resources like out-of-pocket or pooled pockets must be worked out for the escalating health expenditures.

Governments with administrative transparency as their thrust area can plan to look after their people better with long-lasting solutions for delivering health. Creating viable joint financial strategies is needed for the real-time execution of essential public health functions, which are bound to magnify the ongoing challenges of existing and emerging infectious disease outbursts. The robust digitalisation of health metadata and its judicious use after proper scientific interpretation in populous nations is an important area requiring immediate attention. People who need the most medical attention are least known to us.

The COVID-19 pandemic has revealed the limitations of digital access to health data, despite having technology at hand. If we had used this state-of-the-art scientific analysis of COVID-19, its predictions and strategies supported by authentic healthcare data things would have been different in managing the pandemic. Still, expertise developed recently by regional and global efforts can help the health systems of future generations.

There is a need to establish and strengthen early identification and reporting epidemic systems, like a set of index systems, which can be established to analyse and evaluate the situation of infectious disease, judge the probability and severity of the crisis, and decide whether to send a crisis alarm. Health administrators must find sensitive and effective early warning indicators and establish a complete monitoring system for controlling future epidemics, helping us to identify leading threats and develop state-of-the-art therapies in advance.

The global vaccination programs and other urgent measures were accomplished in record time by coming together. These sincere efforts demonstrate how, in an emergency, the world's healthcare systems can be saved by using advanced technologies and helping each other. The effects of global vaccination and access to mRNA technology offered rapid vaccine adaptation to the rapidly changing viral variants, one of the best tools to control COVID-19 [5].

In this regard, various techniques have been employed to develop new vaccines. Among these, the COVID-19 messenger RNA (mRNA) vaccine has drawn significant attention due to its tremendous application prospects and advantages, which include a short development cycle, easy industrialization, a simple production process, flexibility to respond to new variants, and the capacity to induce better immune responses. Consequently, scientists are creating rapid plug-and-play technical platforms using mRNA technology or adenovirus vectors that can be quickly modified to combat a specific emerging threat [5,6].

There is also a necessity to access stronger and therapeutically effective antivirals, which can directly decrease the risk of severe infections through emerging new variants. These drugs should include broad-spectrum antivirals such as umifenovir, protease inhibitors like lopinavir /ritonavir RNA-dependent RNA polymerase inhibitors, remdesivir, and favipiravir. Other drugs that have been used include nucleosidase inhibitors and polymerase acidic endonuclease inhibitors, which are approved to prevent influenza infections. While some drugs appear promising in small case series and reports, more clinical trials are required to provide higher-quality evidence [7].

Omicron lineage is dominant worldwide, with infections driven by its emerging sub-lineages. Although the current understanding of the virus is improving, its evolution is inherently unpredictable, and a likely future scenario is the emergence of new potential variants that may be antigenically and phenotypically distinct from the early forms. Healthcare specialists must remain prepared for such evolutionary behaviour of emerging variants that could threaten the future by developing more specifically targeted antivirals. It is, therefore, of public health and clinical importance to understand the drivers of the changing virulence of the causative agents [8].

The instinctive survival attitudes also showed that strict compliance with protocols and guidelines can control the worst of calamities. The efficient and disciplinary handling of the waves of infectious diseases, including COVID-19, using advanced technology by the government of Saudi Arabia is an interesting example to illustrate that successful healthcare management strategies can save human lives. Even during the COVID-19, a multidisciplinary Saudi team from governmental sectors, including the Global Center for Mass Gatherings Medicine, shared in the assessment, planning, execution, and success of this holy event to prevent the spread of disease, and almost zero cases were reported during the Hajj pilgrimage of 2020 amid peak corona pandemic worldwide [9].

This instance highlights the success of the risk mitigation plan in place during the Hajj pilgrimage in 2020 during the COVID-19 pandemic and the efforts of the Saudi government to prevent associated outbreaks. Keeping the health care system fully prepared and even visualizing for the coming years, Saudi Arabia, under its recent Vision 2030 [10], wisely opted for thoughtful plans of action for its fellow citizens, saving unnecessary deaths to a great extent, proving the fact that investment in health never goes in vain in the long term.

Thus, health policy experts have to be more pragmatically prepared for the rapidly expanding burden of chronic conditions arising out of rapid viral mutations and their clinical severities all over the globe, in particular in developing economies. Intensive and active surveillance of susceptible animal species is needed as reverse zoonosis is documented, compounding the problem for inadequate facilities of genetic sequencing in many economically weak countries. There are also places with previously good surveillance that are decreasing or phasing out sequencing altogether as maintenance of high-tech facilities depends upon funds.

A lack of genomic surveillance will mean future variants will be detected much later or could be circulating at low levels before eventual detection. There is an urgent need for widespread and equitable local and regional surveillance coverage to rapidly detect potential new variants among infected communities before they spread more widely. In this regard, policy-

makers worldwide must strengthen their remote primary healthcare systems, taking lessons from such countries that have dedicated significantly despite the paucity of funds. We must gather rapid international commissioned support to secure the health of the world populations across the life course, using and maintaining new advanced technologies necessary for surveillance and survival [11,12].

One of the essential preparatory things that must be done at all levels to battle emerging pandemics is maximising the merger of private and government financial sources to achieve complex healthcare goals. The power of such partnerships between the private and government sectors must be worked out, needing more support. During this pandemic, most of the underprivileged parts of the world have seen the philanthropy of many international funders, both government and private, who have contributed to the cause of humanity with significant transparency and remarkable results. If respective government agencies across the continents tie up financially with known charitable trusts, the management of pandemics will be better.

Another area needing attention is local governments of developing countries coming forward to waive off taxes for long-term health care settings or provide significant tax reliefs. For instance, in India, the government can relieve the middle class by not paying substantial yearly increasing premiums for health insurance, either by reducing or exempting the taxes. With a transparent monitoring system, government sharing of healthcare insurance schemes like micro-financing on very low premiums can be made for the financially weak, who are more vulnerable to out-of-pocket expenses. Though several national and state-run schemes are available in most Asian countries, they are either extravagant or misused due to corruption, causing grief rather than relief to the people.

The governments of developing countries, who already suffer from workforce shortages and other issues in healthcare systems, should take advantage of the lessons learned during this crisis and build resilience to combat future health pandemics and achieve progress towards Universal Health Coverage. International organizations must scale up financing for pandemic preparedness while strengthening the financing of the

World Health Organization. They must empower multilateral development banks to play a more prominent role in financing global public goods, as recommended by the OECD, to prepare for the next pandemic [13,14].

On the individual front, mass education, hygiene awareness, and basic science application are necessary for rural areas to be safer rather than depend on traditional beliefs and expect miracles, a system rampant in developing nations. In these countries, more attention is required to monitor animal-transmitted diseases by ensuring scientific and hygienic conditions [15].

Due to the financial crisis, many countries must prepare to enact plans for future pandemic prevention or response. They face numerous challenges in providing universal health coverage for citizens. They cannot allocate adequate investment or resources towards, for example, an increased workforce with low resources equipped to deal with current or future pandemics. Globalization starting from local areas is required with international co-operation.

India can contribute by providing affordable, effaceable, and cost-effective maintainable vaccines to the developing world, addressing the cold-chain storage issues faced in developing nations. However, as urged numerous by different groups of scientists [6,16,17,18] the vaccine inequality must be removed, as presently, the low-income countries get minimal supplies. COVID-19 revealed the fragility of vaccine production. The world heavily depends on just a few manufacturers. Vaccines and therapeutics must be made more equitably, with regional hubs ready to mass produce high-quality medical products in an emergency. It is pivotal to ensure the ability of lower-income regions to manufacture and distribute vaccines based on technologies, such as the mRNA platform, which allow a rapid response to the epidemiological threat and, subsequently, decrease the burden of infectious diseases more effectively [19,20].

Building local manufacturing capacity requires waiving intellectual property rights, and training people to work in them, often in low-resource settings, which necessitates the participation of the private sector alongside governments, given its role in vaccine research, production and distribution. The COVID-19 crisis has tested the resilience

and agility of various countries' health systems in an unprecedented way, shedding harsh light on its strengths and weaknesses; in several cases, a lack of preparedness, equipment and infrastructure to deal with an event of these proportions. However, the pandemic has also highlighted great solidarity, inventiveness, and resilience, not least on the part of the health workforce, which has led the way in fighting the pandemic on the ground. It has reminded us that health threats know no borders and that these challenges can only be faced if we work together across borders and sectors. Industrialised economies can significantly contribute in this regard, which will be a massive step in humanitarian equity and will work as a genuinely efficacious vaccine, much needed for global healthcare systems.

## Summary

- › In order to be better prepared for future pandemics, which are bound to magnify, pooling resources to make a strong platform for providing essential health services is recommended.
- › Governments with transparency can look after their people better by creating joint financial strategies with private organisations for the real-time execution of essential public health functions.
- › Robust digitalization of health metadata and its judicious use after proper scientific interpretation in populous nations to better manage outbursts of global infections requires immediate attention.
- › More attention must be focused on easy access to effective anti-virals, which can directly decrease the risk of severe infections through emerging variants. Scaling up global vaccination programs with equity can avert millions of deaths. On the individual front, hygiene awareness, monitoring zoonotic diseases and applying basic science, particularly in rural areas, is needed.

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### Data Availability

Relevant collected data are available on reasonable request to the corresponding author.

### Conflict of interest statement

The authors declare no conflict of interest.

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## References

1. Ali SA. Have we tamed the coronavirus? Maybe yes, as pandemics do not die, they can only be faded! Editors Communiqué. Biosc. Biotech. Res. Comm. 2023;16(1):1-2.
2. Leal Filho W, Brandli LL, Lange Salvia A, Rayman-Bacchus L, Platje J. COVID-19 and the UN Sustainable Development Goals: Threat to Solidarity or an Opportunity? Sustainability. 2020;12(13):5343. <https://doi.org/10.3390/su12135343>.
3. WHO Coronavirus (COVID-19) 2023 Dashboard. <https://covid19.who.int> (Accessed 26th June 2023).
4. Msemburi W, Karlinsky A, Knutson V, Aleshin-Guendel S, Chatterji S, Wakefield J. The WHO estimates of excess mortality associated with the COVID-19 pandemic. Nature. 2023 Jan;613(7942):130-137. <https://doi.org/10.1038/s41586-022-05522-2>.
5. Fang E, Liu X, Li M, Zhang Z, Song L, Zhu B, Wu X, Liu J, Zhao D, Li Y. Advances in COVID-19 mRNA vaccine development. Signal Transduct Target Ther. 2022 Mar 23;7(1):94. doi: <https://doi.org/10.1038/s41392-022-00950-y>.
6. Rzymiski P, Camargo CA Jr, Fal A, Flisiak R, Gwenzi W, Kelishadi R, Leemans A, Nieto JJ, Ozen A, Perc M, Poniedziałek B, Sedikides C, Sellke F, Skirmuntt EC, Stashchak A, Rezaei N. COVID-19 Vaccine Boosters: The Good, the Bad, and the Ugly. Vaccines (Basel). 2021 Nov 9;9(11):1299. <https://doi.org/10.3390/vaccines9111299>.
7. Teoh SL, Lim YH, Lai NM, Lee SWH. Directly Acting Antivirals for COVID-19: Where Do We Stand? Front Microbiol. 2020 Aug 5;11:1857. <https://doi.org/10.3389/fmicb.2020.01857>.
8. Carabelli AM, Peacock TP, Thorne LG, Harvey WT, Hughes J; COVID-19 Genomics UK Consortium; Peacock SJ, Barclay WS, de Silva TI, Towers GJ, Robertson DL. SARS-CoV-2 variant biology: immune escape, transmission and fitness. Nat Rev Microbiol. 2023 Mar;21(3):162-177. <https://doi.org/10.1038/s41579-022-00841-7>.
9. Jokhdar H, Khan A, Asiri S, Motair W, Assiri A, Alabdulaali M. COVID-19 Mitigation Plans During Hajj 2020: A Success Story of Zero Cases. Health Secur. 2021 Mar-Apr;19(2):133-139. <https://doi.org/10.1089/hs.2020.0144>.
10. Rahman R, Al-Borie H. Strengthening the Saudi Arabian healthcare system: role of vision 2030. Int J Health Care Manag. 2020;1-9:1483-1491. <https://doi.org/10.1080/20479700.2020.1788334>.
11. OECD Organisation for Economic Co-operation and Development Realising the full potential of primary health care. OECD Publishing, Paris 2020.
12. WHO-UNICEF A vision for primary health care in the 21st century: towards universal health coverage and the Sustainable Development Goals 2021.

13. OECD. Preparing for the next pandemic: What Development Assistance Committee members should know, OECD Development Co-operation Directorate, OECD Publishing, Paris 2022.
14. The Lancet Respiratory Medicine. Future pandemics: failing to prepare means preparing to fail. *Lancet Respir Med.* 2022 Mar;10(3):221-222. [https://doi.org/10.1016/S2213-2600\(22\)00056-X](https://doi.org/10.1016/S2213-2600(22)00056-X).
15. Gwenzi W, Skirmuntt EC, Musvuugwa T, Teta C, Halabowski D, Rzymiski P. Grappling with (re)-emerging infectious zoonoses: Risk assessment, mitigation framework, and future directions: *International Journal of Disaster Risk Reduction.* 2022 November;82:103350. <https://doi.org/10.1016/j.ijdr.2022.103350>.
16. Sridhar D. Learn from past pandemics: *Nature.* 2022;610:S50. <https://doi.org/10.1038/d41586-022-03362-8>.
17. Gozzi N, Chinazzi M, Dean NE, Longini IM Jr, Halloran ME, Perra N, Vespignani A. Estimating the impact of COVID-19 vaccine inequities: a modeling study. *Nat Commun.* 2023 Jun 6;14(1):3272. <https://doi.org/10.1038/s41467-023-39098-w>.
18. Rzymiski P, Pokorska-Śpiewak M, Jackowska T, Kuchar E, Nitsch-Osuch A, Pawłowska M, Babicki M, Jaroszewicz J, Szenborn L, Wysocki J, et al. Key Considerations during the Transition from the Acute Phase of the COVID-19 Pandemic: A Narrative Review. *Vaccines.* 2023;11(9):1502. <https://doi.org/10.3390/vaccines11091502>.
19. Rzymiski P, Szuster-Ciesielska A, Dzieciatkowski T, Gwenzi W, Fal A. mRNA vaccines: The future of prevention of viral infections? *J Med Virol.* 2023 Feb;95(2):e28572. <https://doi.org/10.1002/jmv.28572>.
20. Savinkina A, Bilinski A, Fitzpatrick M, Paltiel AD, Rizvi Z, Salomon J, Thornhill T, Gonsalves G. Estimating deaths averted and cost per life saved by scaling up mRNA COVID-19 vaccination in low-income and lower-middle-income countries in the COVID-19 Omicron variant era: a modelling study. *BMJ Open.* 2022 Sep 13;12(9):e061752. <https://doi.org/10.1101/2022.02.08.22270465>.