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Frontiers of medicine unveiled: equitable access is an imperative

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A Viewpoint on the Frontiers in Science Lead Article

Standing the test of COVID-19: charting the new frontiers of medicine

Key points

- The remarkable achievements made in medical science during and after COVID-19 offer an unprecedented opportunity for transformative change to improve population health—subject to equitable global access.
- Equitable access to novel medical technologies will require i) a suitable global political compact reconsidering power relationships between the Global North and the Global South, ii) an end-to-end architecture for adoption, iii) a research and development paradigm directed to the common good, and iv) strengthened health service delivery capacity.

Introduction

In their lead article on lessons gained from the COVID-19 pandemic and the frontiers of medical science, Cauchemez and colleagues (1) highlight numerous fast-paced advances in biomedical science, vaccinology, data science, digital health, and modeling that occurred during COVID-19. Indeed, these developments offer tremendous potential to transform the field of medicine and improve population health. No country has been spared from the effects of COVID-19. Thus, for this potential to be realized, such medical technologies must be adopted globally, across every region and country. Furthermore, most of the global population now live in Africa, China, and India—and Africa is home to the youngest population in the world. Unless these new advances in health technologies meaningfully reach these geographic regions and population segments, we severely limit and risk losing their benefits.

The global response to the pandemic has taught us a searing lesson: that we need a different, comprehensive, and radical approach optimized for the delivery of equitable access to medical technologies across and within countries—and that this should be a forethought, not an afterthought (2, 3). Political will is required to ensure that progress in clinical medicine for individual patients leads to equitable gains in aggregate health outcomes across divisions of income, wealth, geography, class, and ethnicity (4).

Developing novel medical technologies is an important dimension of the holy grail of equitable access, but it is only one of four mission-critical dimensions that we outline below. Failure to concurrently address all four dimensions would perpetuate inequitable access to medical technologies and the associated moral, financial, and public health failures that prevailed during the pandemic.

Political compact for equitable access

COVID-19 revealed a global political ecosystem that causes inequities in access to life-saving medical technologies. The World Trade Organization (WTO) did not rise to the occasion (5) and even COVAX, whose mission it was to enable equitable access to vaccines, failed to achieve its stated objectives (6). That experience led to calls for fundamental changes to the structures, incentives, and rules that govern research and development and access to health technologies at a global level. The solution is inevitably political and must include reconsidering power relationships between the Global North and the Global South, with emphasis on rules, incentives, and investments that enable governments of the Global South to advance their own interests without needing the permission of—and without threats of vetoes from—the Global North.

Architecture for access

The widespread and equitable adoption of new medical technologies faces significant barriers, particularly due to governance and coordination structures managed by global organizations such as Gavi (the Vaccine Alliance that administered and coordinated COVAX) and WTO. These entities often operate under paradigms that perpetuate historical imbalances in decision-making power. In this architecture, countries and patients with the greatest potential to benefit are sidelined in crucial discussions about intellectual property, pricing, delivery, and adaptation of new medical technologies for widespread use. A massive overhaul and reform of this architecture is a crucial pre-requisite for the widespread use of new advances in medical technology.

Without active involvement as co-creators and key decision-makers in determining the suitability of new medical technologies, how can we expect future generations of patients, providers, and scientists—many of whom will be in Africa—to embrace these advancements? It is essential that they have a voice in shaping the direction of medical innovation to ensure it meets the needs and contexts of their communities. The solution lies in purposefully optimizing for equity through an end-to-end architecture that is fit

for that purpose. The core principles for such architecture are human rights, guaranteed equitable protection, national and regional resilience, a common goods approach, inclusive governance and decision-making, equity, access and freedom to operate, sustainable financing designed for health impact, and accountability (7).

A research and development paradigm for novel technologies

Commercial innovation neither solves nor guarantees the development of medical technologies that will have the greatest impact on population health. The prevailing situation in antibiotic research and development is a case in point. This is also the case for several of the COVID-19 medical technologies mentioned by Cauchemez et al. (1). National and global public research infrastructures are a critical part of this and need to be improved. Progress requires a break from the prevailing economic theory's assumption that the state can mostly fix market failures. Rather, it needs the adoption of a progressive conception of the common good. That conception would be grounded not merely in fixing market failures but in shaping and steering toward collective goals (8).

Delivery through the value chain

Across many low- and middle-income countries, there are important weaknesses in the value chain of institutions and infrastructures for equitable delivery of health technologies. These translate into uneven and slow progress towards universal health coverage. Accordingly, countries should invest in strengthening their service delivery capacities to deliver through the health value chain of institutions and infrastructures. To have a multiplier effect that is sustainable, foreign aid for health should focus on institution building and regional/global public goods, while transitioning out of financing basic health services and basic health technologies (9).

Conclusion

This era offers an unprecedented opportunity to achieve transformative change for equity. Progress in medical science and technologies is taking place at a remarkable and unprecedented speed. Equitable and effective responses to a pandemic will not materialize, however, unless the scope of that progress is truly global. In a post-COVID-19 pandemic era, the world now has a unique opportunity to address the major reform agenda needed to prevent and contain new outbreaks and to ensure equity in access in the event of a pandemic. However, the challenges that intergovernmental parties now face in negotiating a new pandemic accord (10) show that truly transformative changes are unlikely to occur in the absence of the highest level of political attention and commitment. New pandemic threats are inevitable, but political choices shape the transition from threat to reality, its management, and consequences; therein lies the challenge.

Statements

Author contributions

OA: Conceptualization, Writing – original draft, Writing – review & editing. PY: Conceptualization, Writing – original draft, Writing – review & editing. MK: Conceptualization, Writing – original draft, Writing – review & editing.

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References

1. Cauchemez S, Cossu G, Delzenne N, Elinav E, Fassin D, Fischer A, et al. Standing the test of COVID-19: charting the new frontiers of medicine. *Front Sci* (2024) 2:1236919. doi: 10.3389/fsci.2024.1236919
2. Maxmen A. Unseating big pharma: the radical plan for vaccine equity. *Nature* (2022) 607(7918):226–33. doi: 10.1038/d41586-022-01898-3
3. The Independent Panel for Pandemic Preparedness and Response. *COVID-19: Make it the last pandemic* (2021). Available at: https://theindependentpanel.org/wp-content/uploads/2021/05/COVID-19-Make-it-the-Last-Pandemic_final.pdf.
4. Baum F, Townsend B, Fisher M, Browne-Yung K, Freeman T, Ziersch A, et al. Creating political will for action on health equity: practical lessons for public health policy actors. *Int J Health Policy Manag* (2022) 11(7):947–60. doi: 10.34172/ijhpm.2020.233
5. Kohler J, Wong A, Tailor L. Improving access to COVID-19 vaccines: an analysis of TRIPS waiver discourse among WTO members, civil society organizations, and pharmaceutical industry stakeholders. *Health Hum Rights* (2022) 24(2):159–17.

Conflict of interest

OA is President of Resilient Health Systems LLC. The company was not involved in the study design, collection, analysis, interpretation of data, the writing of this article, or the decision to submit it for publication.

The remaining authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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6. Reddy SG, Acharya A. *The failure of COVAX: A Predictable Outcome*. Rochester, NY: SSRN (2023). doi: 10.2139/ssrn.4673596
7. Torreele E, McNab C, Adeyi O, Bonnell R, Dhaliwal M, Hassan F, et al. It is time for ambitious, transformational change to the epidemic countermeasures ecosystem. *Lancet* (2023) 401(10381):978–82. doi: 10.1016/S0140-6736(23)00526-3
8. Mazzucato M. Governing the economics of the common good: from correcting market failures to shaping collective goals. *J Economic Policy Reform* (2024) 27:1–24. doi: 10.1080/17487870.2023.2280969
9. Adeyi O. In focus: Transitioning out of aid dependency in health. *Development Co-operation Report 2023: Debating the Aid System*. Paris: OECD Publishing (2023). Available at: https://www.oecd-ilibrary.org/development/development-co-operation-report-2023_2c087f8b-en.
10. Taylor L. Covid-19: WHO treaty on future pandemics is being watered down, warn health leaders. *BMJ* (2023) 381:1246. doi: 10.1136/bmj.p1246