
COMMENTARY

Reimagining Vaccine Access for Health Equity

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The Covid-19 pandemic elevated global attention to the complex problem of allocating and disseminating newly approved vaccines. Following early calls for vaccine equity,¹ global health leaders made progress but struggled to fully realize distribution goals.² With respect to vaccination rates, low and middle income countries have not achieved full parity with high income countries.³ In this issue, Harmon, Kholina, and Graham follow longstanding critiques of market-based vaccine procurement to propose “legal and practical solutions for realizing a new access to vaccines environment”⁴ that will, they suggest, further the goal of global health justice.

As the problem of equitable access to vaccines is not a new one,⁵ we might productively ask how the present environment came to be. Historical perspective suggests that, if global health justice is the motivating ideal, the time is ripe for a new concept of access itself: one in which access to vaccines is defined by not only their distribution and use, but also their effectiveness.

Vaccines are survivors of a much broader vision of health governance articulated in the past. When physicians affiliated with the social medicine movement drafted the constitution for a new World Health Organization in 1946, they led with a keen eye to the socio-

political conditions shaping the distribution of disease worldwide and a commitment to the “spirit of justice.”⁶ In the 1951 annual report to the World Health Assembly, WHO director Brock Chisholm wrote that “world health consciousness” was growing with a “broadening of the general concept of the right to health.”⁷ To Chisholm, this obligated investment in a comprehensive practical approach. “More authorities,” he stated, “are becoming aware that many campaigns for the eradication of diseases will have only temporary results if they are not followed by the establishment of permanent health services in those areas to deal with the day-to-day work in the control and prevention of disease and the promotion of health.” The establishment of the WHO amid the larger United Nations system promised institutional stability and a long time-horizon to enact this politically, technically, and ethically complex vision.

WHO observers have since established an analytic dichotomy, in which Chisholm’s commitment to health systems and the sociopolitical drivers that shape distribution of health resources is set in contrast to a tendency to see technology as something separable from the comprehensive approach.⁸ The emphasis has been on the development of technology, not the systems that distribute these resources.

The orientation shift is evident in the language structure of key WHO documents. The original constitution of the WHO, for example, does not mention technology, only vaguely alluding to it in the principle that “extension to all peoples of the benefits of medical, psychological, and related knowledge is essential to the fullest attainment of health.” This principle centers the work of distribution, or “extension.”⁹ By the next major statement of commitment to the “spirit of jus-

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tice,” however, this principle had been reformulated. The Alma Ata Declaration of 1978 promised “essential health care based on practical, scientifically sound and socially acceptable methods and technology made universally accessible.”¹⁰ The rising priority of technology was also indicated by the quick revision of Alma Ata’s comprehensive primary health care vision to an approach that targeted health through four “selective” methods and technology: Growth monitoring, Oral Rehydration, Breastfeeding, and Immunization. The “GOBI” approach framed policy and practice into the 1980s.¹¹

There was good reason for optimism about vaccine technology. When the first U.S. professional schools of public health were constructed, only smallpox, rabies, and typhoid vaccines were available, and these highly variable in quality.¹² By 1970s, however, there were nine vaccines included on the WHO’s first model

ment, but also act faster than multi-national operations. Contract-based “health export” programs, some believed, would furthermore avoid the risk of the U.S. government appearing to re-manifest colonial health bureaucracies of the past. Small-scale technologies had a history of support from anti-colonial movements seeking self-determination and alternatives to centralized state systems.¹⁷ And as purses that funded health and human development programs were tightened all the more into the 1980s,¹⁸ tangible tools that could be readily accounted, like vaccines, were all the more suited to the “audit culture” evolving in public health and other social impact sectors.¹⁹ Although some comprehensive health advocates in the 1970s worried famously that a successful smallpox eradication campaign would prove a distraction from broader health initiatives, the corrosive forces acting against comprehensive health investments before and since

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Essential Drugs List.¹³ Success in the smallpox eradication campaign as well as the newly instituted routine childhood vaccinations in the U.S. carved a path for a WHO Expanded Program on Immunization (EPI).¹⁴ Initiated in 1974, EPI is credited with launching a global vaccination movement estimated to have since averted 154 million deaths, explaining 40% of the observed decline in global infant mortality, with gains in childhood survival in every global region.¹⁵

The current emphasis on vaccines is a story about the triumph of vaccines. But it is also a story about the erosion of institutional commitments to comprehensive approaches to public health. In the decades following the formation of the WHO, its dominant financiers have variously deemed public health systems too slow, too socialistic, too colonial, and too expensive. As health programs emerged as a key theater in Cold War contests during the 1950s, the pressure to achieve fast, demonstrable results escalated. Frustrations with the slowness of the WHO grew among thought-leaders in the major U.S. philanthropies, who shifted their policies and priorities away from multinational institutions by the end of that decade.¹⁶ The US government established the new bilateral aid agency USAID in 1961 on the premise that bilateral aid would not only put a clear U.S. stamp on the work of human develop-

ment, but also act faster than multi-national operations. Vaccines promised to sustain some form of disease control in this emerging global environment

Even so, expense and implementation proved major challenges. In USAID’s PRITECH program, for example, launched under the GOBI framework to increase production and dissemination of ORTs and vaccines in low-income countries, vaccines all but disappeared from multiple early iterations of the program.²⁰ While many argued for eliminating patent protections, others believed that challenging the intellectual property rights of pharmaceutical companies brought its own risks to global health. Industry interest in working on vaccines was already tenuous, weighing the high risk of failure in the drug development pipeline and the rising costs of managing lawsuits over vaccine-related injury claims against low revenue potential. Institutions such as the National Vaccine Injury Compensation Program in the United States, created in 1986 to protect companies from lawsuits not supported on scientific evidence,²¹ did not fully solve the problem. The number of companies making vaccines dropped from twenty-six in 1957 to four in 2004.²²

In low income countries, vaccination rates slowed in the 1990s and powerful new vaccines were financially inaccessible. The newly established Bill and Melinda

Gates Foundation carved a scheme to respond relatively quickly within the constraints of the capitalist economic system. A \$750 million investment established a Global Alliance for Vaccines and Immunization (now Gavi, the Global Vaccines Alliance) in 2000, initiating public private partnerships and employing market shaping strategies to negotiate lower prices without eliminating IP rights or profit margins.²³

In this global health environment, the notion of access has been climbing to the top of the global development agenda. Now generally defined as the “obtainment and appropriate use” of a technology,²⁴ the meaning of access has extended beyond financing to include recognition of the role that context plays in shaping obtainment and use.

If the goal is global health justice, there may be strategic utility in expanding the notion of access yet one step further. Even as movements for vaccine equity raise attention to the political economy of vaccines, the late 20th century access movement has not generally demanded attention to the way clinical factors including obesity, nutrition, and other underlying health conditions affect the efficacy of particular vaccines.²⁵ This limit on the notion of access reflects a long-evolving split between the worlds of clinical medicine and public health.²⁶ But attention to the role of host factors in vaccine efficacy is on the rise, with implications for the meaning of vaccine equity: even if everyone has access to a vaccine, is the sense of equity achieved if it doesn’t work as well in some populations as it does in others? A better concept of access would not only account for allocation of the vaccine technology, but also obligate attention to the clinical effectiveness of the tool. This expansion of the concept of access would push forward global governance of health.²⁷

It speaks the language of the dominant funders of global health today, putting the importance of broader health investments in terms of technology effectiveness. It is also compatible with pandemic preparedness, prevention, and response goals. Investments in public health that result in the improvement of the generally poor health status of many people would not only prevent a substantial burden of morbidity and mortality from infectious disease when vaccines are not available;²⁸ they would also improve the effectiveness of some number of these tools when they are. And if led by the anti-colonial movement’s insights on past failures to realize ideals of both political stability and health justice through health and development programs,²⁹ trustworthy public health systems may indeed make progress on vaccine confidence.³⁰

Vaccines have rightly captured the imagination of global health institution builders. They are precious

tools. Reimagining them — from a one-size-fits-all tool into a tool intertwined with the underlying health of the bodies in which they do their work — may add some bend in the arc to public health justice.

Note

The author has no conflicts to disclose.

References

1. B. Gates, “Responding to Covid-19 — A Once-in-a-Century Pandemic?” *NEJM* 32 (2020): 1677-1679.
2. A.D. Usher, “A Beautiful Idea: How COVAX Has Fallen Short,” *Lancet* 397 (2021): 2322-2325; S. Berkley, “COVAX: More Than a Beautiful Idea,” *Lancet* 398 (2021): 388; “COVAX: Key Learnings for Future Pandemic Preparedness and Response” (2024), available at <<https://www.who.int/publications/m/item/covax--key-learnings-for-future-pandemic-preparedness-and-response>> (last visited June 4, 2024).
3. T. Jesudason, “COVAX Officially Closes,” *Lancet Infectious Diseases* 24 (2024): e223.
4. S.H.E. Harmon, K. Kholina, and J. E. Graham, “Vaccine Procurement: The Changes Needed to Close Access Gaps and Achieve Health Equity in Routine and Pandemic Settings,” *Journal of Law, Medicine & Ethics* 52, no. 2 (2024): 465-477.
5. M.R. Reich, “Essential Drugs: Economics and Politics in International Health,” *Health Policy* 8 (1987): 39-57; J.A. Greene, “Making Medicines Essential: The Emergent Centrality of Pharmaceuticals in Global Health,” *BioSocieties* 6 (2011): 10-33.
6. M. Cueto, T.M. Brown, and E. Fee, *The World Health Organization: A History* (Cambridge: Cambridge University Press, 2019).
7. World Health Organization, *The Work of WHO, 1951. Annual Report of the Director-General to the World Health Assembly and to the United Nations*. (Geneva, 1952): 1-2.
8. See Cueto et al., supra note 6; A.E. Birn, “Gates’s Grandest Challenge: Transcending Technology as Public Health Ideology,” *Lancet* 366 (2005): 514-9.
9. World Health Organization, *Constitution of the World Health Organization*, World Health Organization, 1946.
10. World Health Organization, Regional Office for Europe, *Declaration of Alma-Ata*, World Health Organization, 1978.
11. M. Cueto, “The Origins of Primary Health Care and Selective Primary Health Care,” *AJPH* 94 (2004): 1864-1874.
12. H.M. Marks, “The Kendrick-Eldering-Frost Pertussis Vaccine Field Trial,” *Journal of the Royal Society of Medicine* 100 (2007): 242-247.
13. World Health Organization, “The Selection of Essential Drugs,” WHO Technical Report Series No. 615, World Health Organization, 1977.
14. E. Conis, *Vaccine Nation: America’s Changing Relationship with Immunization* (University of Chicago Press, 2015); S. Bhattacharya, “Reflections on the Eradication of Smallpox,” *Lancet* 375 (2010): 1602-1603.
15. A.J. Shattock et al., “Contribution of Vaccination to Improved Survival and Health: Modelling 50 years of the Expanded Programme on Immunization,” *Lancet* 403 (2024): P2307-10441.
16. This section draws from E.A. Harrison, *Indicating Health* (Doctoral Dissertation, Harvard University, 2017); E.A. Harrison, “What About the People: Bringing Health to the New Economic Development, 1961-1963,” paper presented at the Joint Atlantic Seminar in the History of Medicine, Columbia University, New York, 2011.
17. D. Arnold, *Everyday Technology: Machines and the Making of India’s Modernity* (University of Chicago, 2013); D. Engerman, “Development Politics and the Cold War,” *Diplomatic History* 41 (2017).

18. P. Cruickshank, *The Teleology of Care: Reinventing International Health, 1968-1989*, Ph.D. dissertation, Harvard University (2011).
19. M. Strathern, *Audit Cultures: Anthropological Studies in Accountability, Ethics and the Academy* (Routledge, 2000); D. Sanders and A. Haines, "Implementation Research Is Needed to Achieve International Health Goals," *PLoS Med* 3 (2006); S.E. Merry, "Measuring the World: Indicators, Human Rights, and Global Governance," *Current Anthropology* 52 (2011): S83-S95; P.H. Rossi, "Testing for Success and Failure in Social Action," in P.H. Rossi and W. Williams, eds., *Evaluating Social Programs: Theory, Practice and Politics* (Seminar Press, 1972).
20. H. Morefield, *Developing to Scale: Appropriate Technology and the Invention of Global Health* (University of Chicago Press, 2024).
21. H.C. Meissner, N. Nair, and S. Plotkin, "The National Vaccine Injury Compensation Program: Striking a Balance Between Individual Rights and Community Benefit," *JAMA* 321 (2019): 343-344.
22. P. Offit, *The Cutter Incident: How America's First Polio Vaccine Led to the Growing Vaccine Crisis* (Yale University Press, 2005): 182-183.
23. Anonymous, "Immunization is a Key Step Toward Overcoming Poverty," *Bulletin of the World Health Organization* 78 (2000): 144.
24. L.J. Frost and M.R. Reich, *Access: How Do Good Health Technologies Get to Poor People in Poor Countries?* (Harvard Center for Population and Development Studies, 2008).
25. S. Falahi and A. Kenarkoohi, "Host Factors and Vaccine Efficacy: Implications for COVID 19 Vaccines," *Journal of Medical Virology* 94 (2022):1330-1335; Q. Xu, H. Wei, S. Wen et al., "Factors Affecting the Immunogenicity of Influenza Vaccines in Human," *BMC Infectious Diseases* 23 (2023): 211; A. A. Madison, M. R. ShROUT, M.E. Renna, and J. K. Kiecolt-Glaser, "Psychological and Behavioral Predictors of Vaccine Efficacy: Considerations for COVID-19," *Perspectives on Psychological Science* 16 (2021): 191-203; P. Zimmermann and N. Curtis, "Factors That Influence the Immune Response to Vaccination," *Clinical Microbiology Reviews* 32 (2019); S. Dhakal and S.L. Klein, "Host Factors Impact Vaccine Efficacy: Implications for Seasonal and Universal Influenza Vaccine Programs," *Journal of Virology* 93 (2019): e00797-e819; E.P.K. Parker, S. Ramani, B.A. Lopman, et al., "Causes of Impaired Oral Vaccine Efficacy in Developing Countries," *Future Microbiology* 13 (2018): 97-118.
26. A. M. Brandt and M. Gardner, "Antagonism and Accommodation: Interpreting the Relationship Between Public Health and Medicine in the United States During the 20th Century," *American Journal of Public Health* 90 (2000): 707-715.
27. O.P. Ottersen, J. Frenk, and R. Horton, "The Lancet-University of Oslo Commission on Global Governance for Health, in collaboration with the Harvard Global Health Institute," *Lancet* 378 (2011): 1612-1613.
28. Q.S. Crouse and S. Kumar, "Health Inequalities and Infectious Disease Epidemics: A Challenge for Global Health Security," *Biosecurity and Bioterrorism* 12 (2014): 263-273; A. Donkin, P. Goldblatt, J. Allen, V. Nathanson, and M. Marmot, "Global Action on the Social Determinants of Health," *BMJ Global Health* 3 (2018): e000603.
29. A. Murrey and P. Daley, *Learning Disobedience: Decolonizing Development Studies* (Pluto Press, 2023).
30. Y. Wilson, "Is Trust Enough? Anti-Black Racism and the Perception of Black Vaccine 'Hesitancy,'" *Hastings Center Report* 52 (2022): S12-S17; M. Greenwood and N. MacDonald, "Vaccine Mistrust: A Legacy of Colonialism," in M. Greenwood, S. de Leeuw, R. Stout, R. Larstone, J. Sutherland, eds., *Introduction to Determinants of First Nations, Inuit, and Métis Peoples' Health in Canada* (CSP Books, 2022).