



The World Health Organization and the Struggle to Coordinate Global Health Research

George Weisz¹

Accepted: 26 May 2025
© The Author(s) 2025

Abstract As part of its mandate as the normative authority over Global Health, the World Health Organization is responsible for research to improve health worldwide. Since the 1970s, the organization has sought to find ways to promote scientific collaboration and coordination among actors who fund and do research. It has been hampered in this task by its own institutional weaknesses, fragmentation of the huge medical research field and, since the 1990s, the appearance of major funders like the World Bank and Bill and Melinda Gates Foundation, with far greater resources and different understandings of coordination and research priorities. With each passing decade, research has become increasingly visible and central to global health activity, bringing with it pressure to expand research funding and impose greater order and direction on the Global Health research enterprise. Such pressures come from different directions, including large donors like national research agencies in the US and UK and private philanthropies like the Gates Foundation, who defend donor autonomy, as well as organizations and advocacy groups advocating for legally binding international regulations and public funding of research. Such divisions led from 2012 to 2016 to a failed effort to create an international research funding mechanism independent of the patent system. More recently, they have led to negotiations for a binding Pandemic Treaty, one of whose main goals is equitable access to the products of global health research.

Keywords Global Health research · World Health Organization · Bill and Melinda Gates Foundation · Pharmaceutical product development · Pandemic treaty · Product development partnerships

✉ George Weisz
george.weisz@mcgill.ca

¹ Cotton-Hannah Chair in the History of Medicine, Department of Social Studies of Medicine, McGill University, Montreal, Canada

Introduction

The World Health Organization (WHO) has since its creation in 1948 held normative authority over International/Global Health (GH). While there are many definitions of GH, none is universally accepted (Salm, Mahima, Mairead and Conrad 2021). Nor do they accurately represent work published in the field (Abdalla et al. 2020: 6). Therefore, we define it here simply and pragmatically as the collection of institutions and groups whose stated aim is to prevent or control epidemic diseases and improve health and health-systems primarily in Low-and -Middle-Income Countries (LMIC). Scientific research in support of GH was from early in its existence a significant part the WHO's far-reaching mandate. Its activities, we shall see, have included basic and applied science, product development, and policy-management and planning. Nonetheless, while there have been a handful of publications dealing with the scientific work of individual departments (e.g. Daar et al. 2008; Käser et al. 2016) or specific research activities (e.g. Kelly et al. 2022; Palkonyay and Fatima 2016; Milstien et al. 2016), these loom small in comparison with the torrent of reports and publications produced by the WHO over the years. Consequently, we know little about the organization's research work over the course of its existence. One likely reason is that it has been overshadowed by more dramatic facets of its broad mandate. This might explain why recent histories of the institution or of GH say little about it (e.g. Chorev 2012; Packard 2016; Cueto et al. 2019).

This article thus aims to fill a major gap in the literature by examining the WHO's efforts over the past 75 years to coordinate and shape the research activities associated with an evolving and increasingly crowded GH field. Our central argument is that the organization's efforts to assert its leadership role in GH research have been fraught with difficulties. Early on, it was a small organization with limited resources exercising influence over a tiny domain. But as GH has become crowded with actors, far wealthier organizations, like the World Bank and the Bill and Melinda Gates Foundation (BMGF), have appeared. These have promoted their own forms of coordination and have forcefully transformed the research terrain in ways that do not necessarily correspond to the objectives of the WHO.

The major justification for the WHO's claims has been the normative authority it has been granted by the United Nations over GH. Article 19 of the WHO constitution provides the World Health Assembly with the authority to adopt international conventions or agreement by a two-thirds vote "with respect to any matter within the competence of the Organization." This area of competence is not defined, and member nations can refuse to accept the convention. Article 21 is more detailed about its authority to adopt regulations concerning the prevention of the international spread of disease, nomenclature, international standards for diagnostic procedures and biological or pharmaceutical products, as well their advertising and labelling. Member states can also reject these. Article 23 gives the Health Assembly the authority to make "recommendations to member states "with respect to any matter within the competence of the organization" (WHO

1958: 463-464). This vagueness also applies to mechanisms for assuring this authority. This has meant in practice that the WHO exercises whatever authority that member states, other international agencies, and powerful private actors have been willing to grant it (e.g. Harman and Papamichall 2025 and see below). While some legal scholars have suggested that international law provides considerable scope for exercising this normative authority (e.g. Gostin 2007), the WHO has been reluctant to utilize international law or legally binding treaties and conventions, with only three exceptions -- the Framework Convention on Tobacco Control in 2003, the International Health Regulations in 2005, and current discussions around a Pandemic Convention. It has normally relied on non-binding “soft power” to fulfill its role (e.g. Gostin, Oliveira, Karim, et al. 2024; Prah 2024; Meier and Finch 2024).

The WHO’s efforts to assert itself have been impeded by chronic lack of funds, disagreements among member states, and the arrival of numerous advocacy groups and institutions representing varied and often conflicting economic and institutional interests. But also underlying these interactions, we suggest, lie several other factors to be discussed in the account that follows. The first, as mentioned above, is disagreement about the use of legally binding instruments. A second, has to do with the difficulty of pursuing long-term coordination when emergencies like pandemics regularly erupt and monopolize the agenda (see below). The third, and perhaps most consequential is the fundamental disagreement between two broad visions. One seeks technical solutions to specific issues within existing socio-political parameters and yielding quick, measurable results. The second is more visionary, focuses on what are perceived as complex core issues, and seeks long-term and sometimes radical change. These approaches are not mutually exclusive. But disagreements remain real and profound and appear regularly in the GH literature.

GH actors and scholars have used different terms to discuss these approaches. One classic polarity is “vertical” versus “horizontal”. The first refers to top-down and time-limited interventions addressing a particular disease or condition by using specific technologies and normally directed by wealthy nations (e.g. global small-pox eradication). The second applies to interventions delivered through local health services, frequently with wider goals including social change, and as part of long-term processes influenced by the input of local populations (e.g. Oliveira-Cruz et al. 2003; Mills 2005)). The iconic manifestation of these approaches is the debate during the 1980s between proponents of Primary Health Care and Selective Primary Health care (Packard 2016; Cueto et al. 2019). The former provided a vision for service integration, local power, and universal care achieved through long-term processes (Rifkin and Walt 1986); the latter argued for, in the short term at least, targeted programs based on cost-benefit considerations and the availability of appropriate technology (Walsh and Warren 1979). This argument was replayed and updated in debates around the World Bank’s *World Development Report* of 1993 (e.g. World Bank 1993; Paalman, Bekedam, Hawken and Nyheim 1998; Musgrove 2000). Variant terms for this polarity exist, equity versus efficiency (Asamani, Alugsi, Hamza, and Nabyonga-Orem 2021) and biomedical versus social medicine (Borowy 2014), for instance.

While the different polarities do not necessarily map cleanly one to another, they tend to be associated. While it is an exaggeration to claim that GH is polarized into two camps, it is fair to say that it is divided by differing approaches and values that seems remarkably stable. In this paper, we will for convenience, refer to them as the technocratic-vertical approach and the political-horizontal approach. Rather than strict dichotomies, these terms form spectrums, with actors and institutions navigating along each. There is thus considerable variation of views on each side, as well as strong pressures for compromise. Disagreements, we shall see, are characterized by major imbalances of resources and power between the two sides of these spectrums, largely in favor of those on the “technocratic-vertical” side where most resources have been located. The WHO, despite its purported normative authority, must continually find its own balance between them. This paper examines for the first time how these well-studied forces have played out in the field of research. It provides a strategic lens through which to examine empirically the *long durée* trajectory of the GH research enterprise as well as the organization’s place within the GH ecosystem.

A word about methodology. In this paper, we use the standard tools of the historian – collecting as many sources as we can find in databases like IRIS, Scopus, PubMed, Google Scholar (using as many search terms as we can think of), works citing these sources, and the references listed in bibliographies and endnotes. Interviews with 5 actors who played key roles in these events have provided background information, corrected minor inaccuracies, commented on specific arguments and suggested directions to take. Informants are cited in the few cases where they offered insights that were included in our narrative. As historians, we do not claim any “scientific” status for the way we have read or mined our sources. We have rather sought to produce an empirically based historical narrative synthesis based on close reading of cited sources.

Coordinating Health Research

Like its interwar predecessor, the League of Nations Health Organization (Borowy 2009), the WHO has, from the beginning, included research as part of its mandate. However, research is mentioned only twice and briefly in the WHO constitution (WHO 1958: 459-472). An early report admitted that research was not at first taken seriously in the organization but that its disease control programs created the need for more scientific knowledge (WHO Executive Board 1958). In 1958, following a proposal by the US delegation (which eventually supplied funding), the World Health Assembly (WHA) passed a resolution requesting the Director-General to arrange for a study of the role of the WHO in stimulating and “coordinating” research (WHO 1964). After two meetings it was concluded: “WHO has an important part to play in, and a great responsibility for, the development and dissemination of scientific knowledge on a world basis. In this it supplants national organizations and philanthropic institutions” (WHO Executive Board 1958: 5).

The 12th WHA in 1959, approved a plan of intensified research, with the promise of American funding. That year, an Advisory Committee on Medical (later Health) Research made up of scientific experts was created to advise the Director-General,

review the work of scientific groups working on WHO projects, and issue recommendations on planning and support (WHO 1964). In the following years, the research activity of the organization expanded (WHO 1969). In 1965, WHO established a specialized cancer research center in Lyon France (WHO 2010) and considered creating a World Health Research Center. Instead, a considerably less expensive unit for health services research was established in 1969 (WHO 1969).

During the 1970s, research continued to expand, reflecting developments in other domains and jurisdictions. The United Nations experienced a largely ineffective movement to increase research to aid in the economic development of lower-income countries (Borowy 2018). More successfully, in 1971 an international alliance was established to coordinate research that would increase food supplies and improve their distribution. At its center was a collection of research institutes under the oversight of the Consultative Group for International Agricultural Research (CGIAR) founded as a global partnership with support from the Rockefeller Foundation (Ruttan 1986; Ozgediz 2012). Due to its reputed successes, it would serve repeatedly as a potential model for international health research, as we shall see.

This emphasis on research also affected the WHO. During this decade, all its regional offices established regional advisory committees on research, joining the Pan American Health Organization (PAHO), the regional office of WHO in the Americas, which had created such a committee in 1962. The WHO's Geneva office established two new programs. The Special Program for Research, Development and Research Training in Human Reproduction, founded in 1972, was devoted to finding new or improved methods of fertility regulation (Kessler and Standley 1976; Diczfalusy 1986). Reflecting a new spirit of collaboration among international agencies, the Special Program for Research and Training in Tropical Diseases (TDR) was established in 1974 to produce cures for some major tropical diseases, under the sponsorship of the WHO, the United Nations Development Program (UNDP), and the World Bank. (Litsios and WHO 2008). Tropical diseases were for a time in vogue as decolonization revealed the extent of the problem in many new member nations of the WHO, while innovations in molecular biology suggested ways of controlling these diseases. The Rockefeller Foundation in 1978 engaged the biologist Kenneth Warren to create its Great Neglected Diseases of Mankind Program designed to apply new advances in molecular biology to parasitic tropical diseases (Keating 2014).

The goal of these programs was to mobilize research to combat diseases in low-income countries, research that primarily took place in high-income countries where resources and expertise were located. Indeed, many of TDR's most successful products involved collaboration with pharmaceutical companies and the American military (Maurice and Pearce 1987). But by the 1970s, pressure to develop research capacity in LMIC had intensified. The objective was to allow developing countries to produce and utilize their own science and technology and thus pursue their own agendas. This approach was particularly influential at the WHO, which was developing its Primary Health Care (PHC) Program built around the idea of local community action and that would be introduced to the world at the celebrated Alma Ata Conference of 1978. WHO's Health Services Research Unit, which would continue to exist under a variety of different names and configurations, offered aid to LMIC to

develop research capacity. TDR, for its part, devoted 20-25% of its annual budget to capacity building in LMIC (TDR 1988: 50).

This activity involved increased collaboration with other institutions and some degree of project coordination. But a small, modestly funded institution like the WHO, responsible for numerous other activities was not in position to make much of an impact on the large, fragmented world of medical research. A series of World Health Assembly (WHA) resolutions from 1970 on called on the WHO to expand and clarify its research functions and to take a more active role in coordinating and setting priorities for research internationally (WHA 1972).

Towards Intensified Global Health Research

During the late 1980s and 1990s, concern for the coordinating role of the WHO intensified. One factor was crisis at the WHO, accused of inefficiency and politicization. Another was the arrival of new institutions on the scene. The most important was the World Bank which became the largest funder of international health during the 1990s (Brown et al. 2006) and which usually landed on the technocratic-vertical side of the policy spectrum. In 1985 an independent group of scientists and donors convened to discuss the future of tropical disease research which faced the loss of time-limited World Bank funding. Inspired (like WHO-TDR) by the success of CGIAR in increasing food supplies, participants were invited to consider whether this model might produce “cheap, effective and simple health technologies needed by countries of the South” (CHRD 1990:4). Attendees, however, chose to abandon this expensive option and to create instead an independent Commission on Health Research for Development (CHRD) to consider how research, defined broadly, could improve health in the Global South.

The Commission, which began work in 1987, was part of a wider reassessment of development that led to the Brandt Report on International Development Issues (Brandt 1980) and the Brundtland Report on Sustainable Development of 1987 (United Nations 1987; Borowy 2013). Viewed as an opportunity to advance the professional interests of scientists in tropical disease (Cook 1988: 464), it also represented the broad alliances that were coalescing around health research. Its formation was announced with fanfare in *The Lancet*. Its sources of financial support included most major philanthropic, multilateral, and bilateral institutions involved in international health, although not, significantly, the embattled WHO. Only the WHO’s TDR – an independent and somewhat idiosyncratic unit within the organization thanks to financial support from the World Bank and the UNDP – was well represented among commission members (Weisz and Tousignant 2019: 381-382).

The commission’s final report, released in 1990, argued forcefully that research was fundamental for improving health and critical to economic development (CHRD 1990). It broadened the focus beyond the potential products of research to also encompass the fair distribution of resources, research capacity, and agenda-setting power. Just as the UNDP’s first Human Development Report, published the same year, emphasized “growing inequities between the rich and poor,” the CHRD found: “a gross mismatch between the burden of illness, which

is overwhelmingly in the Third World, and investment in health research, which is overwhelmingly focused on the health problems of industrialized countries” (Ibid, 17). The report recommended earmarking a minimum of two and five per cent of national and development agency health budgets respectively for research and intensifying advocacy for further financial support. To increase funding, the CHRD saw potential in private sources, including philanthropic foundations.

The cornerstone of a proposed strategy was a model called Essential National Health Research (ENHR). This involved setting up a minimum research base that would allow each country, no matter how poor, to “understand its own problems and to enhance the impact of limited resources” (Ibid, 85). While biomedical and clinical research needed development in LMIC, the reports emphasized the need to improve and expand “epidemiology, the policy and social sciences, and management research” (Ibid, 17). Finally, it underlined the necessity for international research collaboration through “a pluralistic, worldwide health research system that will nurture productive national scientific groups linked together in transnational networks” (ibid, xviii). To achieve this aim, “an international mechanism should be established to monitor progress and to promote financial and technical support for research on health problems of developing countries” (ibid, xix). The WHO had little to do with the commission, but its own World Health Assembly of 1990 devoted its technical discussion to health research and came to similar conclusions about the need to expand research but under the direction of WHO (Davies and Mansourian 1992).

An immediate effect of the CHRD report was the creation in 1993 of the Council on Health Research for Development or COHRED (2024) to assist low- and middle-income countries to set up Essential National Health Research Systems. The WHO declined to be associated with COHRED and did not recognize it until 1997 (WHO Executive Board 1998). Meanwhile, amid attempts to reform itself, the WHO began collaborating more closely with the World Bank. It signed on as collaborator to the bank’s *World Development Report* (WDR93), of 1993, whose chief author, Dean Jamison, was an economist at UCLA. WDR93 argued for increased spending on health by governments and the private sector. Its most original point, promoting a cost-benefit approach to priority choices, was not new but was made more plausible by the invention of a new standardized epidemiological metric, the DALY, produced by the team that went on to create the Global Burden of Disease Project (World Bank 1993). This approach was controversial and led, as mentioned above, to an updated variant of the Primary and Selective primary debate of the 1980s. Nonetheless, this version of the technocratic-vertical approach appeared convincing to many during the 1990s as a form of evidence-based policymaking.

Currently, WDR93 argued, international funding for health research was inadequate, badly aligned with needs, and poorly coordinated. The solution was a new international body to coordinate research. One model for such an agency was CGIAR. But to many, this model was too expensive and insufficiently cost-effective. (Aldhouse 1993). Whatever the coordinating mechanism, the report argued, research needed to be better aligned with the burden of disease as defined by DALYs. This meant altering the research agenda so that less funding went to high-prestige biomedical research and more to policy relevant disciplines (Ibid).

Soon after, the WHO sought to apply the WDR93 approach directly to research. Ignoring its own departments and committees, it formed an Ad Hoc Committee chaired by Jamison that published its report in 1996 (Ad hoc Committee on Health Research 1996). Highly critical of the existing GH research system, the report advocated for the priority-setting methodology advanced by WDR93 and emphasized the need for greater involvement of the private sector. Fragmentation and lack of coordination among funders and researchers was seen as a fundamental weakness. The experiences of CGIAR as a successful forum for donor cooperation were discussed at length in Annex 3 of the report. Although there were aspects of CGIAR thought applicable to a coordinating body for health-research, this model was rejected as too expensive. The report also rebuffed the idea of a central decision-making body as the chief mechanism for such coordination (*ibid.*, xvi). It proposed instead the creation of two new organizations: one to develop health policy and systems research and another to monitor and promote collaboration in health research more generally.

Despite vigorous opposition from the WHO's Advisory Committee on Health Research (Weisz and Tousignant 2019: 393-394), this approach was largely accepted by the newly installed leadership of the WHO, led by Gro Harlem Brundtland, which brought many of those involved in WDR93 and the Ad Hoc Committee into the organization. In 1998-99, two new organizations independent of the WHO came into existence, joining COHRED. The Global Forum for Health Research (GFHR) received major financial support from the World Bank and did not seek to compete with the WHO or become a decision-making institution; its mandate was to advocate for and monitor research and its funding, to identify research gaps that needed to be filled, and to bring together researchers and donors at its annual meetings. The Alliance for Health Policy and Systems Research (AHPSR) was tasked with promoting new research field to place GH policy on a more rigorous evidentiary footing. Both were mandated to advance research, now justified by a new concept borrowed from economic theory and recently taken up by the development community: "global public goods". These were things that benefitted everyone (e.g. climate stability, pandemic prevention) and that should be funded collectively (Kaul, Grunbert, and Stern 1999). Research for better health was framed as such a public good (Chen, Evans, and Cash 1999)

The WHO worked continuously and increasingly closely with the AHPSR and collaborated occasionally with COHRED and GFHR. Never well-funded, the latter two organizations eventually disappeared. In 2011, GFHR was incorporated into COHRED and several years later vanished. After 2006, COHRED lost much of its core funding and became dependent on competitive contracts. In early 2024, its definitive closure was announced. The AHPSR in contrast, became closely integrated with WHO. How exactly did this reconfiguration occur and why?

The New Institutional Landscape

The simple answer to this question is that GH research was dramatically transformed in the 1990s and first years of the 21st century. While the differences between the old International Health and its new incarnation GH are frequently

overstated (e.g. Peters 2017; Bozorgmehr 2010; Yiu et al. 2020; Horner 2020), change, particularly with respect to research, went well beyond branding. Driven by large donors, research collaborations still focused largely on specific diseases from a predominantly biomedical perspective but were now organized in large and complex partnerships among States, national agencies, international organizations, philanthropies, and private enterprise. Among the new players was the Bill and Melinda Gates Foundation (BMGF) which brought the superstar status of Bill Gates to GH, as well as funding on an unprecedented scale – an endowment worth over \$43 billion and distributing nearly \$4 billion annually (Levich 2015). The BMGF also developed considerable competence in building networks of allies to provide further support and funding (de Bengy Puyvallée, Storeng, and Rushton 2025). The foundation added its considerable weight to the technocratic-vertical wing of GH, hardly surprising given Gates' business background and his declared admiration for WDR93. The BMGF has been widely criticized for lack of accountability, focus on short-term technological solutions, and negative effects on other GH actors (e.g. Birn 2005; McCoy et al. 2009; Harman 2016). But however one judges its work, the impact of BMGF has been substantial, particularly in the field of research, as we shall see.

Under these new conditions, the push for coordination manifested in the creation of giant coalitions devoted to finding cost-effective solutions to specific problems. Several of the new institutions that were created had comparatively huge budgets. GAVI-the Vaccine Alliance established in 2000 was by 2010 spending a little over 3 billion dollars annually. The Global Fund to Fight Aids, Tuberculosis and Malaria founded two years later was soon spending 4 billion dollars annually. In contrast to these massive partnerships, COHRED, over its entire history, had an annual budget, donated mainly by agencies in high-income countries, of between 1.5 and 2 million \$US until 2009 when budgetary decline set in (COHRED annual reports 1995-2015). GFHR had an average annual yearly budget of about 3.5 million US\$, of which 45% was provided by the World Bank (Independent Evaluation Group 2009: 122).

These large new organizations had little interest in collaborating with their tiny counterparts or in supporting them financially. This point was made by several critical external evaluations of GFHR, which perhaps unfairly placed much of the blame on lack of initiative within the organization. (Independent Evaluation Group 2009: xx, 33). A case in point was the failure of its Initiative on Public-Private Partnerships for Health established in 2000 and terminated in 2005 due to lack of donor support (WHA 2012: 91). In the end, given its limited mandate and funding, the GFHR never became the coordinating mechanism that many had dreamed of. An evaluation by the World Bank put this clearly:

In 2000 Bank staff thought that the Global Forum would increasingly assume the role of raising money, channeling funding to high priority activities, and coordinating health research generally. While this may not have been a very realistic vision, the HNP Sector Board expected that the Bank would exit from separate international health R&D grants over time and channel its health R&D funding through an arrangement analogous to the CGIAR (Independent Evaluation Group 2009: 7)

Making matters worse, one of GFHR's chief missions was collecting and disseminating information about research funding. The task was almost impossible because there were few mechanisms for the collection of comprehensive information and no uniformity in their classification and analysis. While GFHR made major improvements, its monitoring statistics remained incomplete. In 2007, the BMGF funded a new project, G-Finder, to track annual investments in R&D for new products and technologies aimed at "neglected diseases", defined as not commercially viable because of the limited potential of affected markets. While initially based on estimates not much better than those of GFHR, G-Finder was free of the funding issues faced by the older organization. In the same year, BMGF transformed an informal working group, formed in 2001, into a formal coalition, the Global Health and Technologies Coalition to develop and promote policy to support R&D (Chmiola 2016). Both new organizations pursued tasks that were to some degree part of the mission of GFHR. In 2007 as well, Bill Gates brought Chris Murray to Seattle to resuscitate the Global Burden of Disease Project as the Institute for Health Metrics and Evaluation (Smith 2015). The statistics produced by this well-funded institute competed directly with those of the WHO (Mahajan 2020).

COHRED faced a different set of problems. Never fully accepted by the WHO, COHRED's mission was compromised by the turn of GH donors toward project-based funding. This change – according to a recent digital letter sent out to announce COHRED's closing – prevented the organization from defining its own goals, focusing on its mission of strengthening national research systems, or competing effectively for funds.¹ Consequently, "neither of these mechanisms were able to fulfill the ambitions of the Commission on Health Research for Development] and the Ad Hoc Committee on Health Research regarding coordination of R&D" (WHA 2012: 91). Faced with what appeared to be considerable institutional overlap and duplication (Røttingen et al. 2009) and ignored by large donors, first GFHR then COHRED ceased operations.

New Directions

During the first decade of the 21st century, traditional goals – seeking greater funding for and more effective coordination of research – remained central. But new strategies also became increasingly common.

- 1) As in other domains, Public-Private Partnerships (PPP) became a key mechanism for increasing both funding and cooperation on specific health research problems (e.g. Reich 2002:2; Buse and Tanaka 2011).
- 2) Such partnerships were increasingly focussed on "product development" (PPD) for vaccines, therapies or diagnostics. BMGF was central to this development, providing, according to one study, nearly half the funding for the 14 PPDs work-

¹ COHRED / Council on Health Research for Development: Closure of Operations, 5 March 2024. Attachment to an email of 5 March 2024 from Carel IJsselmuiden, Executive Director COHRED

- ing on neglected diseases R&D in 2007 (Moran, Guzman, Ropers and Illmer 2010).
- 3) One beneficiary of this strategy was the field of tropical disease that had lost much of its funding by the end of the 1980s as HIV and malaria dominated the research agenda. In the first years of the 21st century it was rebranded as Neglected Tropical Diseases (NTD) and new institutions quickly sprang up, including the Drugs for Neglected Diseases Initiative in 2003, the WHO Department of Control of NTDs in 2005, and the Global Network for Neglected Tropical Diseases (2006) organized by the BMGF (Aya Pastrana, Beran, Somerville et al. 2020; Molyneux et al. 2021).
 - 4) Funding for specific projects as opposed to core institutional funding became generalized (Mazzucato 2018; Smith et al. 2024). This was the way that research funding agencies traditionally worked but it was taken up by other donors, notably GAVI and the Global Fund, possibly because achieving the health-related Millenium Development Goals – agreed to by United Nations members in 2000 – seemed to require targeted approaches whose short-term results could be easily monitored and measured. It also gave donors greater control over the use of funds and made it easier to claim achievements and transparency.

A second shift that occurred was the embrace of GH by universities and research institutions. In 1991, the International (later “Global”) Health and Medical Education Consortium was established (Velji 2011). In 2011, this was absorbed by the Consortium of Universities for Global Health (CUGH) that had been formed in 2008 “to provide a venue for North American universities to promote, facilitate, and enhance the growth of global health as an academic discipline” (Merson and Page 2009: 6). Although what were called “global health programs” were highly diverse (and sometimes minimal), their number more than quadrupled between 2003 and 2009 (Kerry, Ndung’u, Walensky et al 2011:1). Several years later, approximately 250 North American universities were thought to provide some GH education offerings (Merson 2014:1677). As of May 2025, 198 institutions were members of or the organization (CUGH 2025). Growing university activity combined with increased funding has led to a major increase in GH journals; by 2012 there were by one count 29 journals in existence (Pang and Amul 2021: 370). The resulting upsurge in GH publications has been documented by a variety of scientometric studies (e.g. Wang et al. 2020; Weisz et al. 2017). The activities of universities have played a significant role in the development of GH (Cabane 2023). But its rapid expansion further increased fragmentation in research and complicated efforts to monitor and shape research and research funding. It has also led to sharp criticism of academic researchers for prioritizing their own interests while fostering academic dependency among LMIC (e.g. Crane 2013; Fouad 2018).

A third development was the WHO’s intensifying effort to revitalize its leadership role in health research. It organized a series of meetings with ever more important attendees. It took a leading organizing role in a major meeting on health research in Mexico City in 2004 that included ministers of health from many countries (WHO and Mexico 2005). Four years later, it organized another meeting in Bamako, Mali that included ministers of health *and* ministers of finance (WHO

Executive Board 2009). Both these latter meetings were built around WHO publications and reports. WHO Regional offices also eagerly accepted, at least in principle, the frameworks for research activity that emerged from these reports and meetings. PAHO, the regional office for the Americas, was especially active producing a strategy for research as early as 2009 (Advisory Committee on Health Research PAHO 2017; Etienne et al. 2018).

This left the WHO at the end of the first decade of the 21st century as an influential player in GH research. Its traditional support for strengthening local health systems became accepted in principle if not practice, as did its commitment to rigorous policy research. In 2006, AHPSR ended its formal association with the GFHR and became “hosted” by the new Health Systems and Services Cluster of the WHO. Nonetheless, the WHO was hardly the primary force in research. It was in many ways less influential than BMGF, which benefitted from far greater financial resources and powerful donor and government allies. While not publicly challenging the authority of the WHO, the BMGF used its superior resources to establish well-funded alternative institutions that moved GH research in directions that often differed from WHO priorities. (e.g. McCoy, Kembhavi, Patel and Luintel et al. 2009).

In 2010, the World Health Assembly (WHA) approved a comprehensive research strategy (WHO 2012). The major emphasis was on developing Health Policy and Systems Research (HPSR). Nonetheless, the WHO remained fully committed to biomedical research. In both cases, it sought to influence research by providing information, services, and ideas. (WHO 2012a). At the top of the list of recommendations was the strengthening of WHO’s own research culture so that the organization could lead by example. A second goal was to help identify research priorities and mobilize the research response through its power to convene governments, global bodies, and partners from all social sectors. It could support the development of national research systems in LMIC through advocacy, development of tools, guidelines, and standardized indicators of performance, as well as providing technical assistance and fostering regional and global collaboration networks. Finally, the organization hoped to develop a code of good research practice (WHO 2012a).

Radicalization

This soft approach was by the report’s publication, already under assault. The chief reproach was that GH research remained chaotic and inefficient.

Today’s R&D system is clearly not optimal: drug pipelines are not aligned with global health needs, prices for end-products are becoming ever more unaffordable, and inefficiency and declining rates of true innovations are becoming hallmarks of the R&D process (Regmi, Kaas-Hansen, and Iversen 2013: 4).

The global research system, it was charged, was failing to provide affordable technologies to poor nations, to correct market imbalances, or to prevent unnecessary duplication. Problems seemed especially acute because the economic crisis starting in 2008 put an end to a decade of expanded GH funding while money

devoted to research for neglected diseases was decreasing (WHO 2012b; Moran Guzman, Abela-Oversteegen et al. 2011). What was needed, critics argued, was a new approach to international research.

This search for new approaches was part of a wider concern to rationalize GH funding generally. In 2005, the Paris Declaration on Aid Effectiveness called for change based on 5 principles. Number 3 was for international donors to harmonize their funding with national development strategies whose primacy in agenda-setting was principle number 1 (OECD 2005). Two years later, the 8 major funding bodies (including WHO, the World Bank and BMGF) established the Health 8, an informal group of large donors seeking to realize the health-related Millennium Development Goals. That same year, the more formal International Health Partnership (IHP+) was created to promote collective action among donors and between donors and national health planners (The Lancet 2007). (To more easily follow these many developments, see Figure 1.) Legal scholar Lawrence Gostin proposed an ambitious framework convention to define terms of cooperation among countries and stakeholders to “set achievable goals for global health spending; define areas of cost-effective investment to meet basic survival needs; build sustainable health systems; and create incentives for scientific innovation for affordable vaccines and essential medicines” (Gostin 2007: 989). Scientific innovation, we see, was one key area meant to benefit from a framework convention.

The proposal for a comprehensive GH Convention did not get far. Among the reasons was the sheer difficulty of reaching agreement on so many issues from so

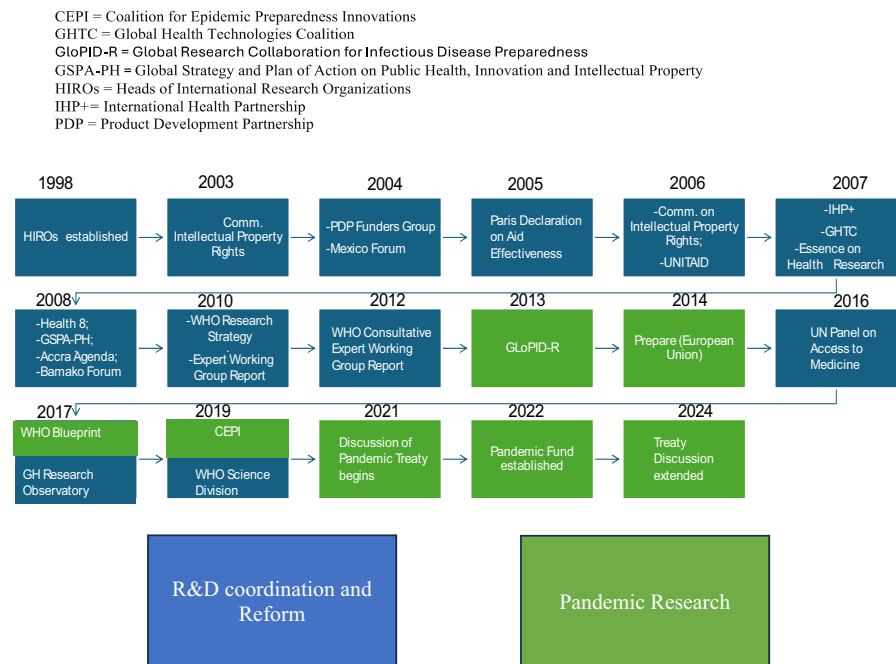


Figure 1 Events timeline

many countries with differing interests and ideologies, not to mention fierce opposition from the US and other nations fearful of losing sovereign powers to an international bureaucracy. The idea of a convention devoted to research was somewhat more acceptable because it was more limited in scope. Some critics of the comprehensive convention admitted that the strategy might work for research (Hoffman and Røttingen 2013). But, as we shall see below, the discussions within the WHO about a legally binding research convention also did not get far, confirming the view of critics that the organization was averse to using international law to pursue its goals (e.g. Velasquez 2022: 59-70).

The issue of donor collaboration for research while hardly new, now generated numerous commission reports, declarations and new institutions (Figure 1). There were two variants. The dominant one focussed on collaboration among donors while a second less developed alternative aimed at collaboration between global donors and local authorities. In the first case, major research funders in 1998 created a new alliance, Heads of International Research Organizations (HIROs), to coordinate research among themselves. By 2011, it was estimated that its member organizations provided about 75% of funding for research on neglected diseases but its workings and plans were opaque even to experts in global research financing (Viergever 2011; Viergever and Hendriks 2016). In 2004, BMGF was instrumental in establishing the informal PDP Funders Group to finance promising product development partnerships (Grace and Druce 2009; PDP Funders Group 2024). Three years later, the BMGF was the main funder of the Global Health Technologies Coalition, to monitor and advocate for R&D funding to create new products. (Grace, Pearson and Lazdins 2011). In 2008, a collaboration of the second type, Essence on Health Research, was formed by major donors “to align and harmonize their activities and procedures with the priorities of the countries in which they work” (Essence on Health Research 2014: 5). Significantly, it was located within the TDR unit of the WHO, reflecting the latter institution’s different approach to R&D.

These efforts at collaboration generally accepted the constraints of the TRIPs trade agreement that confirmed the continued primacy of the patent system for pharmaceuticals – with appropriate modifications possible during crises – perceived as the major incentive for research innovation. While market failures were recognized as a problem, solutions could not stray far from the existing intellectual property system. In 2006, the WHO Commission on Intellectual Property Rights published a report that documented the failures of the current system of drug development that left huge health needs unmet because developing countries lacked purchasing power to make drug development profitable. Nor was it working well in wealthier countries like the US where R&D spending had doubled from 1995 to 2002, while the registration of new products had declined as had their therapeutic significance (Commission on intellectual property rights 2006). The report made 60 recommendations that were not implemented. That same year, five national governments, led by that of France, established UNITAID with a primary mandate of supporting innovations dealing with HIV/AIDS, TB and malaria and affordable enough to be purchased by LMIC. Its most original feature was that it was largely financed by airline ticket taxes introduced in a handful of countries. The Accra Agenda for Action of 2008

took stock of progress made since the Paris Declaration on Aid and proposed using all the “flexibilities” of the TRIPs agreement (like mandatory local licensing) to lower prices for pharmaceutical innovations (OECD 2008). (While countries like India and Brazil were taking matters into their own hands by ignoring certain patents, this option was rarely discussed.)

By 2010 the call for collaboration was about more than increasing efficiency. It was for many in the Global South about changing a fundamentally unfair international system of pharmaceutical innovation. A report by the South Center (f.1995), an intergovernmental organization, representing “developing” countries, argued that WHO was in crisis because 80% of its budget was based on voluntary contributions for defined projects that constrained its actions and because it was reluctant to use its regulatory power to initiate international agreements. As a result:

Research and development (R&D) for pharmaceutical products has failed to deliver medicines for a large number of people, particularly those living in the developing countries. On the one hand, there is little investment in R&D for diseases prevalent in these countries, as large companies concentrate on the development of products that address demand in rich markets. On the other, products subject to patent and other modalities of exclusivity rights are normally commercialized at prices unaffordable to a large part of population (Velasquez and Seuba 2011: 8).

The report proposed not the usual creation of a large Public Private Partnership but rather a binding international treaty on pharmaceutical R&D under the auspices of WHO to “simultaneously and effectively promote innovation and access to medicines, particularly for diseases that affect developing countries” (Ibid, 9).

Recognition of the problem and proposed solutions were not new. The WHO Commission on Macroeconomics in 2001 had called for a new Global Health Research Fund, “akin to” CGIAR, disbursing around 1.5 billion US dollars annually (WHO 2001). The latter recommendation was not implemented. As an institution whose membership included the numerous countries of the Global South whose health problems were its chief concern, but which was financially dependent on a smaller group of wealthy nations, notably the US, its largest donor (with BMGF its second largest), the WHO treaded gingerly among conflicting demands for change. The WHO Commission on Intellectual Property, Innovation and Public Health in 2006 called for advocates of a medical R&D treaty to develop this idea so that governments and policymakers could make informed decisions about it (Comm on International Property Rights 2006:178). This was followed up by a series of expert groups which gradually moved from studying and parsing suggestions for change to proposing them (WHA 2008; WHA 2010). Few of their ideas made it into the WHO research strategy document of 2010 discussed above.

In that year, however, the WHO established the Consultative Expert Working Group (CEWG) to bring to fruition the work of these earlier commissions. It was chaired by John-Arne Røttingen, then a young professor at the University of Oslo

who would go on to lead several prestigious institutions and agencies.² The group's final report went well beyond the WHO's global strategy of two years before (WHO 2012b). Like earlier reports, it proposed that country governments devote more money to research, to be financed by an international tax chosen and administered by each country. This tax would fund a variety of "public goods" including health R&D relevant to developing countries. It proposed as well that the WHO create a Global Health Observatory to monitor research. Among its many other proposals, it recommended that 20 to 50 percent of all government funding be channeled through a pooled mechanism that would also have a coordination function. This mechanism should build on existing institutions and WHO should take a larger "convening and coordinating role in line with its normative mandate" (ibid, 92).

Finally, the CEWG proposed that nations negotiate an international convention on R&D funding that included a binding international mechanism to collect funds and plan coordinated research. This should be based on the principle that R&D was a global public good whose development costs needed to be delinked from the prices at which products were sold. This could be done through mechanisms like public investment, knowledge sharing, and "appropriate licensing arrangements". It was stressed that this was "complementary to the existing intellectual property regime in which patents currently constitute the main incentive for investment" where the current system did not function to meet the R&D needs of developing countries (Røttingen and Chamas 2012: 1). In the meantime, it was proposed that that countries take full advantage of "flexibilities" in the TRIPs trade agreement to get around high prices for critical therapies (Nicol and Owoye 2013). This was radical stuff that went against the determination of some nations, notably the US (Carter 2012), to fully control their research investments and protect their pharmaceutical industries which campaigned vigorously against the plan. The report also pushed against the strong ideological commitment of many funders to private enterprise as the source of innovation. In 2012, BMGF and JP Morgan Chase set up the Global Health Innovation Fund, a social impact investment fund that according to Bill Gates, focused on a 'double bottom line' of health outcomes and financial returns (Harris 2019; Erikson 2015).

The CEWG's proposals provoked much discussion (e.g. Moon, Bermudez, and 't Hoen 2012; Moran 2013). Given strong opposition, it was decided to work incrementally by first establishing a Global Health Research Observatory to monitor research spending. It was also decided to set up 6 demonstration projects operationalizing planned research. Other issues related to research coordination were left for further discussion (WHO Executive Board 2012). The WHO organized a series of consultations that lasted several years. Rather than deal with the entire reform package, consultations focused on the creation of 2 new additions, along with the Observatory, to the current research architecture: 1) an expert committee within the WHO to translate Observatory data into research priorities; 2) a new voluntary funding mechanism that disassociated the costs of research from the costs of finished products. Absent from these consultations was any serious discussion of a binding

² In private conversation, Røttingen suggested that he might have been chosen because in the earlier expert commissions, the Norwegian delegation of which he was a member was considered relatively neutral in the disagreements that had emerged.

international research convention. Arguments to the effect that such a convention was necessary because voluntary funds had in the past proven unable to attract sustainable donor backing (e.g. TWN 2016) had little impact.

The idea of a new coordinated funding mechanism was discussed at length, with a view to determining whether any existing structures could fulfill this role. While the answers were generally negative, the WHO's TDR unit was tasked with drawing up a proposal. In 2016 it came up with a plan for a fund distributing 100-million-dollar annually that it would administer (WHO 2017). In May of that year, however, an "open-ended meeting" of the organization failed to reach consensus on a course of action. The publication that same year of a United Nations report (United Nations 2016) that supported the reform views of the Consultative Expert Committee had little effect. A resolution at the World Health Assembly to "consider" holding another open-ended meeting to resolve differences failed to pass due to opposition from the US and Switzerland (TWN 2016). This was billed as a postponement, but it effectively put an end to discussions. One can reasonably attribute this decision to the opposition of the US government and the pharmaceutical industry. But that is only part of story.

One problem was that funds were scarce. The Observatory that everyone agreed was needed failed to attract expected funding and did not begin functioning until 2017. The 6 demonstration projects attracted only a fraction of expected funding and do not seem to have been successfully completed. One likely reason for this lack of funds was that other pressing issues had come to dominate the landscape and to overshadow R&D reform. Chief among these was the growing threat of pandemic diseases.

The Looming Threat of Pandemics

Even as discussions of R&D reform were going on, the WHO faced criticism for its inadequate response to local epidemics of Sars, Ebola, and Zika. Other institutions took matters into their own hands. In 2013, HIROs, the organization representing large research funding organizations, was instrumental in establishing an independent coordinating and information-sharing mechanism, the Global Research Collaboration for Infectious Disease Preparedness (GloPID-R) (Fig. 1). By 2016, it had 23 member organisations (Matthiessen et al. 2016). The European Union in 2014 established PREPARE (Platform for European Preparedness Against (Re-) emerging Epidemics). That same year, the WHO launched an emergency program to develop and test promising but unproven products for Ebola, focusing especially on portable diagnostic devices (Kelly et al. 2022). Two years later, the WHO announced its Global Action Plan on Antimicrobial Resistance to serve as a platform for new public-private partnerships to develop novel antimicrobial agents and diagnostics. In 2017, the organization established the WHO R&D Blueprint to coordinate its own and other stakeholders work on product-relevant R&D for diagnostics, therapeutics, and vaccines directed against infectious diseases with epidemic potential. It concentrated on nine existing diseases, including Ebola, Sars and Zika and one as yet unknown condition – Disease X (Kieny and P. Salama 2017; Mehand, Al -Shorbaji, Millett and Murgue 2018). In 2017, as well, a new public-private partnership, the Coalition for Epidemic Preparedness Innovations (CEPI) was launched at the World Economic Forum. Located within

the Norwegian Institute of Public Health, it focussed on preparing for the next emerging pandemic disease through vaccine development. It claimed five-year financial pledges totalling 640 million dollars mostly from the governments of Japan, Germany and Norway, the BMGF, and the Wellcome Trust (CEPI Report 2016-17). The WHO was not directly involved in its creation, but its R&D Blueprint provided a framework for research spending and it and CEPI signed a memorandum of understanding to this effect (Halabi et al. 2023). COVID intensified concern with pandemics and mobilized the international community to contribute a total of over 4 billion \$US by March 2024 (CEPI 2024). CEPI was a founding member of the Group that established COVAX, a fund to purchase and deliver COVID vaccines to LMIC (Storeng, Puyvallée and Stein 2023). Thus there appeared on the scene two more giant public-private partnership focussed on infectious disease R&D and seeking to reconcile humanitarian need with commercial considerations within the existing patent system.

The COVID experience overcame resistance to international treaties. In March of 2021, 25 heads of government and international agencies issued a public call for an international pandemic treaty to prepare a response framework for future outbreaks (WHO 2021). A few months later, the WHA voted to launch the process to develop the treaty and create a new funding mechanism under the direction of the WHO (2021b). In 2022, a new multilateral financing mechanism known as the Pandemic Fund was established at the World Bank to channel funding for pandemic preparedness (Michaud and Kates 2023). It was unclear how this new Fund was to relate to the proposed new funding mechanism being discussed as part of the pandemic treaty. By 2024, the fund had collected close to 2 billion dollars, with the US and the European Union its largest donors (Pandemic Fund 2024).

Meanwhile talks on a pandemic treaty continued to be conducted by an intergovernmental negotiating body. A series of drafts were prepared and revised but the process failed to reach agreement by its May 2024 target deadline. Negotiations were thus extended by a year. The proposed treaty is about much more than research. Tension between effective global action and national sovereignty has provoked disagreements on several issues (Jafarova 2024; Huang et al. 2024). But one that has proven to be a major stumbling block to agreement is directly related to access to the products of research. The COVID Pandemic showed how successful commercially based research that enjoys generous public funding can be in speedily developing new innovations and how ineffective it is in assuring the equitable distribution of these innovation (e.g. Lurie et al. 2021; Ramchandani et al. 2021). This has emboldened certain LMIC, particularly in Africa, to insist on measures loosening patent protections on vaccines and drugs to enable LMIC to manufacture their own. Equally contentious are demands that LMIC that provide prompt pathogen data should have automatic access to any products developed using this data, while vaccines and drugs developed with public funds should be shared equitably (Millard 2024; O'Neill 2024; Lenharo 2024). Such conditions are opposed by countries with strong pharmaceutical industries whose bottom lines and business models would be affected and by many in the GH world who believe that innovation would be negatively impacted. Even before the US announced it was leaving the WHO, it was not clear whether such disagreements could be overcome by the new deadline or whether even a successful negotiation could produce a truly effective agreement. At the time of writing, a compromise draft has been agreed to (thanks

to vague language on key issues) and approved for presentation to the WHA (Cullinan 2025; Reed 2025). Much remains to be worked out.

The Upshot

Amid all this activity, the WHO pretty much abandoned its efforts to transform the R&D system. In the midst of its pandemic preparation, it underwent an internal reorganization in 2019, creating a Science Division under the direction of a new chief scientist. This combined three existing departments and “hosted” three specialized research units, TDR, the Special Program in Human Reproduction and AHPSR. The division’s stated mission was “to provide global leadership in translating the latest in science, evidence, innovation, and digital solutions to improve health and health equity for all.” (WHO Science Division 2024). This involved keeping close watch over scientific developments, “setting a credible, relevant research agenda that reflects emerging country priorities” and translating research data into actionable innovation.

The blizzard of activity by the WHO and other organizations over the last 25 years (see Figure 1) has not dampened criticisms of the global research system. It is still claimed that R&D remains focused on diseases of wealthy countries rather than those of LMIC (Yegros-Yegros, Van de Klippe, Abad-Garcia and Rafols 2020). Little of this funding goes to scientists in LMIC. According to the Global Observatory on Health Research and Development (2023), low-income countries (mainly in the African region) in 2020 received only 0.2% of all health research grants (Ralaivody et al. 2020). It is charged that even where there is money for research, as in India, this research is mis-aligned with the actual burden of disease (Kumar, et al. 2024). The news of course is not all bad. Ferpozzi (2023) shows that several Product Development Partnerships have helped turned scientific interest in conditions like Chagas Disease into legitimate public health concerns. Vieira et al. (2023) found that a small but significant number of middle-income countries now engage in local pharmaceutical research. However, the most thorny and fundamental problems remain unresolved (e.g. Lexchin 2024)

In recent years, criticism is not just directed at what diseases are being researched but on who does, publishes, and benefits from research. Gonzalez-Alcaide, Menchi-Elanzi, Nacarapa, and Ramos-Rincón (2020) found that researchers from North America and Europe participated in 82% of the nearly 69,000 documents on HIV/AIDs published globally from 2010-2017 compared to only 22% for researchers in Africa and Asia. Furthermore, most of the latter research was concentrated in a few countries, most notably South Africa. Such results are confirmed in other bibliometric studies of GH literature. One found that among the 20 countries producing the highest number of publications, authors in LMIC produce about 20% of articles, with China, India, South Africa and Brazil responsible for 85% of the latter (Wang et al. 2020). As in other domains of GH, there are increasingly insistent demands for greater participation by researchers from LMIC in research projects and publications and for more equitable division of labor and benefits (e.g. Abimbola 2019; Bhaumaik and Jagnoor 2019). Somewhat less frequent but just as passionate are demands for gender equality (Global Health 50/50; Nassiri-Ansari and Rhule 2024)

Perhaps the most damning criticism comes from Tikki Pang, an insider who headed research policy at the WHO for 13 years. A co-authored article published in 2021 pointed to the uncontrolled growth of research, producing 29 GH journals and “sacrificing efficiency in the process”. Among the failures identified were “wide gaps and inequalities in global health R&D investment and the misalignment of research from the burden of disease”, the weaknesses of national health research systems in many LMIC, and the influence of the priorities of big pharma on public R&D funding (Pang and Amul 2021). Such criticism, and this is only one of many examples, testifies to the difficulties of transforming an enterprise as huge, fragmented, and ideologically and economically divisive as global-health R&D.

Conclusion

The accelerating number of commissions, reports, and new institutions around the coordination of R&D, challenging to follow even with a timeline chart, attests to the profound faith in science within the GH world and to an accelerating sense of urgency about perceived inadequacies in how research is carried out. While this activity has made the WHO more visible, added to its numerous responsibilities, and yielded some successes, it is not clear that it has expanded its leadership and coordination role in research to any significant degree. To this point, the drive for coordination has resulted mainly in a plethora of large donor-driven partnerships focused on specific illnesses or products and functioning very much in the spirit of the technocratic-vertical end of the strategy spectrum. The WHO participates by providing mainly technical guidance and services. This is not an accident. While current problems are often attributed to lack of coordination, the research architecture appears more like the result of active coordination by the largest donor countries and philanthropies. Whether it results from coordination or lack thereof, the current R&D system clearly has major weaknesses that are acknowledged by large donors who nonetheless resist transferring power to new “mechanisms” managed by the WHO. It remains to be seen how much of a change the new pandemic treaty will bring, given its focus on extreme events, the degree of compromise and terminological vagueness required for agreement, and a context dominated by the withdrawal of the US and its funding from the WHO.

The limits to the WHO’s ability to coordinate GH research ultimately stems from the disjunction between its moral authority as the normative agency for GH and the reality that its limited purse strings are controlled by other actors unwilling to relinquish autonomy and frequently holding different ideological and strategic commitments. This reality extends well beyond the research sphere and triggers the numerous criticisms and demands for reform that are aimed regularly at the organization (Moser and Bump 2022). Consequently, whatever the personal beliefs of its officials, the WHO usually relies on soft power, the only kind that does not raise the hackles of one or another member country. We spoke to several individuals who once held prominent positions at the WHO and who are now skeptical about pandemic or research treaties having concluded that the organization is most effective when it provides resources that everyone finds useful like the Clinical Trials Registry, the Global Observatory, and the International Classification of Disease. The discrepancy between the authority attached

to WHO's normative role and its financial weaknesses will be further tested if the US stays out of the organization for any length of time.

Beyond the conflicts among countries and industries pursuing their own economic or political interests, we have suggested, lie deeper disagreements. Most of the disputes described in this paper reflect basic approaches that can be traced back to debates of the 1970s and 1980s about comprehensive versus selective primary care and that permeate the entire GH enterprise. One side that we have characterized as technocratic-vertical sees itself as pragmatically functioning with maximum effectiveness within structural realities that can be stretched but not transformed. That side also controls most financial resources and largely determines the agenda. The other has a more expansive and explicitly political vision that aims at more profound social change but lacks the economic or the political resources to impose its views. Nonetheless, it represents too many countries and influential GH figures to be completely ignored, especially when their cooperation is essential for critical programs like pandemic security. Such fundamental and persistent disagreements are not easily resolved by negotiation, even on those rare occasions when compromise agreements are reached. The current narrow focus of R&D reform on combatting pandemics has added new urgency to the problems of GH research, but has produced little consensus about eventual solutions.

Funding The research for this paper was funded by Social Sciences and Humanities Research Council of Canada Grant # 435-2020-0578 and by Associated Medical Services of Toronto (annual grant associated with Cotton-Hannah Chair)

Declarations

Competing interests The author declare that they have no competing interests

Open Access This article is licensed under a Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License, which permits any non-commercial use, sharing, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if you modified the licensed material. You do not have permission under this licence to share adapted material derived from this article or parts of it. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit <http://creativecommons.org/licenses/by-nc-nd/4.0/>.

References

- Abimbola, Seye. 2019. The foreign gaze: Authorship in academic global health. *BMJ Global Health* 4(5): e002068.
- Abdalla, Salma M., Hiwote Solomon, Ludovic Trinquart, and Sandro Galea. 2020. What is considered as global health scholarship? A meta-knowledge analysis of global health journals and definitions. *BMJ Global Health* 5(10): e002884. <https://doi.org/10.1136/bmjgh-2020-002884>.
- Ad Hoc Committee on Health Research Relating to Future Intervention Options. 1996. (Document TDR/Gen/96.1). *Investing in health research and development*. (Geneva: World Health Organization). <https://iris.who.int/handle/10665/63024>

- Advisory Committee on Health Research, PAHO. 2017. *A review of its contributions to health and research for health in the Americas 2009-2015*. PAHO/KBR/17-006. Second Revised Edition. Washington, DC: Pan American Health Organization. <https://iris.paho.org/handle/10665.2/34007>
- Aldhous, Peter. 1993. World Bank report calls for network to bolster research. *Science* 261(5118): 155.
- Asamani, James Avoka, Samuel Anongiba Alugsi, Hamza Ismaila, and Juliet Nabyonga-Orem. 2021. Balancing equity and efficiency in the allocation of health resources-where is the middle ground? *Healthcare (Basel)*. <https://doi.org/10.3390/healthcare9101257>.
- Bhaumik, Soumyadeep, and Jagnoor Jagnoor. 2019. Diversity in the editorial boards of global health journals. *BMJ Global Health* 4(5): e001909. <https://gh.bmj.com/content/4/5/e001909>
- Birn, Anne-Emanuelle. 2005. Gates's grandest challenge: Transcending technology as public health ideology. *The Lancet* 366(9484): 514–519. <http://image.thelancet.com/extras/04art6429web.pdf>
- Borowy, Iris. 2009. *Coming to terms with world health: The League of Nations Health Organisation, 1921–1946*. Frankfurt am Main: Peter Lang.
- Borowy, Iris. 2013. *Defining sustainable development for our common future: A history of the World Commission on Environment and Development (Brundtland Commission)*. London: Routledge.
- Borowy, Iris. 2014. Shifting Between Biomedical and Social Medicine: International Health Organizations in the 20th Century. *History Compass* 12(6): 517–530. <https://doi.org/10.1111/hic3.12162>.
- Borowy, Iris. 2018. Science and Technology for Development in a Postcolonial World. Negotiations at the United Nations, 1960–1980. *NTM Zeitschrift für Geschichte der Wissenschaften, Technik und Medizin* 26: 31–62. <https://doi.org/10.1007/s00048-018-0185-z>.
- Brandt, Willy 1980. *North South: A programme for survival; Report of the Independent Commission on International Development Issues*. Cambridge, MA: MIT
- Bozorgmehr, Kayvan. 2010. Rethinking the 'global' in global health: a dialectic approach. *Globalization and Health* 6(1): 19. <https://doi.org/10.1186/1744-8603-6-19>.
- Brown, Theodore M., Marcos Cueto, and Elizabeth Fee. 2006. The World Health Organization and the transition from “international” to “global” public health. *American Journal of Public Health* 96(1): 62–72. <https://doi.org/10.2105/AJPH.2004.050831>
- Buse, Kent, and Sonja Tanaka. 2011. Global Public-Private Health Partnerships: lessons learned from ten years of experience and evaluation. *International Dental Journal* 61(Suppl. 2): 2–10. <https://doi.org/10.1111/j.1875-595X.2011.00034.x>.
- Cabane, Lydie. 2023. Shaping the global: Knowledge, experts, and US universities in the emergence of global health. *Globalizations* 20(3): 1–18. <https://doi.org/10.1080/14747731.2022.2082130>.
- Carter, Zachary D. 2012. Obama administration blocks global health fund to fight disease in developing countries. *Huffington Post*, May 25. 2012. https://www.huffpost.com/entry/global-health-fund-obama-administration_n_1544399. Accessed May 1, 2025.
- CEPI. Board of Directors Report. 2016-2017. https://static.cepi.net/downloads/2023-12/Board-of-Directors-report-Accounts-signed_Incl-Auditor-report_ALL-FINAL-2017.pdf. Accessed May 14 2023.
- CEPI 2024. https://static.cepi.net/downloads/2024-03/2024_03_18%20%20CEPI%20-%20Investors%20Overview.pdf. Accessed May 1 2025.
- Chen, Lincoln, Timothy G. Evans, and Robert Cash. 1999. Health as a global public good. In *Global public goods: international cooperation in the 21st century*, eds. Inge Kaul, Isabelle Grunberg, and Marc Stern, 284–304). Oxford: Oxford Univ. Press for the United Nations Development Programme. <https://doi.org/10.1093/0195130529.003.0014>
- Chorev, Nitsan. 2012. *The World Health Organization between North and South*. Ithaca, NY: Cornell University Press.
- CHRD, Commission on Health Research for Development. 1990. *Health research: Essential link to equity in development*. Oxford: Oxford University Press.
- COHRED 2024. <https://www.cohred.org/> accessed April 1 2024.
- COHRED annual reports.1995-2015. <https://www.cohred.org/publications/annual-reports/>. Accessed April 1, 2024.
- Commission on Intellectual Property Rights Innovation and Public Health. 2006. *Public health, innovation and intellectual property rights: Report of the Commission on Intellectual Property Rights, Innovation and Public Health*. Geneva: World Health Organization. <https://iris.who.int/handle/10665/43460>
- Cook, Joseph A. 1988. Tropical medicine and health in the developing world. *The American Journal of Tropical Medicine and Hygiene* 38(3): 459–465. <https://doi.org/10.4269/ajtmh.1988.38.459>.
- COHRED (Council on Health Research for Development). 2024. History of COHRED. <https://www.cohred.org/about-us/history-of-cohred/>. Accessed April 2024.

- Crane, Johanna T.. 2013. *Scrambling for Africa: AIDS, expertise, and the rise of American global health science*. Ithaca, NY: Cornell University Press.
- Cueto, Marcos, Theodore M. Brown, and Elizabeth Fee. 2019. *The World Health Organization: A history*. Cambridge: Cambridge University Press.
- CUGH (Consortium of Universities for Global Health). 2025. Member Institutions. <https://www.cugh.org/about/member-institutions/>. Accessed May 20, 2025.
- Cullinan, Kerry. 2025. WHO's Pandemic Agreement is Finally Within Reach as Brazil Proposes Compromise. Health Policy Watch, April 13. <https://healthpolicy-watch.news/who-pandemic-agreement-is-finally-within-reach/>. Accessed April 15, 2025.
- Daar, Abdallah S., Susan Reynolds Whyte, and Mohamed S. Abdullah. 2008. TDR thirty years on: Taking stock and envisioning the future for the Special Programme for Research and Training in Tropical Diseases. *Plos Neglected Tropical Diseases* 2(11): e314. <https://doi.org/10.1371/journal.pntd.0000314>.
- Davies, A Michael, and Boutros P Mansourian. 1992. *Research strategies for health: Based on the Technical Discussions at the 43rd World Health Assembly on the "Role of Health Research in the Strategy for Health for All by the Year 2000"*. Lewiston NY: Hogrefe and Huber on behalf of the WHO. <http://www.worldcat.org/title/research-for-health-strategies-for-health-for-all/oclc/25092292>
- de Puyvallée, Bengy, Katerini Tagmatarchi Antoine, and Simon Rushton Storeng. 2025. The Gates Foundation's network diplomacy in European donor countries. *Globalization and Health* 21(1): 22. <https://doi.org/10.1186/s12992-025-01112-9>.
- Diczfalusy, E. 1986. World Health Organization special programme of research, development and research training in human reproduction: The first fifteen years: A review. *Contraception* 34(1): 1–119. [https://doi.org/10.1016/0010-7824\(86\)90003-X](https://doi.org/10.1016/0010-7824(86)90003-X).
- Erikson, Susan L. 2015. Secrets from whom? Following the money in global health finance. *Current Anthropology* 56(S12): S306–S316. <https://doi.org/10.1086/683271>.
- ESSENCE on Health Research. (2014). *Seven principles for strengthening research capacity in low-and-middle-income countries: Simple ideas in a complex world*. ESSENCE on Health Research. <https://tdr.who.int/publications/m/item/2014-06-19-seven-principles-for-strengthening-research-capacity-in-low-and-middle-income-countries-simple-ideas-in-a-complex-world>. Accessed Nov. 24, 2024.
- Etienne, Carissa, Kamran Abbasi, and Luis Gabriel Cuervo. 2018. Research for health in the Americas. *BMJ* 362 : k2944. <https://doi.org/10.1136/bmj.k2944>.
- Ferpozzi, Hugo. 2023. Public-Private Partnerships and the Landscape of Neglected Tropical Disease Research: The Shifting Logic and Spaces of Knowledge Production. *Minerva* 61(4): 607–629. <https://doi.org/10.1007/s11024-023-09496-x>.
- Fouad, Tamer M. 2018. Academic dependency: a postcolonial critique of global health collaborations in oncology. *Medicine Anthropology Theory* 5(2). <https://doi.org/10.17157/mat.5.2.538>
- Global Health 50/50. 2020. The Global Health 50/50 report 2020: power, privilege and priorities. London UK. <https://global5050.org/2020report/>
- González-Alcaide, Gregorio, Marouane Menchi-Elanzi, Edy Nacarapa, and José-Manuel Ramos-Rincón. 2020. HIV/AIDS research in Africa and the Middle East: participation and equity in North-South collaborations and relationships. *Globalization and Health* 16:83. <https://doi.org/10.1186/s12992-020-00609-9>.
- Gostin, Lawrence O. 2007. A proposal for a framework convention on global health. *Journal of International Economic Law* 10(4): 989–1008. <https://doi.org/10.1093/jiel/jgm039>.
- Gostin, Lawrence O., Benjamin Mason Meier, Safura Abdool Karim, et al. 2024. The World Health Organization was born as a normative agency: Seventy-five years of global health law under WHO governance. *PLOS Global Public Health*. <https://doi.org/10.1371/journal.pgph.0002928>.
- Grace, Cheri, and Nel Druce. 2009. External review of product development partnership grant framework. Report, funded by the Netherlands Ministry of Foreign Affairs. https://www.mmv.org/sites/default/files/uploads/docs/publications/PDP_Evaluation_-_Final__25_Nov_5.pdf. Accessed Nov. 23, 2025.
- Grace, Cheri, Mark Pearson, and J Lazdins. 2011. Pooled funds: Assessing new models for financing Global Health R&D. Washington DC: Results for Development Institute. <https://www.r4d.org/wp-content/uploads/Pooled-Funding-Technical-Background-Paper.pdf>. Accessed Nov. 24, 2025.
- Halabi, Sam, Lawrence O. Gostin, Kashish Aneja, et al. 2023. The Coalition for Epidemic Preparedness Innovations (CEPI) and the partnerships of equitable vaccine access. *Journal of Law, Medicine and Ethics* 51(2): 234–246. <https://doi.org/10.1017/jme.2023.85>.

- Harman, Sophie. 2016. The Bill and Melinda Gates Foundation and legitimacy in global health governance. *Global Governance: A Review of Multilateralism and International Organizations* 22(3): 349–368. <https://doi.org/10.1163/19426720-02203004>.
- Harman, Sophie, and Andres Papamichail. 2025. *Global health governance*, 2nd ed. Abingdon, Oxon: Routledge.
- Harris, Kevin., 2019. How A Gates Foundation-Backed Fund Is Revolutionizing Global Health Impact Investing. *Forbes*. April 9. <https://www.forbes.com/sites/kevinharris/2019/04/09/how-the-gates-foundation-is-revolutionizing-global-health-impact-investing/>
- Hoffman, Steven J., and John-Arne Røttingen. 2013. Dark sides of the proposed framework convention on global health's many virtues: A systematic review and critical analysis. *Health and Human Rights* 15(1): E117–134.
- Horner, Rory. 2022. Beyond rebranding from international to global? Lessons from global health for global development. *Area* 54:159–167. <https://doi.org/10.1111/area.12669>.
- Huang, Ying, Shisong Jiang, and Emmanuel Kumah. 2024. China and the WHO pandemic treaty: A dive into stance, underpinnings, and implications. *Frontiers in Public Health* 12:1335751. <https://doi.org/10.3389/fpubh.2024.1335751>.
- Independent Evaluation Group, World Bank. 2009. Global Program Review Vol. 3 Issue 3. Washington DC: World Bank. <https://ieg.worldbankgroup.org/sites/default/files/Data/reports/gfhr.pdf>
- Jafarova, Lala. 2024. WHO pandemic treaty: Ethical imperatives and political realities in global health governance. *Politikon: the IAPSS Journal of Political Science* 58:6–25. <https://doi.org/10.22151/politikon.58.1>.
- Käser, Michael, Christine Maure, Beatrice MM. Halpaap, et al. 2016. Research capacity strengthening in low and middle income countries—An evaluation of the WHO/TDR career development fellowship programme. *Plos Neglected Tropical Diseases* 10(5): e0004631. <https://doi.org/10.1371/journal.pntd.0004631>.
- Kaul, Inge, Isabelle Grunberg, and Marc Stern. 1999. *Global public goods: International cooperation in the 21st century*. New York: Oxford Univ. Press for the United Nations Development Programme.
- Keating, Conrad. 2014. Ken Warren and the Rockefeller Foundation's Great Neglected Diseases Network, 1978–1988: The transformation of tropical and global medicine. *Molecular Medicine* 20(Suppl 1): S24. <https://doi.org/10.2119/molmed.2014.00221>.
- Kelly, Ann H., Javier Lezaun, and Alice Street. 2022. Global health, accelerated: Rapid diagnostics and the fragile solidarities of 'emergency R&D.' *Economy and Society* 51(2): 187–210. <https://doi.org/10.1080/03085147.2021.2014730>.
- Kerry, Vanessa B., Thumbi Ndung'u, Rochelle P. Walensky, et al. 2011. Managing the demand for global health education. *PLoS Medicine* 8(11): e1001118. <https://doi.org/10.1371/journal.pmed.1001118>.
- Kessler, Alexander, and Charles Standley. 1976. Research and development of new techniques-The WHO expanded programme of research, development and research training in human reproduction. *Proceedings of the Royal Society of London. Series B, Biological Sciences* 195(1118): 129–136.
- Kieny, Marie Paule, and Peter Salama. 2017. WHO R&D Blueprint: a global coordination mechanism for R&D preparedness. *The Lancet* 389(10088): 2469–2470. [https://doi.org/10.1016/S0140-6736\(17\)31635-5](https://doi.org/10.1016/S0140-6736(17)31635-5).
- Kumar, Avinash, Moumita Koley, Alfredo Yegros, and Ismael Rafols. 2024. Priorities of health research in India: Evidence of misalignment between research outputs and disease burden. *Scientometrics* 129(4): 2433–2450. <https://doi.org/10.1007/s11192-024-04980-x>
- Lancet, The. 2007. International Health Partnership: A welcome initiative. *The Lancet* 370(9590): 801. [https://doi.org/10.1016/S0140-6736\(07\)61387-7](https://doi.org/10.1016/S0140-6736(07)61387-7).
- Lenharo, Mariana. 2024. Hope for global pandemic treaty rises – despite missed deadline. *Nature* 630(8016): 282. <https://doi.org/10.1038/d41586-024-01658-5>.
- Levich, Jacob. 2015. The Gates Foundation, Ebola, and Global Health Imperialism. *The American Journal of Economics and Sociology* 74(4): 704–742. <https://doi.org/10.1111/ajes.12110>
- Lexchin, Joel. 2024. Profits first, health second: The pharmaceutical industry and the Global South. *International Journal of Health Policy and Management* 13:8471. <https://doi.org/10.34172/ijhpm.2024.8471>.
- Litsios, Socrates, WHO. 2008. *The third ten years of the World Health Organization, 1968–1977*. Geneva: World Health Organization.
- Lurie, Nicole, Gerald T. Keusch, and Victor J. Dzau. 2021. Urgent lessons from COVID 19: why the world needs a standing, coordinated system and sustainable financing for global research and development. *The Lancet* 397(10280): 1229–1236. [https://doi.org/10.1016/S0140-6736\(21\)00503-1](https://doi.org/10.1016/S0140-6736(21)00503-1).

- Mahajan, Manjari. 2019. The IHME in the Shifting Landscape of Global Health Metrics. *Global Policy* 10(S1): 110–120. <https://doi.org/10.1111/1758-5899.12605>.
- Matthiessen, Line, Walter Colli, Jean-François Delfraissy, et al. 2016. Coordinating funding in public health emergencies. *The Lancet* 387(10034): 2197–2198. [https://doi.org/10.1016/s0140-6736\(16\)30604-3](https://doi.org/10.1016/s0140-6736(16)30604-3).
- Maurice, John, and Anna Marina Pearce. 1987. *Tropical disease research: a global partnership, eighth programme report, the first ten years, with highlights of the 1985-86 biennium*. Geneva: World Health Organization. <https://iris.who.int/handle/10665/36975>
- Mazzucato, M. 2018. Mission-oriented research and innovation in the European Union. Luxembourg: European Commission. <https://op.europa.eu/en/publication-detail/-/publication/5b2811d1-16be-11e8-9253-01aa75ed71a1/language-en>. Accessed January 5, 2024.
- McCoy, David, Gayatri Kembhavi, Jinesh Patel, and Akish Luintel. 2009. The Bill and Melinda Gates Foundation’s grant-making programme for global health. *The Lancet* 373(9675): 1645–1653. [https://doi.org/10.1016/s0140-6736\(09\)60571-7](https://doi.org/10.1016/s0140-6736(09)60571-7).
- Mehand, Massinissa Si, Farah Al-Shorbaji, Piers Millett, and Bernadette Murgue. 2018. The WHO R&D Blueprint: 2018 review of emerging infectious diseases requiring urgent research and development efforts. *Antiviral Research* 159:63–67. <https://doi.org/10.3201/eid2409.171427>.
- Meier, Benjamin Mason, and Alexandra Finch. 2024. Seventy-five years of global health lawmaking under the World Health Organization: Evolving foundations of global health law through global health governance. *Journal of Global Health Law* 1(1): 26–49. <https://doi.org/10.4337/jghl.2024.01.02>.
- Merson, Michael H. 2014. University engagement in global health. *New England Journal of Medicine* 320(18): 1676–1678. <https://doi.org/10.1056/nejmp1401124>.
- Merson, Michael H, and Chapman Page. 2009. The dramatic expansion of university engagement in global health: implications for US policy: A report by the CSIS Global Health Policy Center. Center for Strategic and International Studies. <https://www.csis.org/analysis/dramatic-expansion-university-engagement-global-health>. Accessed May 15 2024.
- Millard Robin. 2024. Pandemic Accord talks at loggerheads as time ticks away. *Barron’s*. March 24. <https://www.barrons.com/news/pandemic-accord-talks-at-loggerheads-as-time-ticks-away-5d0141b9>. Accessed April 10, 2025.
- Mills, Anne. 2005. Mass campaigns versus general health services: What have we learnt in 40 years about vertical versus horizontal approaches? *Bulletin of the World Health Organization* 83(4): 315-316. <https://iris.who.int/bitstream/handle/10665/269382/315.pdf?sequence=1&isAllowed=y>
- Milstien, Julie, Nora Dellepiane, Lahouari Belgharbi, Liliana Chocarro, and David Wood. 2016. Assuring vaccine quality by strengthening regulatory agencies: The work of the World Health Organization. In *New generation vaccines*, eds. Myron M. Levine, Gordon Dougan, and Michael F. Goodet, 149–158. Boca Raton: CRC Press.
- Molyneux, David H., Anarfi Asamoah-Bah, Alan Fenwick, Lorenzo Savioli, and Peter Hotez. 2021. The history of the neglected tropical disease movement. *Transactions of the Royal Society of Tropical Medicine and Hygiene* 115(2): 169–175. <https://doi.org/10.1093/trstmh/tra015>.
- Moon, Suerie, Jorge Bermudez, and Ellen’t Hoen. 2012. Innovation and access to medicines for neglected populations: Could a treaty address a broken pharmaceutical R&D system? *PLoS Medicine* 9(5): e1001218. <https://doi.org/10.1371/journal.pmed.1001218>.
- Moran, Mary, Javier Guzman, A. L. Ropers, and A. Illmer. 2010. The role of Product Development Partnerships in research and development for neglected diseases. *International Health* 2(2): 114–122.
- Moran, Mary, Javier Guzman, Lisette Abela-Oversteegen, et al. 2011. *G-Finder Report. Neglected disease research and development: Is innovation under threat?* Sydney and London: Policy Cures. https://www.policycures.org/wp-content/uploads/2022/11/g-finder_2011.pdf. Accessed January 5, 2025.
- Moran, Mary. 2013. Debating the scope of a health research and development convention. *Bulletin of the World Health Organization* 91(8): 618–620. <https://iris.who.int/handle/10665/271334>
- Moser, Fabian, and Jesse B. Bump. 2022. Assessing the World Health Organization: What does the academic debate reveal and is it democratic? *Social Science and Medicine* 314:11545. <https://doi.org/10.1016/j.socscimed.2022.115456>.
- Musgrove, Philip. 2000. A critical review of ‘A critical review’: the methodology of the 1993 World Development Report, ‘Investing in Health.’ *Health Policy and Planning* 15(1): 110–115. <https://doi.org/10.1093/heapol/15.1.110>.

- Nassiri-Ansari, Tiffany, and Emma L M. Rhule. 2024. Missing in action: A scoping review of gender as the overlooked component in decolonial discourses. *BMJ Global Health* 9(4): e014235. <https://doi.org/10.1136/bmjgh-2023-014235>.
- Nicol, Dianne, and Olasupo Owoeye. 2013. Using TRIPS flexibilities to facilitate access to medicines. *Bulletin of the World Health Organization* 91:533–539. <https://doi.org/10.2471/BLT.12.115865>.
- OECD. 2005. *Paris Declaration on Aid Effectiveness*. https://www.oecd.org/en/publications/2005/03/paris-declaration-on-aid-effectiveness_g1g12949.html. Accessed August 11, 2024.
- OECD. 2008. Accra Agenda for Action. https://www.oecd.org/en/publications/2008/09/acc-ra-agenda-for-action_g1g1294b.html. Accessed August 11, 2024.
- Oliveira-Cruz, Valeria, Christoph Kurowski, and Anne Mills. 2003. Delivery of priority health services: searching for synergies within the vertical versus horizontal debate. *Journal of International Development* 15(1): 67–86. <https://doi.org/10.1002/jid.966>.
- Ozgediz, Selcuk. 2012. The CGIAR at 40: Institutional evolution of the world's premier agricultural research network. World Bank. <http://hdl.handle.net/10986/23845>
- O'Neill, Rory. 2024. How to kill a pandemic treaty. *Politico*. April 2. <https://www.politico.eu/article/how-kill-pandemic-treaty-who-wha-geneva-covid-19/>. Accessed September 14, 2024.
- Packard, Randall M. 2016. *A history of global health: Interventions into the lives of other peoples*. Baltimore: Johns Hopkins University Press.
- Paalman, Maria, Henk Bekedam, Laura Hawken, and David Nyheim. 1998. A critical review of priority setting in the health sector: The methodology of the 1993 World Development Report. *Health Policy and Planning* 13(1): 13–31. <https://doi.org/10.1093/heapol/13.1.13>.
- Palkonyay, Laszlo, and Hiba Fatima. 2016. A decade of adaptation: Regulatory contributions of the World Health Organization to the Global Action Plan for Influenza Vaccines (2006–2016). *Vaccine* 34(45): 5414–5419. <https://doi.org/10.1016/j.vaccine.2016.07.025>.
- Pandemic Fund. 2024. <https://www.thepandemicfund.org>. Accessed December 8, 2024.
- Pang, Tikki, & Gianna Gayle Herrera Amul. 2021. Global health research: Changing the agenda. In *Global health: Ethical challenges*, eds. Gillian Brock and Solomon Benatar, 370–382. Cambridge: Cambridge University Press.
- Pastrana, Aya, David Beran Nathaly, Claire Somerville, et al. 2020. The process of building the priority of neglected tropical diseases: A global policy analysis. *Plos Neglected Tropical Diseases* 14(8): e0008498. <https://doi.org/10.1371/journal.pntd.0008498>.
- PDP Funders Group. (2024). <https://www.pdpfundersgroup.org/>. Accessed January 5, 2025.
- Peters, David, 2017. False Distinctions Between International Health and Global Health. <https://globalhealthknow.org/2017-11/false-distinctions-between-international-health-and-global-health>. Accessed Nov. 20, 2024.
- Prah, Jennifer J. 2024. Essay: Theoretical and normative foundations for global health law. *Journal of Global Health Law* 1(2): 257–263. <https://doi.org/10.4337/jghl.2024.02.06>.
- Ralaidovy, Ambinintsoa H., Taghreed Adam, and Philippe Boucher. 2020. Resource allocation for biomedical research: analysis of investments by major funders. *Health Research Policy and Systems* 18(1): 20. <https://doi.org/10.1186/s12961-020-0532-0>.
- Ramchandani, Rohit, Michel Kazatchkine, Joanne Liu, et al. 2021. Vaccines, therapeutics, and diagnostics for Covid-19: Redesigning systems to improve pandemic response. *BMJ* 375 : e067488. <https://doi.org/10.1136/bmj-2021-067488>.
- Reed, Jim. 2025. WHO agrees legally binding pandemic treaty. BBC, April 16. <https://www.bbc.com/news/articles/c7vn1r3ge2jo>. Accessed April 20, 2025.
- Regmi, Sadie, Benjamin Skov Kaas-Hansen, and Johanne Helene Iversen. 2013. Beyond access to medicines: Eliciting high-income country support for a new global health research and development paradigm. *Journal of Global Health* 3(2): 020303. <https://doi.org/10.7189/jogh.03.020303>.
- Reich, Michael. R. ed. 2002. *Public-private partnerships for public health*. Cambridge Mass: Harvard University Press.
- Rifkin, Susan B., and Gill Walt. 1986. Why health improves: Defining the issues concerning 'comprehensive primary health care' and 'selective primary health care.' *Social Science and Medicine* 23(6): 559–566. [https://doi.org/10.1016/0277-9536\(86\)90149-8](https://doi.org/10.1016/0277-9536(86)90149-8).
- Røttingen, John-Arne, Paulo Marchiori Buss, Sally Davies, and Oumar Touré. 2009. Global-health research architecture—time for mergers? *The Lancet* 373(9659): 193–195. [https://doi.org/10.1016/S0140-6736\(09\)60054-4](https://doi.org/10.1016/S0140-6736(09)60054-4).

- Røttingen, John Arne, and Claudia Chamas. 2012. A new deal for Global Health R&D? The recommendations of the Consultative Expert Working Group on Research and Development (CEWG). *PLoS Medicine* 9(5): e1001219. <https://doi.org/10.1371/journal.pmed.1001219>.
- Ruttan, Vernon W. 1986. Toward a global agricultural research system: A personal view. *Research Policy* 15(6): 307–327. [https://doi.org/10.1016/0048-7333\(86\)90028-4](https://doi.org/10.1016/0048-7333(86)90028-4).
- Salm, Melissa, Ali Mahima, Minihaane Mairead, and Conrad Patricia. 2021. Defining global health: findings from a systematic review and thematic analysis of the literature. *BMJ Global Health* 6(6): e005292. <https://doi.org/10.1136/bmjgh-2021-005292>.
- Smith, Jeremy N.. 2015. *Epic measures: One doctor, seven billion patients*. New York: Harper Wave, an imprint of HarperCollins Publishers.
- Smith, Robert DJ., Stefan Schäfer, and Michael J. Bernstein. 2024. Governing beyond the project: Refocusing innovation governance in emerging science and technology funding. *Social Studies of Science* 54(3): 377–404.
- Storeng, Katerini Tagmatarchi, Antoine de Bengy, and Felix Stein Puyvallée. 2023. COVAX and the rise of the ‘super public private partnership’ for global health. *Global Public Health* 18(1): 1987502. <https://doi.org/10.1080/17441692.2021.1987502>.
- Task Force on Health Systems Research. 2004. Informed choices for attaining the Millennium Development Goals: Towards an international cooperative agenda for health-systems research. *The Lancet* 364(9438): 997–1003. [https://doi.org/10.1016/s0140-6736\(04\)17026-8](https://doi.org/10.1016/s0140-6736(04)17026-8).
- TDR (Special Programme for Research and Training in Tropical Diseases). 1988. Report of the Second External Review Committee, 27–29 June 1988, TDR/JCB(11)/88.6 Rev.1. World Health Organization. https://iris.who.int/bitstream/handle/10665/70697/TDR_JCB%2811%29_88.6_Rev.1_eng.pdf?sequence=1&isAllowed=y
- TWN (Info Service). 2016. WHO Member states agree to postpone discussions on R&D treaty. <https://www.twn.my/title2/health.info/2016/hi160601.htm>. Accessed May 10, 2024.
- United Nations. 1987. *Report of the World Commission on Environment and Development; Our common future*. <http://www.un-documents.net/wced-ocf.htm>. Accessed September 15, 2023.
- United Nations. 2016. *Report of the United Nations Secretary-General’s high-level panel on access to medicines*. New York: UN. <http://www.unsgaccessmeds.org/final-report>
- Vieira, Marcela, Tatiana Andia, Obaida Karim, et al. 2023. Rising pharmaceutical innovation in the Global South: A landscape study. *Journal of Pharmaceutical Policy and Practice* 16(1): 155. <https://doi.org/10.1186/s40545-023-00669-3>.
- Velásquez, Germain. 2022. *Vaccines, medicines and COVID-19: How can WHO be given a stronger voice?* Geneva: Springer Nature and South Centre. <https://link.springer.com/book/10.1007/978-3-030-89125-1>. Accessed May 2025.
- Velásquez, Germain, and Xavier Seuba. 2011. *Rethinking Global Health: A binding convention for R&D for pharmaceutical products*. South Centre Policy brief Research Paper No. 42. https://www.southcentre.int/wp-content/uploads/2013/04/RP42_Rethinking-global-health_EN.pdf. Accessed Nov. 20, 2023.
- Velji, Anvar. 2011. Global health education consortium: 20 years of leadership in global health and global health education. *Infectious Disease Clinics of North America* 25(2): 323–335. <https://doi.org/10.1016/j.idc.2011.04.001>.
- Viergever, Roderik F. 2011. Aid alignment for global health research: the role of HIROs. *Health Research Policy and Systems* 9:12. <https://doi.org/10.1186/1478-4505-9-12>.
- Viergever, Roderik F., and Thom C C. Hendriks. 2016. The 10 largest public and philanthropic funders of health research in the world: What they fund and how they distribute their funds. *Health Research Policy and Systems* 14:12. <https://doi.org/10.1186/s12961-015-0074-z>.
- Walsh, Julia A., and Kenneth S. Warren. 1979. Selective primary health care. *New England Journal of Medicine* 301(18): 967–974.
- Wang, Minxi, Ping Liu, Rui Zhang, Zhi Li, and Xin Li. 2020. A Scientometric Analysis of Global Health Research. *International Journal of Environmental Research and Public Health* 17:2963. <https://doi.org/10.3390/ijerph17082963>.
- Weisz, George, Alberto Cambrosio, and Jean-Philippe Cointet. 2017. Mapping Global Health: A network analysis of a heterogeneous publication domain. *BioSocieties* 12(4): 520–542. <https://doi.org/10.1057/s41292-017-0053-4>.
- Weisz, George, and Noémi Tousignant. 2019. International health research and the emergence of global health in the late twentieth century. *Bulletin of the History of Medicine* 93(3): 365–400. <https://doi.org/10.1353/bhm.2019.0049>.

- World Bank. 1993. *World development report 1993: Investing in health*. Washington DC: World Bank.
- WHA (World Health Assembly). 1972. WHA25.60: WHO's Role in the Development and Coordination of Biomedical Research," in Twenty-Fifth World Health Assembly, Geneva, 9–26 May 1972, Part I Resolutions and Decisions, Annexes, ORWHO no. 201. <https://iris.who.int/handle/10665/91995>
- WHA (World Health Assembly). 2008. *Report of the Intergovernmental Working Group on Public Health, Innovation and Intellectual Property* (A161/9). Geneva: World Health Organization <https://iris.who.int/handle/10665/23425>
- WHA (World Health Assembly). 2010. *Public health, innovation and intellectual property: global strategy and plan of action: Report of the Expert Working Group on Research and Development Financing* (A63/6 Add.1). <https://iris.who.int/handle/10665/2373>
- WHA (World Health Assembly). 2012. *Consultative expert working group on research and development: financing and coordination*. A65/24. Geneva: World Health Organization <https://iris.who.int/handle/10665/79197>
- WHO (World Health Organization). 1958. *The first ten years of the World Health Organization*. Annex 1 (Constitution). 459–472. World Health Organization. <https://iris.who.int/handle/10665/37089>
- WHO (World Health Organization). 1964. *The medical research programme of the World Health Organization, 1958–1963*. Geneva; World Health Organization. <https://iris.who.int/handle/10665/88507>
- WHO (World Health Organization). 1969. *The medical research programme of the World Health Organization, 1964–1968*: Report by the Director General. Geneva: World Health Organization. <https://iris.who.int/handle/10665/40602>
- WHO (World Health Organization). 2001. *Macroeconomics and health: Investing in health for economic development: Report of the commission on macroeconomics and health*. <https://iris.who.int/handle/10665/42435>
- WHO (World Health Organization) and Government of Mexico. 2005. Report from the Ministerial Summit on Health Research: Identify challenges, inform actions, correct inequities, Mexico City, 16–20 November 2004. <https://iris.who.int/handle/10665/43226>
- WHO (World Health Organization). 2010. *Research and the World Health Organization: A history of the Advisory Committee on Health Research, 1959–1999*. Geneva: World Health Organization. <https://iris.who.int/handle/10665/44484>
- WHO (World Health Organization). 2012. *The WHO strategy on research for health*. Geneva: World Health Organization. <https://iris.who.int/handle/10665/77935>
- WHO (World Health Organization). 2012a. *International standards for clinical trial registries*. Geneva: World Health Organization. <https://iris.who.int/handle/10665/76705>
- WHO (World Health Organization). 2012b. *Research and development to meet health needs in developing countries: strengthening global financing and coordination: Report of the consultative expert working group on research and development: financing and coordination*. World Health Organization. <https://iris.who.int/handle/10665/254706>
- WHO (World Health Organization). 2017. *Health product research and development fund: operational plan for voluntary pooled funding mechanism: includes two diseases case studies on priority health products for leishmaniasis and schistosomiasis*. TDR/KM/17.2. <https://iris.who.int/bitstream/handle/10665/255300/TDR-KM-17-2-eng.pdf>
- WHO (World Health Organization). 2021. *Global leaders unite in urgent call for international pandemic treaty*. News Release, 30 March. <https://www.who.int/news/item/30-03-2021-global-leaders-unite-in-urgent-call-for-international-pandemic-treaty>. Accessed Dec. 5, 2024.
- WHO (World Health Organization). 2021b. *World Health Assembly agrees to launch process to develop historic global accord on pandemic prevention, preparedness and response*. News release December. <https://www.who.int/news/item/01-12-2021-world-health-assembly-agrees-to-launch-process-to-develop-historic-global-accord-on-pandemic-prevention-preparedness-and-response>. Accessed Dec. 5, 2024.
- WHO Executive Board. 1958. *The role of WHO in medical research*. Geneva: World Health Organization. <https://iris.who.int/handle/10665/132794>
- WHO Executive Board. 1998. 101st Session. EB101/32. *Collaboration with Nongovernmental Organizations*. Report of the Standing Committee on Nongovernmental Organization, 27 January 1998, <https://iris.who.int/handle/10665/79494>
- WHO Executive Board, 124. 2009. *WHO's role and responsibilities in health research: Bamako Global Ministerial Forum on Research for Health: report by the Secretariat*. <https://iris.who.int/handle/10665/2117>

- WHO Executive Board. 2012. Follow-up of the report of the Consultative Expert Working Group on Research and Development: Financing and Coordination; Report by the Director-General (EB132/21). https://apps.who.int/gb/ebwha/pdf_files/eb132/b132_21-en.pdf
- WHO Science Division. 2024. Harnessing the power of science to achieve health for all". <https://www.who.int/our-work/science-division>. Accessed December 16, 2024.
- Yegros-Yegros, Alfredo, Wouter Van de Klippe, Maria Francisca Abad-Garcia, and Ismael Rafols. 2020. Exploring why global health needs are unmet by research efforts: the potential influences of geography, industry and publication incentives. *Health Research Policy and Systems* 18(1): 1–14. <https://doi.org/10.1186/s12961-020-00560-6>.
- Yiu, Kristy, Eva Solum, Deborah DiLiberto, and Steffen Torp. 2020. Comparing approaches to research in global and international health: An exploratory study. *Annals of Global Health* 86:47. <https://doi.org/10.5334/aogh.2799>.

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.