

Institutional Innovations in Global Health: New Ways for Linking
Knowledge with Action to Improve Health in Developing Countries
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Workshop Report

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1. Introduction

The workshop on Institutional Innovations in Global Health brought together fourteen participants from a broad range of fields to discuss the question of how institutional arrangements might better bridge the gap between knowledge and action in global public health. The workshop was convened by the Harvard School of Public Health, Boston University School of Public Health, and Harvard Kennedy School of Government, and supported by the Institutional Innovations for Linking Knowledge with Action in Global Health Project at Harvard's Center for International Development.¹ In light of the multi-faceted nature of the issue, the workshop drew from a wide range of disciplines, including the life sciences, public policy, political science, economics, ecology, business management, public health and medicine, to focus on a question that for many years has challenged the global health field, and continues to do so: what types of institutions are needed to translate the potential of scientific advancements into improved health in developing countries?

Impetus for the workshop came from recent important changes in the institutional landscape, including the emergence of numerous public-private product development partnerships for neglected diseases, and the arrival of two new 800-pound gorillas in the funding arena: the Bill & Melinda Gates Foundation and the Global Fund for AIDS, Tuberculosis and Malaria. These developments have mainly been triggered by the rapid growth of the HIV/AIDS epidemic, but are also signs of a change in the broader thinking about ways to tackle global health problems. These actors can be seen as attempting to bridge various gaps in the creation and dissemination of useful scientific, health-related knowledge. However, while these organizations concentrate on accomplishing their various missions, it seems there is insufficient focus on building the organizations themselves, and on the overall institutional architecture in the field of global health. At the same time, there is a persistent fear that current institutions are insufficient for the challenge of creating, disseminating and applying new knowledge to the developing world's health problems.

With this background in mind, the main goals of the workshop were:

- 1) To explore approaches for understanding the effectiveness of institutional arrangements for better linking knowledge with action to address health problems in developing countries.
- 2) To identify interesting cases of successes or failures of such "linking" institutions for further analysis (see Annex III for cases).
- 3) To generate general propositions about the nature of effective institutions for linking knowledge and action to promote global health, with a view toward deepening understanding, informing policymaking, and ultimately, making a positive impact on health outcomes.

¹ The Project is supported by Harvard's Kennedy School of Government Dean's Acting in Time Initiative, and guided by steering committee members: Dean Barry Bloom, School of Public Health, Harvard University; Professor William C. Clark, Kennedy School of Government, Harvard University, Associate Dean Gerald Keusch, School of Public Health, Boston University, and Nicole Szlezák, Kennedy School of Government, Harvard University. More information is available at <www.ksg.harvard.edu/sed/health>.

- 4) To shape the new project on “Institutional Innovations in Global Health” being developed in collaboration between several groups at Harvard and Boston Universities.

2. Conceptual Frameworks

The workshop began by examining ways in which the field has conceptualized the problem in the past. The question of how knowledge and action can be linked more effectively in the field of public health is a long standing concern in the field of public health. This discussion has intensified in the 1990s. Two fairly recent concepts explicitly addressing knowledge and action have received a lot of attention: first, the argument that there is a research funding gap in the generation of new knowledge about diseases that affect mainly the developing world (e.g. the “10/90 gap”²); and second, the argument that there is a failure to apply existing knowledge about health (e.g. “the know/do” gap). Consequently, many health organizations have focused on addressing the research deficit *or* making existing knowledge more widely available. They also tend to have either a system-wide (horizontal capacity building) or disease-specific (vertical) focus. Few organizations encompass entire “knowledge-action” systems, and few of them simultaneously build capacity while addressing specific problems. Beyond the 10/90 gap and the know-do gap, other work at WHO and at academic institutions has taken a more systematic approach to the problem of linking knowledge and action, highlighting, among other things, that the burden of non-infectious diseases including cardiovascular conditions, cancer, and mental health problems are equally (and increasingly) important in developing countries; and emphasizing that functioning national health systems are crucial to improving health in developing countries.

Participants then took a step back from the health field to consider lessons learned from agriculture and the environment, two other fields that are grappling with the same challenge. These fields also confront a gap between policymakers frustrated that researchers do not give them the information they need, and researchers dissatisfied that their findings are not adopted into practice. Key insights from the analysis include: that a system-wide perspective is needed to keep the links in the chain from basic research to knowledge diffusion connected; that research can tackle broad issues but ought to remain accountable to solving specific problems; that ‘co-production’ of knowledge through the interaction of users and researchers is critical but very rare; that ‘safe spaces’ within institutions are needed for experimentation; and that boundary-spanning institutions are needed to bridge the various divides between disciplines, North and South, researchers and practitioners, the local and global.³

² The “10/90” gap refers to the statistic produced by the Global Forum for Health Research that only 10% of the world’s health research funding is dedicated to health problems that predominantly affect 90% of the world population. See www.globalforumhealth.org.

³ William Clark and Laura Holliday (rapporteurs). “Linking Knowledge with Action for Sustainable Development: The Role of Program Management. Summary of a Workshop. Report to the Roundtable on Science and Technology for Sustainability.” Roundtable on Science and Technology for Sustainability Policy and Global Affairs. National Research Council of the National Academies. Washington, D.C.: The National Academies Press, 2006.

Many participants agreed that institutions played a key role in the production and translation of knowledge into practical benefits for users, but there was debate about the relative role of institutions versus other factors such as leadership and vision, fortuitous timing, and funding. As the goals and premise of the workshop were intentionally broad, it is perhaps natural that discussion ranged across a vast array of subjects. Nevertheless, several key themes emerged, including sustainability (of funding, mission and human resources), the place of needed institutional innovations along a continuum that stretches from basic research to the end user, the role of relationships within partnerships, particularly North/South relationships, and the role of new institutions in global health governance.

3. Themes from the Debates

Sustainability

The idea of sustainability came up repeatedly, not only in relation to funding but also to mission and human resources. It was pointed out that even successful, effective institutions could fail if they did not have a stable, secure source of funding. One example was the Multilateral Initiative on Malaria (MIM), begun at the National Institutes for Health (NIH), which in the late 1990s convened a number of meetings that were critical for re-framing the problem of malaria; these gatherings spanned the boundaries between malaria controllers and malaria researchers, and between experts in the North and South. However, after several landmark meetings, the initiative lost its institutional base for funding support and is in danger of also losing its ability to connect the research and control communities working on malaria in Sub-Saharan Africa.

The bulk of health research funding has traditionally come from Northern governments, private foundations, or the market. But in some cases, sustainable funding may require support from governments in the South, rather than outside donors or market mechanisms. The International AIDS Vaccine Initiative and the Drugs for Neglected Diseases Initiative (DNDi) are both attempting to move away from patents as a source of sustainable funding, either because the market would not generate sufficient profit or because the exclusive ownership rights granted by patents would restrict the broad dissemination of knowledge and its benefits. The governments of Brazil and India have recognized the need to dedicate funding to research, and the existence of the DNDi is partly based on the commitment of partner governments to continue supporting the generation of new medicines as a global public good. These examples point to the possibility that sustainable funding may be endogenous to successful institutional arrangements – that is, *how* an organization sustains funding may be just as important as how it spends it. The relationship between an organization's design and the implications for its financial viability is an area for potential further research.

Long-term, stable support – whatever the source – was seen as a key factor, since building institutional capacity could take many years, but loss of funding can rapidly cause the enterprise to crash. The work of the International Centre for Diarrhoeal

Disease Research, Bangladesh (ICDDR), widely recognized as a successful institution based in the South, grew slowly and organically over decades starting from its roots at the NIH-supported cholera research center in Pakistan, and relied on long-term donor support to do so. Similarly, the impact of democracy on the health outcomes of a population are slow to be felt – one estimate is that possibly 15 or 20 years of democratic history are required to provide tangible benefits, perhaps because democratic governance takes many years to work through institutions before eventually having an impact on the ground.

However, while funding was clearly a central concern, the sustainability of an institution's mission also arose as an important consideration. As one participant pointed out, MIM may have lost some of its funding, but it did ratchet up the number of young African researchers working on malaria and helped to generate two new important partnerships – the Medicines for Malaria Venture (MMV) and the Malaria Vaccine Initiative (MVI). What should happen to an institution when success and/or a changing environment render its mission less relevant? With the rise of outside funding and many new product-development partnerships focused on diseases predominantly affecting the developing world, the question also arose as to whether the WHO/UNDP/World Bank Tropical Disease Research (TDR) program ought to be sustained, and if so, for what purpose; for example, it was suggested that TDR should shift its focus away from basic research towards operational research (e.g. on adoption of malaria-preventing bed nets), since this type of research is not yet systematically conducted. Another example is the ICDDR, which has changed its focus over the years and no longer concentrates purely on diarrheal diseases – has this expansion of mission harmed the institution? Lastly, it was pointed out that perhaps the focus should not necessarily be on sustaining institutions themselves, but rather, on sustaining positive outcomes, to which existing institutions may or may not play a contributing role.

Finally, the importance of sustainable human resources and the problem of the “brain drain” of scientific expertise from developing countries emerged as a key consideration. While low salaries and relatively poor career prospects draw many researchers away from their home countries in the South, there were a number of examples of policies effective in countering brain-drain. For example, a TDR survey of researchers trained through the program from 1977-1992 found that about 90% had returned to their home country and stayed in the research sector, partly due to re-entry grants from TDR to help young scientists jump-start research when returning home. A NIH Fogarty Center study of participants in its HIV/AIDS training program for developing countries similarly found that about 85% of those surveyed had also stayed in their home countries – not necessarily in the same government institution but possibly with an NGO or international organization with stable funding. Furthermore, it was pointed out that public research institutes or universities do not monopolize valuable human resources, but rather, experts may stay in-country but migrate to NGOs or private consulting firms. Finally, partnerships may play an important role in countering brain drain, as demonstrated by international partnerships in agriculture, which helped keep some researchers in-country by providing an alternative source of employment when national institutions, such as universities, were facing funding crises. A question raised by the emerging partnership structure of some global health institutions, then, is how these structures are contributing

to the amelioration (e.g. through increased human capital development, worker motivation, and a safety net effect) and/or exacerbation (e.g. through attractive salaries and benefits in Northern-based institutions) of the brain drain problem – a question for potential further empirical research.

Along the Spectrum: from upstream research to downstream users

Another theme that repeatedly arose was the problem that institutions shied away from taking a systems-wide perspective, and instead, tended to situate themselves along one point on the continuum from upstream research to downstream users. In the 1970s, three major organizations succeeded in spanning the research-to-delivery continuum – IBM, Xerox and AT&T. However, today, many institutions seem to fix themselves within a particular part of the stream, while expecting other actors to somehow fill in the remaining gaps. For example, large pharmaceutical companies, which used to cover both ends of the spectrum, have recently left basic research to the universities and/or smaller biotechnology firms, and shifted their focus to the clinical trial and regulatory approval phases of the product development process. Private conversations with drug industry executives indicate that some firms do not want to cover both the full range of upstream and downstream processes in-house, but rather would prefer to focus on certain areas and work through partnerships to achieve the rest. However, the exact nature of such partnerships, particularly how they should balance public goods production against private profitability considerations, remains complex. Indeed, while the idea arose that the private sector may be better suited to the ‘right’ side of the stream, there was also concern about the perceived lack of a viable market and/or misaligned incentives that might lead to undesirable health outcomes.

Nevertheless, some institutions do try to cover both the left and right sides of the stream, such as the Iranian Ministry of Health, which has placed academics at the head of each province’s health system on the premise that researchers should have a better understanding of needs on the ground and that health systems would benefit from academic input. However, while researchers may have influenced policymaking, it is not clear whether the experience of running a health district also changed research priorities. The Global Alliance for Vaccines and Immunization, Partners in Health, and Merck’s ivermectin donation program were also raised as possible examples of organizations trying to incorporate both research and delivery into their work.

It was also suggested that funders may potentially be particularly well-placed to bring a systematic perspective to a fragmented field of actors. Alternatively, funders can skew priorities by injecting their own specific interests into the global health field. A potential research question is how well major donors, such as international financial institutions like the World Bank, use their funding as a vehicle for delivering and diffusing knowledge in developing countries. A related question is the impact of fragmentation and territoriality within the donor community itself on its capacity to reach this goal.

Finally, a political analysis may be required to understand fully how actors can and must navigate a maze of stakeholders in order to get new knowledge adopted. For example, it

is not obvious why, even when effective new tools exist as is currently the case for malaria drugs, they do not get widely or quickly adopted.

North/South relationships

A third major theme was the influence of North/South relationships both within and among institutions. If, as experience from other fields indicates, co-production of knowledge by producers and users is essential, then this relationship is an important factor to examine. If resources and capacity for research remain predominantly in the North, how do North/South relationships influence the process of translating scientific progress into improvements in human health in the South? Several examples were raised of institutions based in the South, but which continue to be dominated by actors from the North, such as the French research institutes in West Africa, and offices of the United Kingdom's Medical Research Councils in Anglophone Africa. A potential case study is the Institute of Nutrition of Central America and Panama (INCAP) based in Guatemala, an organization started in 1949 that focused on childhood nutrition and the role of iodine deficiency in goiter; while the institute was considered a success for its impact on nutrition throughout Latin America, one participant pointed out that it seriously declined when the foreign management left and the Pan-American Health Organization (PAHO) took over.

At the same time, newer institutions are emerging that are characterized by more balanced North/South relationships and/or complemented by South/South partnerships. For example, in Bangladesh BRAC University's new James P. Grant School of Public Health aims to train experts *from* the developing world *for* the developing world, while also drawing on expertise from Northern institutions such as Harvard's School of Public Health and Sweden's Karolinska Institute. In part, such partnerships were possible because of BRAC's solid international reputation as an NGO and its long-term institutional sustainability. Thailand's Mahidol University of Medical Sciences was also initially supported by the Rockefeller Foundation and American faculty; however, the faculty had non-renewable eight-year contracts during which time they were tasked with building a sustainable, local faculty. Critical factors for successful North/South partnerships, it was pointed out, included giving an equal role to Southern and Northern institutions, fostering ownership and agenda-setting in the South, and focusing on capacity building in the South as a core part of any partnership's mission. As global health institutions emerge and adapt, particularly in the form of partnerships, it will be instructive to observe the changing role of North/South and South/South relations in institutional governance and how it affects institutional success.

New Institutions and Global Health Governance

A final topic that came up frequently in workshop discussions was the changing institutional landscape in global health and the governance arrangements currently in place in this domain. Three themes recurred. First, participants raised the question of the significance and potential of the recent arrival of large funding bodies like the Gates Foundation and the Global Fund to Fight AIDS, Tuberculosis and Malaria. How does the

entry into the health sector of these large organizations change the balance between existing institutions? Is their main focus on certain infectious diseases warranted, considering the substantial and increasing burden of disease that stems from non-infectious diseases such as cardiovascular conditions, tobacco-related diseases and mental illness? How much of their weight and potential success can be attributed to the substantial resources they make available versus their actual agendas and ways of working? And how do their governance, institutional design and approach influence their success?

Second, new, smaller organizations, like the public-private partnerships MMV, DNDI and the Institute for One World Health also received much attention. Like the Global Fund and Gates Foundation, these organizations focus on infectious diseases, particularly “neglected diseases” that have long been ignored by the market. A key question is, can their attempts at speeding up product development succeed in areas that are considered unattractive and/or too risky by the pharmaceutical industry, and can they secure sustained funding to do so? If a partnership succeeds in developing new drugs or vaccines, a potential research question may be whether and how it builds or connects to existing structures to deliver the products to patients.

A third aspect that came up in discussions about global health governance was the tremendous need for coordination among the many new and old players in the global health domain. Lack of coordination and duplication of efforts may lead to waste of resources and overextension of developing country capacities. For example, participants noted that ministries of health in developing countries are being overwhelmed by the demands associated with establishing, monitoring and evaluating the many donor programs set up within their countries, to the point where domestic agendas and duties get neglected. In sub-Saharan Africa, where the HIV/AIDS epidemic in particular has attracted many donors, programs aim to provide assistance but create counter-productive burdens when coordination is insufficient. The Global Fund, by requiring a national HIV/AIDS strategy, attempts to streamline some of these efforts – however, it is not yet clear how successful they are. Given this situation, how is the entry of so many new players, most of them outside of the Bretton Woods institutions, going to change the global health landscape? Which type of institution, if any, could take up a coordinating function between the various organizations and approaches?

4. Conclusions and Directions for Future Research:

The question of what types of institutions are needed to bridge the knowledge/action gap in global health has persisted in the field for many years, yet, satisfactory answers remain elusive. The workshop presented multiple possible directions for future research on this question,. In particular, a case-based analysis focusing on institutional arrangements would be of great value at a time when the global health arena is rapidly changing. We need a new framework on the cycle of care that facilitates a comparative analysis of established approaches/institutions with those that are emerging as necessary for the scaled treatment of poverty diseases. The established way of working and thinking has been disease-specific, and clearly this perspective is essential given the depth of

capability needed for successful disease-specific interventions such as malaria bednets. Yet we also may gain a great deal by understanding how institutions interact with disease-specific interventions, i.e., so that we can evaluate effectively the consequences of DDT-spraying programs that influenced malaria but that also stimulated a broader public and private response.

Nevertheless, opinions diverged on the selection of cases (see Annex IV for more details) and structure of such an analysis. In principle, the design of a collection of case studies of global health institutions could be varied along two dimensions: the selection of cases and the organization of the analysis. In terms of **case selection**, one possibility is **to focus on a particular disease** and look at the institutional arrangements set up to address it along the continuum from basic research to the end user. For example, many workshop participants mentioned malaria-related cases; given the large number of existing institutions and the comparatively large amount of information about malaria, it could make for a very productive and interesting case analysis. The narrower focus provided by a disease-based approach could facilitate the adoption of a systems wide perspective, while yielding broader lessons applicable to other disease and health areas.

An alternative way of selecting cases would be to **focus on a particular theme**, rather than a disease. Examples of such themes include the construction of North-South partnerships, or the connections between basic research and the end user – both are objectives that global health institutions seek to accomplish. This theme-based approach would yield important insights into different institutional designs that address a particular topic, although it may be more difficult to span the entire continuum between basic research and the end user while ensuring comparability between cases.

In terms of **organization of the analysis**, case studies could either be set up in a loosely organized manner or compiled under a larger theme. This approach would yield a loose collection of individual cases, whereby the in-depth analysis of individual characteristics of cases is favored over comparability between the cases. An alternative way of structuring the analysis would be to define at the outset a list of analytic criteria for direct case comparison, and to structure the writing and analysis of the cases around these parameters. This approach would allow for more structured comparison of cases, though at the expense of individual texture in the case analysis.

Notwithstanding the various possible approaches, the workshop clearly concluded that further empirical examination of the problem of linking knowledge to action in global health would indeed be instructive. The project is now tasked with conducting a useful analysis that would not only identify gaps and shortcomings in the newly emerging institutional landscape, but also propose bridging measures that could address the prevalent concerns about sustainability, the knowledge-action continuum and equitable governance.

Annex I: Workshop Participants

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Strom Thacker, *Department of International Relations, Boston University*
Dyann Wirth, *School of Public Health, Harvard University*

Annex II: Background Paper

Nicole Szlezák, “Linking Knowledge and Action in Global Health – Current Concepts, Approaches and Institutions.” CID Graduate Student and Postdoctoral Fellow Working Paper No.12. Center for International Development at Harvard University, August 2006. <www.cid.harvard.edu/cidwp/grad/012.htm>

Annex III: Participant Suggestions of Case Studies

- Multilateral Initiative in Malaria
- Failure of the Roll Back Malaria initiative
- The Global Fund for AIDS, TB and Malaria as an innovative donor
- Global Alliance for Vaccines and Immunisation
- International Centre for Diarrhoeal Disease Research, Bangladesh
- The new James P Grant School of Public Health at BRAC University, Bangladesh
- Public-private partnerships in malaria
- The merging of the roles of researchers and policymakers in the Iranian Ministry of Health
- Merck and HIV, private sector research institutions that link knowledge creation and action (IBM, Xerox, AT&T)
- Innovative intellectual property rights policy of the Drugs for Neglected Diseases Initiative
- Co-production of knowledge in a maternal and neo-natal health project in Pakistan
- Links between democracy and health outcomes at national levels

Annex IV: List of Proposed Themes for Further Research

- Strengthening institutional capacity in LDCs, e.g. through partnerships between North and South
- Metrics and health policy
- Financial institutions as institutions for linking knowledge and action. How well do they do? Performance measures?
- What would a national ministry of health do to increase the infusion of technology in their country?
- Political institutions and their impact on health
- Malaria: institutional landscape
- Effectiveness of health institutions (implementation, horizontal versus vertical orientation)
- What are lessons from other sectors?
- Governance structures in health institutions – how do they relate to success and failure?