Commentary

Moving Beyond Diagonal and T-Shaped: Getting the Incentives Right for the Pie Not for the Slice

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CONTENTS

References

The adoption of the Millennium Development Goals in the year 2000 brought health to the center of the global development agenda. Global health initiatives (GHIs)—including the Global Fund, Gavi, the Vaccine Alliance, and the President’s Emergency Plan for AIDS Relief (PEPFAR)—have become major players in the global health arena. These largely disease-specific entities have brought with them significant financial resources that have made the previously improbable (such as the provision of free anti-retroviral therapy) possible, given prominence to new actors including civil society groups, and supported innovative financing and payment mechanisms in a range of areas.1

In many low- and middle-income countries (LMICs), GHIs emerged in the backdrop of greatly weakened health systems underfunded as a result of decades of neglect, exacerbated by economic crises and ravaged in the case of much of sub-Saharan Africa by the HIV/AIDS epidemic.1 Signs of these weakened health systems included low numbers of under-trained human resources for health, poor-quality facilities, and underdeveloped and unregulated commodity supply chains: a situation associated with significant unnecessary morbidity and mortality among the populations of many LMICs.

In such a situation, the ability of GHIs to demonstrate immediate impact by saving lives through focused interventions on priority diseases had an instinctive appeal to much of the development community. By clearly specifying who was responsible for what and the outcomes that were expected for a given investment of resources, they were argued to enhance accountability, a major attraction for bilateral and multilateral donors.2 The contrast with the nebulous outcomes of, and temporally distant returns to, investments in strengthening health systems were striking.1,3

In their quest to aggressively and effectively combat specific diseases, GHIs invested significantly in training human resources for health for their target diseases, increased funding for drugs and commodities, and promoted an enhanced role for the private sector in service delivery.4 with their
funding representing more than 50% of the total health budget in some settings. Hence, it is not surprising that these programmatic interventions significantly impact service delivery, human resources for health, financing and health system stewardship beyond the target disease. These, in turn, influence the health system’s performance in terms of equity, efficiency, access, and quality. In other words, the disease-specific programmatic interventions have system-wide effects, as explained in the examples below.

Whether these system-wide effects are largely positive or negative is much debated. GHIs have been cited to improve access to and uptake of nontargeted services through investments in “revitalizing health facility infrastructure” and enabling availability of trained personnel at health facilities. They have also been argued to have put in place improved drug and commodity supply chains and strengthened national capacity for procurement and distribution, thus easing availability and lowering costs of drugs and commodities. Their emphasis on improved information for specific diseases has been argued to have spurred the demand for high-quality information at the country level as well as innovation in the area of health information and technology for the overall strengthening of health systems.

However, there is an increasing recognition that disease-specific programs have also had effects with negative consequences for national health systems. A framework by Travis et al., modified by Marchal et al., categorizes these negative system-wide effects very broadly as including (1) duplication effects, or the development of parallel systems for planning, implementation, and delivery of services, monitoring, and evaluation; (2) imbalances, primarily due to resource disparities between often generously funded disease programs and resource-starved national health systems, which in turn draw health workers away from government service; and (3) interruptions, understood in terms of hurdles to the routine functioning of the health system due to activities as varied as training, administration, accounting, and fieldwork.

Recognizing both the strengths of disease-specific programs and their potentially positive and negative effects on health systems, there is a broad consensus on the need to develop ways to more effectively harness disease-focused programs, and related funding, to better contribute to strengthening health systems. However, there is far greater uncertainty of how to do this. Below we briefly describe two approaches (the “diagonal approach” and the “T-shaped approach”) that have been proposed in the literature along with their limitations. We discuss the need for appropriate incentive structures aligning the interests of disease-specific programs with broader health system strengthening efforts as key to moving forward and provide examples of progress in this area. We conclude with a brief discussion on how relevant stakeholders might take this process forward.

The diagonal approach was first explicated by Sepúlveda et al. to explain sustained and rapid reductions in child mortality in Mexico from the 1980s onwards. It was defined as the proactive, supply-driven provision of a set of highly cost-effective interventions on a large scale bridging clinics and homes. It rests on the incremental introduction of interventions as vertical programs, which were then “scaled up as experience was gained and programs demonstrated some success,” making use of existing health infrastructure and workers. The experience of the incremental implementation of interventions was compared to the equivalent of a public health polypill. The authors examine how the sequential introduction of oral rehydration salts, the Universal Vaccination Program, and Mexico’s Clean Water Program enabled each program to capitalize on the success of earlier interventions and how these combined with other measures (including legislative amendments to hygiene and sanitation laws and large-scale social protection programs such as the conditional cash transfer program Oportunidades) to bring about dramatic reductions in cholera cases and overall diarrheal mortality.

Knaul et al. build on this analysis by arguing for a diagonal approach to “simultaneously consider the overall goals of health systems in addition to disease-specific priorities and interventions” by using “priority interventions to drive necessary improvements in the health system” in the area of cancer care and control.

More recently, Takemi has advocated that funders and global health bodies adopt a T-shaped approach to strengthening health systems. He defines this as “using vertical funding as an entry point to promote health systems strengthening and achieving UHC [universal health care],” while emphasizing the centrality of “management capacity at local and community levels.” His article cites Japan’s success in using its tuberculosis program in the 1950s and 1960s as an entry point to UHC through a variety of mechanisms. He argues that investments in the tuberculosis (TB) program enabled strengthened surveillance and public health systems and provided fiscal space for social insurance to focus on other conditions and that subsidies provided to local governments as part of the TB control program not only increased compliance with guidelines but also led them to prioritize prevention awareness, vaccination, and provision of services.

Both of these approaches are instinctively appealing. They have been associated with significant health improvements in two very different countries at different stages in their
programs in Guinea, Liberia, and Sierra Leone in 2013, lit-
etics, political, and ethical considerations at the national
countries' abilities to set their own health priorities based on
by the diagonal approach, would potentially further reduce
programs that are then sequentially scaled up, as suggested
Given this background, infusing more funds through vertical
of these approaches as broader frameworks to inform how
best to use disease-specific programs toward efforts to
strength systems in the majority of LMICs today.
First, at a practical level, neither the diagonal nor T-
shaped approaches discuss how to address the well-documented negative effects that disease control programs have
have on national health systems at the level of planning
and implementation, as discussed above.\textsuperscript{1,6,7,11}
Second, both approaches—either through emphasizing the
progressive introduction of vertical programs within health
systems (the diagonal approach) or looking at disease control
programs as entry points to health system strengthening—
have the potential to both catalyze further fragmentation
within health systems and undermine national agency
and ownership, when programs are funded externally.\textsuperscript{12,13} Fragmentation is a distinct concern in an age where new diseases
are emerging rapidly. In such a situation, experience shows
that channeling funding for health system strengthening and
UHC through disease-specific initiatives will likely lead to
their proliferation and expand their budgets, making coordi-
nation even more difficult and encouraging competition
among initiatives for donor and human resources.
External funding for particular diseases, which is what the
vast majority of funding from GHIs is, particularly for HIV/
AIDS, has been reported to have distorted and even over-
whelmed national health budgets in a number of countries.\textsuperscript{7} Given this background, infusing more funds through vertical
programs that are then sequentially scaled up, as suggested
by the diagonal approach, would potentially further reduce
countries’ abilities to set their own health priorities based on
their own epidemiological needs, taking into account socio-
economic, political, and ethical considerations at the national
level. Though GHI funding was supporting HIV and malaria
programs in Guinea, Liberia, and Sierra Leone in 2013,\textsuperscript{14} lit-
tle to no funding had been channeled to strengthening the
essential public health functions and international health reg-
ulations that would have helped prevent and respond to the
Ebola epidemic.\textsuperscript{15–17}
The issues of diversion, fragmentation, and national own-
ership raised above all link well with our final argument,
namely, that there are serious limitations in drawing analogies
across countries without adequate contextualization. Though
there are important lessons to be learned from the success sto-
ries of both Mexico and Japan, there are significant contextual
differences between Japan of the 1950s and 1960s, Mexico of
the 1980s and 1990s, and most LMICs, and particularly low-
income countries (LICs) today, that limit the utility of directly
applying either of these approaches.
Japan’s TB control program was financed using domestic
resources through a combination of general taxes and social
insurance and delivered using public facilities in a densely
populated country.\textsuperscript{18} State capacity to implement health serv-
ces was high and, importantly, ultimate accountability for
both TB and the larger health system lay with a democrati-
cally elected government.\textsuperscript{19} In addition, though the modes of
financing for the TB program and the rest of the health sys-
tem were distinct (general budget and insurance funded,
respectively), this did not entail a completely parallel deliv-
ery structure, an unfortunate development in a number of
programs funded by GHIs.\textsuperscript{10,11,18}
Similarly, Mexico’s child survival improvements were financed, coordinated, and implemented by the state, some-
ting that enabled not only the optimal sequencing of these
programs but also intersectoral coordination in areas as
diverse as water treatment, sanitation laws, education, and
social protection, as evident from the role of the Oportuni-
dades program in bringing about health improvements. So
although each of the interventions to improve child survival
was introduced as a vertical program that was subsequently
scaled up, there was an underlying strategy of making the
pieces of the puzzle fit together, a strategy decided on and
implemented by Mexico’s Ministry of Health.\textsuperscript{8} In short, in
both Japan and Mexico, these approaches were reflective of
nationally generated priorities, funded domestically, and
designed to converge with other elements of the health
system.
Unlike these two examples, many LMICs and almost all
LICs and fragile states today face an altogether different real-
ity: that of a plethora of donors, each with their own lines of
accountability, facing pressures to implement their programs
and meet their targets, and rewarding countries accordingly.
In this process, they go far beyond bringing in additional or
alternative modes of financing. Rather, they often set up sep-
parate clinics, with parallel supply chains, information sys-
tems, and pay scales in contexts where public resources are
already stretched, trained health workers scarce, and popula-
tion densities often low, making physical access difficul-
\textsuperscript{16,7,11} Thus, the setting up of parallel systems that are
not coordinated with efforts at building the underlying
national health system—a strategy that is only justified in the
face of public health emergencies, particularly in fragile
states—becomes the new norm in far too many LMICs. Further, these programs are not implemented as part of a democratic social contract. On the contrary, many programs supported by GHIs bypass national budget processes and more often than not success is claimed by countries considered nondemocratic or even violating basic human rights.20,21

The negative consequences of this process have been discussed above. The global health literature is replete with exhortations to GHIs and health systems to work together to overcome them. These vary from frameworks and approaches such as those discussed above to research that seeks to identify underlying principles of effective engagement.1,22,23

However, to effectively leverage disease-specific programs and related financing, far more than mere exhortations, declarations, and stated commitments will be needed. As we discuss below, there is need for a redefinition of what GHIs are incentivized to do, something that we argue is central if funders and GHIs themselves are to improve alignment by embedding their individual programmatic objectives and targets within the larger goals of improved health outcomes, financial risk protection, and responsiveness.24

In a world of ever-increasing wants competing for scarce resources, redefining incentives means asking ourselves what it is that we seek to do more efficiently, so that we can maximize objectives with available resources. Given interconnectivity of resources and issues, we build on the work of Sparkes et al. to argue that it is here that there is a need for a fundamental rethink, from an emphasis on the efficiency of particular programs to an emphasis on the efficiency of the health system as a whole.25

This implies a shift from the current emphasis on assessing costs and benefits in terms of individual programs to instead assessing the costs and benefits to the health system as a whole.25 The key word here is instead. The health system strengthening portfolios of a number of disease-specific initiatives do examine system-wide effects of their interventions; however, these are often framed in terms of how the components of the health system and their interactions either facilitate or hinder the program of interest, which remains the center of GHI attention. Understood through this lens, the health system serves as a means to achieving the program’s ends.7 In other words, as it currently stands, most health system strengthening initiatives are focused on the slice (the program of interest), not on the pie (the health system).

There are two major advantages of examining costs and benefits of the full health system pie. First, the framing implied by this shift brings to the fore the fundamental tension between programmatic efficiency and system-level efficiency, with a nonconfrontational approach. To make this more explicit, it recognizes that high levels of program efficiency may often be achieved at a high cost to the system as a whole, an efficiency zero—or even negative sum.

Two examples illustrate this. The first is that of Estonia, where within well-performing programs for the management of HIV/AIDS and TB, examining efficiency across these programs (i.e., at the level of the system) as opposed to considering each program separately demonstrates overlaps and misalignments generated through parallel funding flows and provider incentives.25,26 Specifically, because the HIV and TB programs contract providers directly for specific services, separate from the purchasing mechanism of the Estonian Health Insurance Fund, incentives are not aligned with policies of integrated delivery of these services, particularly in primary care settings.

The second example is that of PEPFAR in Uganda. Though the number of patients on anti-retroviral therapy increased more than fourfold between 2005 and 2010, districts with high and medium anti-retroviral therapy investment had 11% fewer outpatient visits for children aged 0–4 years and 5% fewer institutional deliveries compared to districts with low investment. High-investment districts had 22% fewer sputum TB tests compared to low-investment districts. Statistical analysis ruled out lower demand for outpatient visits as driving the results. That these achievements in the area of HIV/AIDS had been achieved at the cost of other services was reinforced by the observations of district health officers who reported the diversion of human resources toward HIV/AIDS programs as well as by a survey of recent medical graduates of Mbarara University that showed that more than 50% of them worked for nongovernmental organizations focused on HIV/AIDS, a disease that afflicted 7% of the country’s population.27,28

The second advantage of prioritizing system-level efficiency is that it takes a holistic approach in considering outcomes across the system. Though both programs and health systems are a means to an end, that of improved health, the maximization of system-level efficiency as opposed to program-level efficiency does take us a step closer to the outcomes we seek to move to, namely, improved health status, financial risk protection, and responsiveness.24 As a result, this approach is able to address misaligned incentives between individual programs or between individual programs and the broader health system that can work against one another in seeking to achieve individual outcomes, as demonstrated by the example from Estonia.

Our argument for a system-level assessment of costs and benefits instead of an assessment at the programmatic level
could be seen as unnecessarily dogmatic and narrow. It could well be pointed out that given that disease programs also contribute to the ultimate objectives of the health system, assessments should take into account costs and benefits at both system and program levels.

Though cognizant of the role of programs in strengthening health systems, we are wary of such a proposition that envisioning retaining incentives at the level of individual programs, with system efficiency a mere by-product. We believe that this does little to incentivize minimizing the overlaps and duplications that we see in many LMICs, ranging from Estonia to South Africa.⁷,⁹

Measuring system-level efficiency is clearly complex, and there is a need to develop appropriate measurable indicators. One issue is that of temporality, in that though the role or contribution of individual programs to system-level efficiency may be only measurable in the long term, any programs and hence programmatic investments are made in the short and medium term. A second challenge is that of multiple causality and hence attributing system-level outcomes to any particular set of inputs, making it difficult to identify relevant data to gather. This in turn has made it difficult to cost system-level improvements based on individual-level components, raising questions of the effectiveness of investments in this area.

However, there has been progress in this area, and recent conceptual and applied work to assess efficiency across programs could play a significant role in taking forward this agenda.²⁵,²⁶ It first disaggregates program activities in terms of their shared health system functions of service delivery, financing, generation of human and physical resources/inputs, and stewardship/governance. It then systematically analyzes across these functions to allow countries to identify duplications, overlaps, and misalignments in program activities as a basis to develop policy options to address them through targeted interventions, an important first step toward improving the efficiency of health systems.²⁵,²⁶ This approach stresses the importance of maintaining a strong focus on accountability for results that is the hallmark of many disease-focused programs, as part of any reform that includes integration or consolidation of health system functions.

It would be naïve to believe that prioritizing system-level efficiency is largely about overcoming technical challenges to its measurement. There exist significant political barriers to health system strengthening that have largely contributed to the emergence of GHIs. These include the long time horizons needed for observable change, difficulty in demonstrating linear causal impact or direct returns on investment, and the possible lack of emotive appeal of health system strengthening (HSS), which often in turn influences its wider appeal among both the political class as well as the electorate. These are all significant limitations for donors looking to directly attribute lives saved to their resource contributions. National governments are thus often left with an unenviable choice between getting funds with the attendant problems of duplication and fragmentation or not receiving funding at all.¹–⁴

Prioritizing system-level efficiency hence needs systematic and sustained advocacy, including by national governments focusing on two areas. The first is the role of robust health systems and system-level responses in the prevention and effective management of life-threatening diseases and epidemics such as Ebola, including the positive externalities that this generates for donor countries in terms of their own health security. The second is the immediate and long-term cost savings that could be realized through improved coordination and alignment and removing duplication and fragmentation by shifting incentives from the programmatic to the system level. Advocacy is also needed to highlight the need for dramatic increases in investments in HSS to achieve Sustainable Development Goal 3 and UHC by 2030, filling a gap estimated at 41 billion USD per year by Sternberg et al.³⁰,³¹ It would be good to contrast this to the current scenario where in 2013 disease specific programs received over 15 times more international funding (34 billion USD) than funding made available for health system strengthening (2.4 billion USD).³²–³⁴

Major global health funders have a central part in enabling any change in incentive structures, which will require a recognition of the limitations of linear, program-level cost–benefit analysis and the willingness to take different approaches that involve greater collaboration and cross-cutting investments in order to leverage the whole system—that is, the whole pie—rather than just focusing on the slice—that is, the individual program. The same is true of GHIs themselves, for whom this may be a challenging transition, requiring them to subsume their own programmatic success to the success of the larger health system, over which they would have less control.

Establishing a forum to bring together GHIs and other stakeholders, particularly national governments, to discuss how best to prioritize system-level efficiency is an important first step to begin altering these incentives. The newly launched UHC 2030 (International Health Partnership) convened by the WHO and the World Bank that brings together national governments, GHIs, multilateral agencies, philanthropic foundations, and civil society organizations is well positioned to serve as such a forum.³⁵
At the national level, the UHC 2030 Partnership will seek to coordinate donors and technical agencies to channel existing interventions and technical support to benefit the system as a whole through a prioritization of system-level efficiency, while keeping in mind the organizational interests of individual stakeholders, including GHIs. This will be informed by UHC 2030’s work at the global level toward the development of common principles for health system strengthening and tools for joint approaches to HSS among its various stakeholders.

We believe that despite the many challenges and obstacles, recent progress made in identifying the potential gains from measuring and assessing system-level efficiency, coupled with the current momentum for investing in health system strengthening and UHC, make this a particularly opportune moment to make a case for incentivizing investments in systems interventions that leverage the efficiency of the whole pie: a strong health system delivering on equity and security.

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The authors are staff members of the World Health Organization and are themselves alone responsible for the views expressed in the Article, which do not necessarily represent the views, decisions, or policies of the World Health Organization or Taylor & Francis Group.

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