In Search of a Common Conceptual Framework for Health Systems Strengthening

by

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After decades of debate, we still fail to understand how to integrate vertical programs into a national health system to produce the best overall health outcomes. For years, WHO has argued for a broader approach by giving priority to and strengthening primary health care - an essential component of the overall health system (Alma Ata, 1978; WHO, 2008.) Analytical studies have long found that narrowly targeted programs create unintended, negative consequences (Takemi and Reich, 2009). Moreover, lessons from the past decade have taught us that a strong, sound national health system is a precondition to scale up and create countrywide sustainable, targeted programs; otherwise, we encounter tremendous barriers in scaling-up and issues of program sustainability. In light of these findings, G8 leaders endorsed the report of the G8 Health Expert Group (2008) to strengthen health systems in order to control communicable diseases. Subsequently, the High Level Taskforce on Innovative Financing for Health Systems (2009) has called for a common “health systems funding platform” among the major international donors. Indeed, a common platform is an innovative approach to resolve some of the contradictions between the different programs.

The foundation on which to build a common “platform” depends on whether the key stakeholders can agree on a common conceptual framework for health system strengthening. Such a framework is necessary for all key stakeholders to focus on a set of strategic elements that can improve the performance of health systems, targeted programs, and primary health care alike.

This paper first examines the purpose of such a framework. Next, we review the common and disparate interests of targeted programs, primary care, and national health systems. We particularly focus on their shared interest. Then we critically review the various existing conceptual frameworks to determine which ones could guide the thinking of policymakers in making decisions that would improve performance. We elaborate on one framework in particular that seems to be best suited. Lastly, we suggest a set of guiding principles in selecting and creating a common conceptual framework that would serve as the foundation for this common “platform.”

Purpose of a framework

Strengthening is a verb; it means to take action. Policymakers who aim to strengthen a health system want to formulate policies to reform the system in order to improve system wide performance. Primary health care and target programs aim to do likewise, but only focus on

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1 We are grateful for the comments by Peter Berman and George Shakarishvili that improved the paper.
2 “Targeted programs” include: (i) disease-specific programs; (ii) a specific set of related programs (e.g. Expanded Program for Immunization); and (iii) programs aiming at a specific worthy population group (e.g. maternal and child health).
certain services, people or diseases as outcomes. Health systems are complex with numerous components and players that interconnect and interact with each other (Atun and Menabde, 2008). In this context, policymakers need to think strategically and get to the root cause of problems. Once the root causes are known, then effective remedial policies can be designed. Consequently, policymakers want to know what strategic elements influence the performance of a system. Then they can concentrate on these critical elements and examine how they can be changed to improve health system performance and achieve desirable outcomes. Therefore, a health systems framework must highlight the strategic elements of a system.

Equally important, policymakers want to know what actions they can take to alter these key elements. In other words, the strategic elements must be actionable or capable of being acted upon. This allows policymakers to alter them in order to improve outcomes, and make continuous adjustments depending on lessons learned from each action taken.

Rationale for a Common Conceptual Framework

Shared and Disparate Interests

Different actors want to strengthen health systems to achieve different purposes. Currently, the world has numerous programs in place put forth by different international organizations, bilateral programs, NGOs, and others - all with disparate priorities and interests. Meanwhile, many countries have recently focused on how to reform their national health system. These countries recognize that their system is not performing well and have since sought to restructure their national systems in order to improve performance. China, India, Rwanda, Mexico, and the United States are notable examples. At the same time, multilateral organizations like the World Bank also have increasingly given support to health systems strengthening, however the concept remains ill defined and the Bank lacks a clear conceptual framework to think about how to conduct systems strengthening – meaning, the purposeful actions that can be taken to strengthen a health system.

In contrast, GFATM, GAVI, UNICEF, and numerous NGOs have traditionally focused on a specific disease or target population group. However, given increasing evidence that targeted programs can undermine other parts of the health system (e.g. through disruptive competition for human resources, financing, equipment, supplies), organizations like GFATM and GAVI have recently created health systems strengthening windows (Jimba, 2009; Msuya, 2003; Cochi et al, 1998; Gish, 1992; World Bank, 2009). 3

Finally, organizations like WHO have traditionally prioritized primary health care (Alma Ata, 1978; WHR, 2008) which is a significant and essential part of the entire health system.

3 Organizations like GAVI have committed US$500M for health systems strengthening between 2006-2010 in support of three (non-exclusive) thematic areas (primarily aimed at the district level and below): (i) health workforce mobilization, distribution and motivation, targeting those engaged in immunization and other health services; (ii) drugs, equipment, infrastructure supply, distribution and maintenance for primary health care; and (iii) organization, monitoring, and management of health services (GAVI Alliance, 2008). However, support for country health system strengthening efforts is contingent on demonstrating that programs will culminate in and contribute to improving immunization coverage. Similarly, GFATM has created a health systems strengthening window through which it provides funds to allow countries to respond to health systems weaknesses either through a specific program/disease or by a “cross-disease” (i.e. cross-cutting) approach benefiting more than one of its three target disease areas. Notably, their support is implicitly tied to progress against the specific disease(s) of interest, not against the performance of health systems as a whole (IHP+, n.d.). Further, funds are to be additional to the contributions of recipient governments, raising issues of sustainability (IHP+, n.d).
However, it does not necessarily capture the entire set of issues relevant to health systems strengthening.

We argue that these focuses do not mean that they have to take mutually exclusive approaches; in fact, there could be considerable structural, institutional, and management overlap between targeted, primary health care, and national health systems (see Figure 1), if they are developed through a common framework. First, health system approaches concern all populations and diseases, and then set priorities (such as allocating resources) between them. At the same time, the health system involves prevention, primary, secondary and tertiary care of all diseases and population groups. Meanwhile, primary health care provides preventive and basic treatment services and drugs, which impacts the broader health system. On the other hand, targeted programs seek to strengthen a specific disease program (e.g. polio) that also affects the health system through the establishment of laboratory networks, surveillance systems, training, drug supply chains and communications networks (Aylward et al, 2000; Loevinsohn et al, 2002).

Figure 1. Structural, Institutional, and Management Overlap
We further argue that the three approaches can reinforce one another. While targeted programs may fill specific programmatic or disease-specific gaps left by weak health systems, without a strong health system targeted programs cannot realize their full potential. For example, problems with procurement, equipment, and drug distribution systems also impact the efficacy of communicable disease control programs (World Bank, 2009). Importantly, a well-functioning health system also depends on the success of targeted programs (Box 1), particularly those that promote prevention which is relatively low cost and can reduce the demand for costly hospitalizations and treatment; this ultimately allows resources to be “freed” and used elsewhere in the health system (World Bank, 2009).

Ultimately, all three approaches have similar concerns – how to improve health services through key health system functions. We now critically review the existing conceptual frameworks which have been put forth to determine which ones can be used to strengthen key system functions in order to improve health systems performance.

Box 1. TB Control and Health Systems Strengthening in China

China’s TB program illustrates how a targeted program overlaps with the health system. China has 15% of the world’s TB cases resulting in 200,000 TB deaths annually. China’s high TB rate is largely due to inadequate public financing for TB control, defects in the delivery system, and out-of-date technology and treatment modalities used to diagnose and treat TB. When China established a TB control program with free diagnostic and treatment services, it encountered serious difficulties given the perverse incentive structure that discourages providers from delivering the most effective and efficient health care. Providers’ incomes are directly tied to the amount of revenue they generate. The more tests performed and drugs prescribed, the greater the provider compensation. Likewise, the longer a provider retains a patient rather than referring him/her to the appropriate provider, the higher the income. Consequently, China finds that its TB control program cannot reach its full potential because case detection, case management, and coordination between providers are all diminished by the perverse Chinese incentive structure. In strengthening the effectiveness of its TB control programs, China must do the following: (i) establish an innovative incentive structure for CDC, hospitals, township health centers, and practitioners to better align performance with TB control and with other measures to promote health system strengthening; (ii) introduce new insurance benefit packages that reduce the financial barriers for patients to seek TB diagnosis and treatment; (iii) provide conditional cash transfers for the poor to seek diagnosis and complete TB treatment; (iv) deliver continuing education to providers on their roles and on correct TB diagnosis and treatment; (v) educate the public to increase their awareness of TB, and reduce stigma surrounding TB in order to support patients to comply with treatment regimens; and (vi) organize and engage communities to be involved in prevention and to monitor the performance of health providers to improve the effectiveness of TB control programs. These reforms will also improve the health system’s performance. Source: Hsiao and Yip, 2009.

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4 The WHR 2008 outlines the key health systems functions as: governance, financing, service provision/delivery, resource allocation and resource generation. Although different health system functions have often been proposed by various authors and entities, many contain a similar set of overarching categories: financing (revenue collection, purchasing, pooling), service provision and delivery (public and private), resource allocation, resource generation, and regulation (Hsiao and Siadat, 2008).
Existing Conceptual Frameworks – A Critical Review

There are different concepts of “health systems” and the term has been defined in a multitude of ways. In terms of national health systems, this concept ranges from mere descriptive models (Roemer, 1991; Roemer, 1993) to more analytical models that, in greater depth, analyze certain key health system functions: (i) fund flow models (Hurst, 1992; Anell and Willis, 2000; OECD, 2003; Docteur and Oxley, 2003); (ii) functional models (Londoño and Frenk, 1997; WHO, 2000; World Bank, 2007); (iii) functional/actors models (Mills and Ranson, 2001 and 2006); (iv) deterministic and predictive models such as actuarial, economic (Yett, Drabek, Intriligator, and Kimbell, 1972; Feldstein and Friedman, 1976), and macro-deterministic models (Borger et al, 2007; Ho and Jorgensen, 2008); and (iv) systems-thinking models (Atun and Menabde, 2008).

However, these concepts of health systems do not necessarily answer how to strengthen health systems. For example, fund flow models assess the financial flow of resources within a health system, but are limited in that they focus solely on the financing function, and ignore the interaction between functions. This criticism is particularly relevant as organizations like GAVI and GFATM have traditionally focused on increasing inputs into the health system, rather than how these inputs can perform better. Financing alone is a necessary but insufficient condition for better health (Hsiao, 2007). This is evident by the fact that additional financing in health systems has not necessarily produced desired outcomes. The most pronounced example is the United States that spends the most on health per capita (US$6,697 or 16% of GDP in 2005) among all high-income OECD countries, yet has the lowest life expectancy and highest infant mortality rate (Hsiao, 2007).

Functional models tell us what functions to focus on but not how to improve them. Functions like financing, health workforce, service delivery, health information systems, leadership and governance, and medical products, vaccines and technologies have already been identified as six building blocks by WHO (2007), however again this approach does not answer how these building blocks can be improved (strengthened) so that the health system performs better.

Economic, deterministic, and predictive models highlight the relationship between demand and supply in various markets that influence health system performance. However, these models have been unable to predict accurately – for example, health care expenditures or health manpower supply (Hsiao and Siadat, 2008).

Finally, systems-thinking argues that a health system is a set of complex interactions between the major elements of a health system and a country’s contextual factors (e.g. history, structure, institutions), such that systems needs to be examined within a particular country context (Atun and Menabde, 2008). While important, systems-thinking alone does not tell us how to incorporate contextual factors to improve system performance.

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5 “Health system” is sometimes used in the context of national systems, but also used to indicate “systems within a system,” such as disease programs, primary care services, or operations. For the purposes of this paper, we focus on national health systems, given that policymakers’ greatest interest is to know what they can do to improve national health system performance (Hsiao and Siadat, 2008).
A Proposed Common Strategic Framework

One conceptual framework of health systems in particular that has been developed for health system reforms is a macro-policy model, often referred as the “control knob” framework, developed by Hsiao (2003) and Roberts et al (2003) which defines a national health system as a “means to an end” and views five key institutions as policy instruments that can strengthen health systems. We argue that this control knob framework can be used to design essential interventions, whether they be targeted, primary care, or systems-oriented. This framework also allows us to think *strategically* as to what actions can be taken to improve health system performance. We give a brief summary of this framework:

**Financing** relates to how health resources are mobilized and allocated, and how health risks are pooled to ensure risk protection (Hsiao, 2003). Importantly, changes in financing (e.g. resource allocation) for targeted programs can also strengthen the broader health system. Financing of Russia’s current TB program is based on historic budgets and retrospective data, and fails to account for changes in patient case-mix, an increasing burden of multi-drug resistance, and the growing incidence of HIV/AIDS cases (Atun et al, 2005). This has resulted in a misallocation of funds for TB, where funds per TB patient have declined between 1542 to 1291 Russian roubles between 2000 and 2001 alone, during a time of increased incidence (Atun et al, 2005). Changes in resource allocation for targeted purposes like TB would ensure that resources are prioritized given the local disease burden, and allow resources to be reallocated away from where they are not a local priority.

**Organization** involves how financing and delivery within a health system are organized, particularly the role of the public and private sector in each (Roberts et al, 2003). Organizational changes related to targeted programs (e.g. polio eradication campaigns) have been shown to strengthen the health system overall in the Americas (The Taylor Commission, 1995). Health systems strengthening through polio eradication was made possible, in part, due to significant investments in communications, transport capacity, and training/human resource development. Global surveillance capacity was further enhanced through the establishment of a global laboratory network, comprised of 147 facilities in countries worldwide, each using the same quality assurance, monitoring, and reporting mechanisms (Aylward et al, 2003). The result being enhanced global surveillance capacity that has been subsequently used to detect and monitor other diseases such as cholera, measles, meningitis, and yellow fever (Aylward et al, 2003; Oliveira-Cruz et al, 2003).

**Payment** schemes establish the incentive structure for providers that shape how providers behave and interact (Hsiao, 2003). Providers’ behavior determines the efficiency and quality of health services and ultimately the total amount of health expenditures. The incentive structure also influences the distribution and retaining of the health workforce. Payment is a key control knob that can coordinate all the services with the services targeted by specific programs. The case of China’s TB program (Box 1) illustrates where a health system strengthening can enhance the effectiveness, efficiency and quality of TB control program.

**Regulation** involves using the coercive power of the state to change the behavior of both individuals and organizations (Roberts et al, 2003). Arguably, regulatory changes relevant to
targeted programs (e.g. mental health in Russia) can simultaneously strengthen the health system by ensuring more transparent and coherent national policies are in place in other disease areas as well. For example, current regulations in Russia discourage multi-sector policies in financing and prevent the shifting of funds from health to social protection; this limits the efficacy of mental health support programs that often require an integrated approach (Atun et al, 2005). Changing regulatory mechanisms in mental health would therefore have implications for other sectors as well (e.g. social protection).

Finally, the behavior of people and organizations can be influenced through, for example, social marketing, advertising, and other means (Roberts et al, 2003). Health education through targeted programs – e.g. for “health cadets” for schistosomiasis control in Gizan, Saudi Arabia; or STD management in Mwanza, Tanzania - has often empowered community members to participate in reporting and surveillance, thereby creating a “culture of prevention” within the broader community. As such, health education campaigns have ultimately helped to improve health outcomes – e.g. reduce incidence and improve case detection (Ageel and Amin, 1997; Aylward et al, 2000; Hayes et al, 1995; Mayaud et al, 1997; Grosskurth et al, 1995; Gilson et al, 1997).

This control knob framework for health systems strengthening is important in that it is strategic, practical and action-oriented. It can be used to illustrate how key health systems functions can be strengthened to improve systems performance; hence, it has applications in a real-world setting. For example, Roberts and Reich (2009) applied it to strengthen the pharmaceutical programs. They first discuss financing options for the pharmaceutical sector and how these in turn affect consumers’ use of drugs, distribution of costs, and risk protection. Second, they argue that the payment of drug retailers and wholesalers (including how payment affects patient access, use, cost-bearing) are also relevant to strengthen the pharmaceutical system. Third, the organization between the public and private sectors is considered, which in turn affects the incentive structures and processes of consumers and providers. Government regulations (or delegated power to non-state entities) can modify or change provider behavior through, for example, ensuring product information is clearly labeled, and requiring product testing for quality assurance. Finally, government may persuade or influence key stakeholders in the pharmaceutical sector (doctors, patients, drug dispensers) to change their behavior through information-sharing and social marketing, for example. The control knob framework has been similarly applied to immunization programs and human resources for health (e.g. Ethiopia). Meanwhile, several countries has used it successfully to diagnose the root causes of their health system problems and then used it to design policies to address these problems. China, Vietnam, Uganda, and Cyprus are some examples.

**Guiding Principles for a Common Strategic Framework**

It seems sensible and desirable to establish a set of principles in developing a common conceptual framework for health system strengthening. It should have several characteristics.

*Shared common interest.* A common conceptual framework should consider all major stakeholder interests and see where they overlap and differ. All parties that may be affected should be accounted for and have their goals and objectives considered regarding how to strengthen the health system to maximize benefits to all.
Strategic. A common conceptual framework should be strategic in that it focuses on the critical parts of a system that national policy makers should direct their attention. It should therefore provide a “road map” to lead a health system from where it is currently to where it would like to be in the future. The framework should be “strategic” also in the sense that it involves choosing how best to respond to circumstances of a dynamic health systems environment, given limited resources and organizational capacities.

Actionable. A common conceptual framework should be action-oriented, rather than merely abstract or descriptive. Health system strengthening requires actions to improve the functional parts of a system and their interactions. Of course, we are policy makers are interested in a framework that has real applications in real-world settings, as the pharmaceutical sector and immunization cases illustrate.

Systemic. A health system has many components and they interconnect and interact with each other for which a common conceptual framework must take into account. In addition, context matters. For instance, a nation’s government capabilities, institutions, and ethical values all influence what policy to adopt to strengthen a health system or a particular program(s) that are viable and effective in implementation. Stating the obvious, a framework must have the flexibility to derive policy options that are conditioned on the presence of a strong, moderate, or weak state. In weak states, where government-run health systems do not work well due to politics, bureaucracy, and corruption, independent targeted (rather than system-wide strengthening) programs may deliver more effective health services.

Practical. A common conceptual framework that would consider a country’s particular context will therefore be practical, or guided by practice and action, rather than simply based on abstract theory and principles. As such, a common framework can also be used or put into effect in different settings.

Evidence-based. A common conceptual framework should be evidence-based. For example, one macro-policy model - the “control knob” framework - was initially developed through a process of scientific inquiry – i.e. observation, hypothesis formulation, prediction, test and experimentation (Roberts et al, 2003). The authors collaborated with more than twenty nations in their planning of major health system reforms, observed and analyzed the problems facing these countries, as well as the instruments that could be tried to affect change. From their observations and available evidence, the authors developed hypotheses to formulate this common conceptual framework that has been tested in many countries, with evaluations and experiments currently in progress.
Conclusion

The need for a common conceptual framework for policymaking is clear. From such a framework, a platform can be developed to coordinate the actions of different donor organizations. We propose a set of principles for such a framework. We also argue that one conceptual framework of a health system – the “control knob” framework maybe the best one that currently exists. It is diagnostic and yet can also be used to design interventions, is evidence based, and views the health system as a means to an end. Additional improvements can be made to this framework to further serve the needs at hand.
References


