HNP DISCUSSION PAPER

Integration of Health Systems and Priority Health, Nutrition and Population Interventions

A Framework for Analysis and Policy Choices

Rifat Atun, Kelechi Ohiri and Olusoji Adeyi

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Health, Nutrition and Population (HNP) Discussion Paper

Integration of Health Systems and Priority Health, Nutrition and Population Interventions:
A Framework for Analysis and Policy Choices

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This framework was developed as part of a work program on the integration of health systems and priority health, nutrition and population interventions. The work program is financed by the World Bank.

Abstract: A longstanding debate on health system organization relates to the benefits of integrating programs that emphasize specific interventions into mainstream health systems to increase access and improve health outcomes. This debate has long been characterized by polarization of views and ideologies, with protagonists for and against integration arguing relative merits of each approach. Recently, the debate has been rekindled due to substantial rises in externally funded programs for priority health, nutrition and population (HNP) interventions and an increase in international efforts aimed at health system strengthening. In this paper we present a conceptual framework and an analytical approach to define and assess the nature and extent of integration in relation to critical health system functions.

The framework can also be used to systematically compare and contrast programs in different settings to generate meaningful evidence to inform policy. In this framework, we define integration as the extent, pattern, and rate of adoption and eventual assimilation of priority health interventions into each of the critical functions of a health system, which include, inter alia: (i) governance, (ii) financing, (iii) planning, (iv) service delivery, (v) monitoring and evaluation and (vi) demand generation. The framework and the analytical approach are intended for evaluative and formative studies of policies, systems and programs.

While it would help in each context to describe what a fully integrated health system might look like, the framework is agnostic about whether or not a particular program or system should be fully integrated; that, in our view, is a matter for policymakers to decide in each context.

Keywords: integration, health systems, service delivery, interventions, vertical, horizontal

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PART I – INTRODUCTION

A longstanding debate on health system organization relates to the benefits of integrating programs that emphasize specific interventions into mainstream health systems to increase access and improve health outcomes. This debate has long been characterized by polarization of views[1;2;3;4;5;6] and ideologies, with protagonists for and against integration arguing relative merits of each approach. Recently, the debate has been rekindled due to substantial rises in externally funded programs for priority health, nutrition and population (HNP) interventions and an increase in international efforts aimed at health system strengthening[7].

This debate, which has been driven by narrow binary considerations of integrated versus non-integrated, has also developed an ever-expanding lexicon of its own. For example, the programs that emphasize specific interventions are also called 'vertical', 'categorical', 'stand-alone' or 'free-standing' programs, while integrated programs are also known as 'horizontal programs', 'integrated health services' or 'horizontal approaches'. This abundant vocabulary has been further enriched by addition of terms such as 'diagonal' or 'oblique' to describe approaches that are not purely vertical or fully integrated.[8]

The presence of both integrated and non-integrated programs in many countries suggests that there may be benefits to each approach. Further, the level, extent and timing of integration in different settings vary. However, the relative merits of integration in various contexts and for different interventions have not been systematically analyzed and documented. In practice, such an analysis is complicated as there is no commonly accepted definition of 'integration', which is used loosely to describe a variety of organizational arrangements for a range of programs in different settings. Further, as the nature and extent of integration varies, there are methodological challenges to comparing various interventions in different settings.

There is, hence, a need to define what is meant by integration and deconstruct it in a way that adequately captures various means by which priority interventions are integrated into health systems. There is also a need for a conceptual and analytical framework that will allow systematic comparison of different programs and a variety of organizational arrangements in different settings.

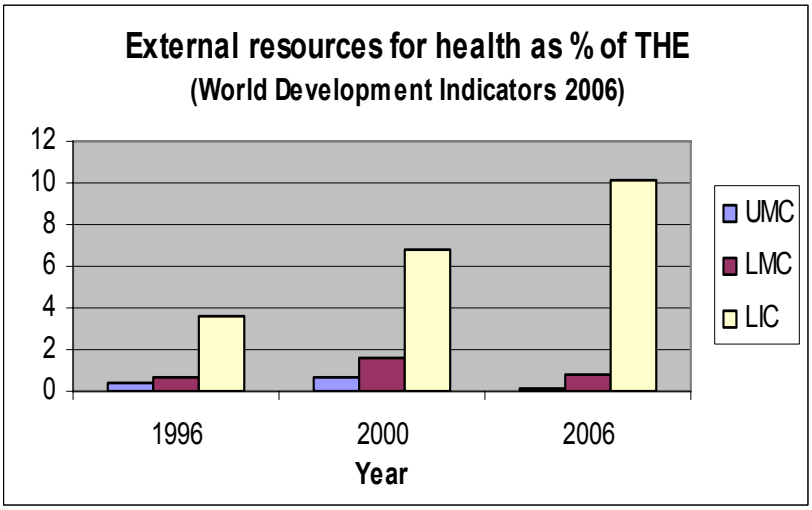
In this paper we present an analytical approach that enables us to define integration in relation to critical health system functions. We also describe a conceptual framework which can be used to analyze the nature and extent of integration in different settings along with the factors which have influenced the integration process. The framework can also be used to systematically compare and contrast programs in different settings to generate meaningful evidence to inform policy.

The conceptual framework and the analytical approach are intended for use to address the following question in relation to the extent and nature of integration of priority health interventions and health systems: "What do policymakers and other principals need to

consider as they make decisions in each context?" It is intended to facilitate analysis in evaluative and formative studies of – and policies on – integration, but it is not intended as a prescription.

The increase in intervention-specific, externally funded programs has caused a resurgence of long-running and polarized debates about "integration". Yet external financing is but a small fraction of total health expenditures in low- and middle-income countries (See Figure 1 below). Therefore, the proposed framework and approach are relevant and applicable not only externally financed interventions but those financed from domestic sources.

Figure 1. External financial resources for health as a percentage of total health expenditure



World Development Indicator Database (Classifications based on 2007 GNI per capita)

LMC = Lower Middle Income, UMC = Upper Middle Income, LIC = Low-income country, THE = Total Health Expenditure.

The conceptual framework and the analytical approach presented in this paper are not intended to serve as the only framework or approach that are applicable to the question stated above. Indeed, the authors recognize limitations of any framework or normative approaches to complex issues in global health that are not fully understood and are influenced by heterogeneous set of problems and intervention aimed at addressing these in varied contexts.

We developed the proposed framework because of its potential relevance and applicability to real-life problems at the country level. The reader is encouraged to explore other frameworks. For example, we consider useful and complementary to this framework the approaches presented in The World Health Report 2000, *Health Systems:*

Improving Performance[9] and The World Development Report 2004, *Making Services Work for Poor People*[10] and health system approaches developed by others[11;12].

PART II – THE CONCEPTUAL FRAMEWORK

We examine how priority health[1] interventions are introduced and incorporated into health systems. Using previous research methodologies and approaches used to assess priority interventions and health systems[13;14] and drawing on perspectives from management, strategy and innovation studies, we consider both the theoretical background for and the empirical evidence of adoption, diffusion and institutionalization of such interventions[15;16;17;18;19;20;21]. Specifically, these include empirical studies on the adoption and diffusion of innovations within health systems[22;23;24;25;26;27].

In this framework, we define integration as the extent, pattern, and rate of adoption and eventual assimilation of priority health interventions into each of the critical functions of a health system, which include, inter alia: (i) governance, (ii) financing, (iii) planning, (iv) service delivery, (v) monitoring and evaluation (M&E), and (vi) demand generation.

An 'intervention' in this context refers to combinations of technologies (e.g., vaccines, drugs), inputs into service delivery, organizational changes and modifications in processes related to decision making, planning, and service delivery.

We view a priority health intervention as a phenomenon in the diffusion of innovations, and consider them as an idea, practice, or object that is perceived as new by an individual or a unit of adoption[19], while recognising that in some cases the interventions which have previously been implemented in small scale are scaled up and increased in intensity. In such instances, the 'newness' relates less to the technical element of the intervention itself but the organizational changes, new financing schemes and novel processes that accompany scaling up, intensification, integration and eventual institutionalization of the intervention.

Empirical evidence suggests that adoption and diffusion of innovations in health systems are influenced by the nature and complexity of the innovation[27;28;29;30] how the innovation is perceived by the users and adopters[31], contextual circumstances[22;32;33], and health system factors[34;35]. Further, adoption and diffusion processes are shaped by factors pertinent to the adoption system. These factors include prevailing cultural norms, beliefs and values of the key actors and institutions within the adoption system[36] in particular professional groups[37] and opinion leaders[38;39]; social networks[40]; systems and structures that enable learning within an organization[41]; and, the absorptive capacity for new knowledge within the adopting organization[42;43].

Drawing on relevant empirical evidence and theoretical propositions, we propose that the adoption and diffusion of new priority health interventions and the extent to which they are assimilated or integrated into the 'general' health system will be influenced by the

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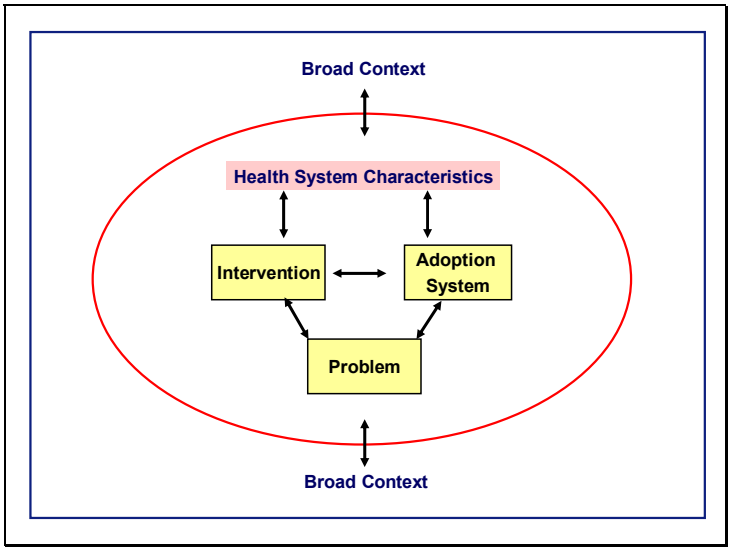
[1] Health interventions, here refers to Health Nutrition and Population interventions, including buy not limited to Nutrition programs, Family Planning, Reproductive Health interventions

nature of the problem being addressed, the intervention, the adoption system, the health system characteristics, and the broad context. We build on this proposition to develop a conceptual framework which integrates these five constituents that interact to collectively influence the extent, pattern and rate of adoption of an intervention within a health system, namely: the nature of the intervention, the adoption system (key actors and institutions), the health system characteristics, and the context within which innovation diffusion takes place. Our framework also captures the interactions and interconnections between the intervention, adopters, the health system and the broad context which critically influence the adoption process and hence allows a systematic and holistic analysis of adoption and diffusion of priority health interventions or health interventions in general. We discuss in more detail below the framework which is shown in Figure 2.

Figure 2. Conceptual Framework for Analysing Adoption and Diffusion of Priority Health Interventions



Priority health interventions are introduced as innovations to health systems, which are complex adaptive systems[28;44;45] that change and adapt in response to endogenous and exogenous actions, disturbances or triggers. As with other dynamic complex systems health system comprise interacting feedback loops and non-linear relationships. In such system the effects of decisions are separated in time and space, hence, the consequences of actions that involve one or more elements of the system may not be immediately visible or the outcomes easy to predict accurately. These relationships extend beyond the health system elements. They are intricately linked to the context within which the system is embedded. The changes in the context influence system elements and in turn changes in system elements affect the context. Further, each intervention is internalised within a distinctive adoption system consisting of a collection of agents (individuals and organizations that operate within a set of cultural norms and values) that act in ways that are not predictable. The actions of these agents are interconnected—action by one agent changes the context for other agents. The interaction of the innovation and the adoption

system with the context influences the responsiveness of the context, which, in turn, influences the adaption, translation, integration and assimilation of the innovation in the health system. These dynamic interactions result in unpredictable system responses to interventions and non-linearity of the diffusion process and can lead to unintended consequences.[12]

2.1 THE PROBLEM

The characteristics of the problem will influence the rate at which an intervention designed to address it is adopted, integrated and assimilated into the general health system. For example, the scale of the burden (real or perceived) will influence the perceived necessity for a robust response. In turn, the perceived urgency of the problem (e.g. an infectious disease with transmission dynamics that could usher rapid spread with severe economic and social consequences) and the social narrative around the problem will influence the speed with which an intervention is introduced and integrated into the general health system. At times a rapid response may necessitate speedy introduction of the priority intervention with limited integration. This may or may not be followed by gradual integration as the problem is better controlled.

2.2 THE INTERVENTION

Priority health, nutrition and population interventions comprise multiple elements and facets – series of technological, organizational and process innovations. Their adoption affects a range of users. As such, they range in complexity depending on the number of elements, facets, temporal considerations and the stakeholders involved. Hence, these interventions can be grouped according to according to their complexity

For example, vaccination for childhood illnesses involves use of a new technology in a selected client group (who can be readily identified) by one or more health professionals as a single occasion or for a limited number of occasions at regular intervals. In contrast, integrated maternal and child health programs involve multiple interventions grouped together, delivered by a multidisciplinary group of health workers over a period of time at different levels of the health system to a range of stakeholders. (Figures 3 and 4) As such, integrated maternal and child health programs are much more complex as compared with interventions involving immunization alone.

Figure 3. Intervention complexity: episodes of care and number of elements

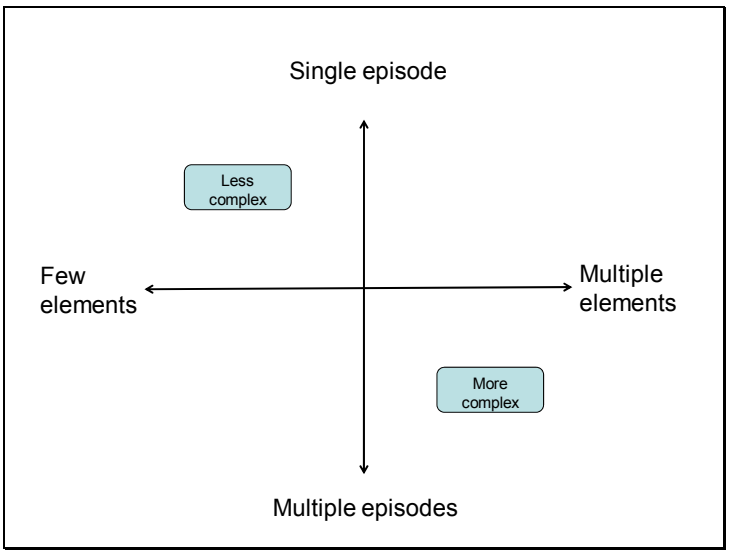
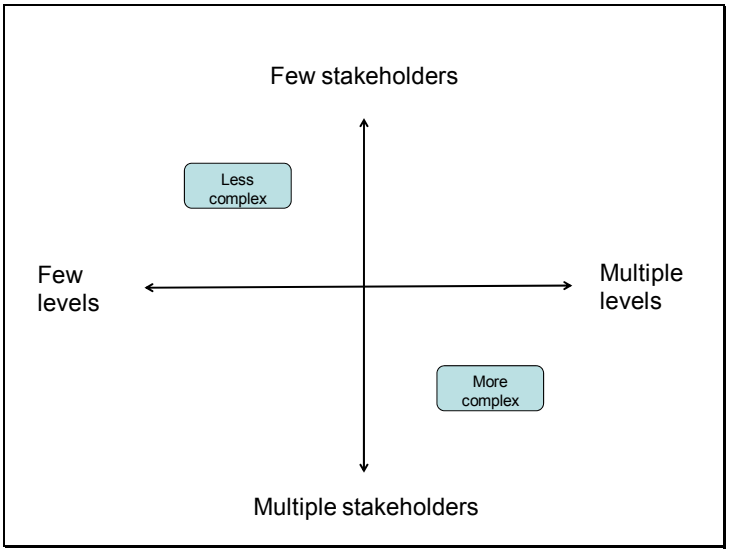


Figure 4. Intervention complexity: levels of care and number of stakeholders involved



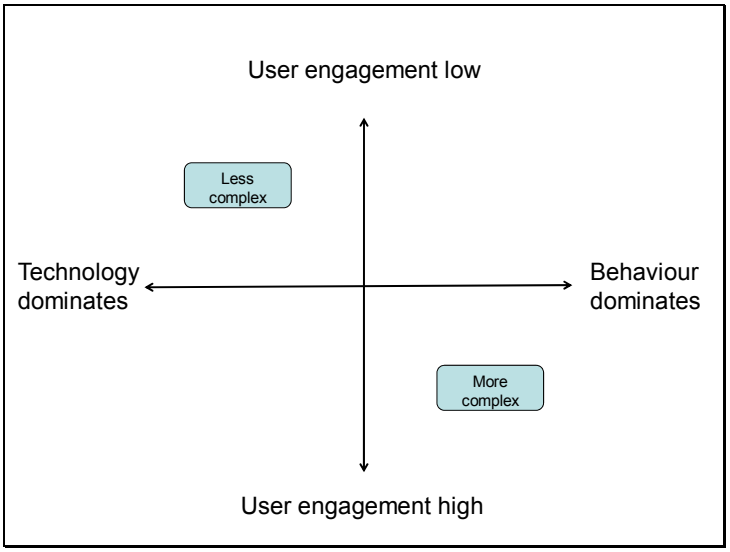
Intervention complexity is also determined by the number and nature of technologies used to address a problem, and the degree of user engagement needed to achieve improved outcomes or risk reduction. For example, interventions to address onchocerciasis (river blindness) or lymphatic filariasis (elephantiasis) typically use a single drug ivermectin administered once annually (and in the case of lymphatic filariasis

combination with albendazole) to infected or at-risk populations in endemic areas, in collaboration with local communities. Often, the drug is administered as part of mass treatment program.

In contrast, interventions for addressing HIV/AIDS usually involve multiple novel technologies (diagnostic tools to determine infection levels to start treatment and to monitor effect and side effects of drugs used, new antiretroviral treatments for HIV/AIDS and medications for treating co-infections), multiple workers (e.g. outreach workers, doctors, nurses, social workers, and peers) and organisations (civil society, communities affected by HIV/AIDS, media, human rights groups) working at different levels across several sectors (e.g. health, education, penitentiary system, and law enforcement) for various groups some of which are difficult to reach (e.g. commercial sex workers, injecting drug users, transient populations). The extent of interventions for these groups are numerous, ranging from harm reduction programs that combine technological and behavioural interventions, to elaborate diagnostic, treatment and palliation regimes for HIV/AIDS and co-infections applied over many years and often in resource poor settings. For these interventions to succeed, along with multiple technologies requiring multiple stakeholder involvement, intense user engagement and behaviour change are critical.

Clearly, as compared with interventions used for onchocerciasis or lymphatic filariasis HIV/AIDS interventions are relatively more complex. (Figure 5)

Figure 5. Intervention complexity: nature of intervention and extent of user engagement



Perceived attributes of innovations, such as 'relative advantage', 'compatibility', 'trialability' and 'observability', as well as their 'complexity' influence the speed and extent of their adoption and diffusion.[19] Interventions which are less complex more readily lend themselves to standardisation and replication as compared to complex

interventions. Consequently, they are more readily scaleable than interventions of greater complexity which require greater customisation to meet needs of the specific client groups in different contexts. However, whatever their perceived benefits, trialability, compatibility, observability or the level of complexity, by nature, new interventions are viewed with caution or circumspection by multiple potential adopters. This affects the extent, pattern and rate of their adoption and is discussed below in more detail.

2.3 THE ADOPTION SYSTEM

The adoption system refers to a collection of key actors and institutions which have varied interests, values and power distribution. These actors which include policy makers, managers, healthcare purchasers, health workers (physicians, nurses, professions allied to medicine), patients, professional associations, patient groups, civil society organisations and so on also have differing perceptions of the benefits and risks of an intervention, and consequently occupy disparate positions and roles in the adoption process.[34;46] In turn, the perceptions of these actors are shaped by a number of factors such as communication of the 'benefits' of the intervention, how the intervention 'conforms' to existing institutions, prevailing beliefs and value systems, inherent incentive systems – especially the extent to which the innovation aligns incentives for users, provider and managerial agencies – and the perceived 'legitimacy' of the intervention (in particular cognitive, technical, economic and normative legitimacy)[36;47;48] Collectively, the perceptions and positions of these actors determine the 'receptivity' of the adoption system to the intervention.

2.4 HEALTH SYSTEM CHARACTERISTICS

Innovations such as priority health intervention are not simply disseminated but are gradually adopted, diffused, integrated and assimilated into health systems. The adoption, diffusion, integration and eventual assimilation of an innovation such as a priority health intervention into the health system is not linear, nor does it occur in discrete steps. In contrast, it comes about as a result of a cumulative and unpredictable translation process which shapes and transforms the innovation to better align it with the health system in which it is introduced.

Adoption and integration of a priority intervention means not just a change in service content but goes deeper than that, with regulatory, organizational, financial, clinical and relational changes involving multiple stakeholders. Hence, the feasibility of adopting, integrating and assimilating a health intervention will be influenced by the prevailing governance arrangements, regulatory environment, macro-organisation of the health system, financial design, resource allocation, provider payment systems, service delivery approaches, monitoring and evaluation mechanisms and in particular resource availability.

Integration has multiple facets and can occur at different levels of the health system – local, district, regional, or national depending on the prevailing governance arrangements. Each of these facets relate to a critical health system function, which include, inter alia,

(i) governance, (ii) financing, (iii) planning, (iv) service delivery, (v) monitoring and evaluation (M&E), and (vi) demand generation. These are briefly discussed below.

Integration of a priority intervention into broader health system governance functions will involve alignment with existing regulatory mechanisms, creation of unified accountability frameworks, integration of reporting, and establishment of a common performance management system.

Integration into financing functions can occur in various ways, for example pooling of priority program finances into the existing national/local programs, into a 'common basket' for one or a number of interventions, into health sector funds through a 'sector wide approach', or directly into the government/ministry of health budget through 'budget support'.

Priority HNP interventions can also be integrated into health system planning functions at local and national levels, especially in relation to needs assessment, priority setting, capacity planning, and resource allocation.

Integration of monitoring and evaluation often underpin the integration of planning and governance functions. Integration of M&E systems for priority programs and health system will depend on use of shared indicators and establishment of integrated data collection, recording, analysis and reporting systems.

Demand generation is a critically important but frequently overlooked health system function, as many programs in health systems emphasise the supply-side interventions. Integration of demand generation could involve use of joint systems for financial incentives (for example conditional cash transfers, health insurance), or joined-up approaches for individual- and population-level health education and promotion initiatives.

Presence of several critical health system functions and multiple levels of intervention means that in different settings the extent and nature of integration of priority interventions at various stages of adoption will diverge from one health system to the next. In any setting, as programs are more widely adopted, translated to reflect the local health system realities and become more 'mature', the possibilities for greater integration and eventual assimilation will increase.

2.5 THE CONTEXT

In this framework we define the broad context as the interplay of the demographic economic, political, legal, ecological, socio-cultural (including historical legacies), and technological factors in the environment in which the foregoing considerations (the problem, intervention, health system characteristics and adoption system) are considered.[12] This context matters. Adoption, integration, and assimilation of a priority intervention into a health system and its sustainability will be dependent on a number of contextual factors.

Critical events (such as regime change, a catastrophe) and technological change (such as a new diagnostic tool, new and affordable drug, and a new prevention mechanism) provide opportunities for more rapid adoption and integration of priority interventions into mainstream health systems. Opportunities are also created when demonstrable synergies and benefits can be achieved by integration (such as nutritional interventions with immunization, joint programs for neglected tropical diseases, tuberculosis and HIV/AIDS and so on). However, even when evidence on the benefits of an intervention or its integration into the general health system exists (providing technical and economic legitimacy), political economy and prevailing socio-cultural norms (cognitive and normative legitimacy) will influence the desirability of adoption and integration of the innovation.

In some contexts, integration will be hindered by factors that influence the health system but extend beyond it, for example fiduciary requirements imposed on donor agencies by their governing structures which require them to 'ring fence' funding streams or be able to attribute results to their investment. Another is the complexity of fiscal relationships among levels of government, as between central, provincial and local governments in some federal systems. Lower tiers of government might have no incentive to implement centrally funded interventions unless such funds were earmarked by and from the central level. We recognize these context specific constraints and do not consider them to be inherently bad or good. Finally, the severity of the problem coupled to frailty of the political and economic situation may call for expediency, while fiscal space considerations, which introduce spending ceilings on the health system, may impose constraints on integration.

PART III – POTENTIAL APPLICATIONS

To the policymaker, a framework is only as good as the extent to which it is applicable to real-life problems. We envisage the use of this framework in a number of country case studies. Each case study would have two main dimensions; a diagnostic dimension that emphasizes the past and current situations, and a formative dimension that focuses on the future. The formative part of the case study would be informed by a combination of the results of the diagnostic part and the informed preferences of policymakers, analysts, advisors. The overarching question in this part of the exercise is "how do the policymaker, senior advisers and other principals wish to use the findings in their context"?

Each country case study would include customization of the conceptual framework to ensure the relevance and validity of the exercise, as well as a questionnaire and a topic guide to be used for data collection. The latter is for in-depth interviews with key informants.

An immediate product of each case study would be an action-oriented report on the *purpose, extent* and *nature* of integration of the priority intervention(s) under study into critical health system functions. This report would include both a summary table and a narrative account. The summary table would map and classify the *extent* and *nature* of integration of the priority intervention(s) into one of the following categories for each critical health system function: fully integrated, partially integrated, not integrated, and unknown. By examining each critical health system function in this manner, the framework is relevant to both the macro-analysis of integration (for the overall health system) and the micro-analysis of integration (for example, for only one function). While it would help in each context to describe what a fully integrated health system might look like, the framework is agnostic about whether or not a particular system should be fully integrated; that, in our view, is a matter for the policymakers to decide in each context.

In addition to the summary table, a narrative section would provide a detailed account of the purpose of the integration (as perceived by key actors or as stated in key documents), organizations, decisions and choices made, and the policy and programmatic trade-offs considered. The narrative would also summarize the findings from the interviews of key actors on their perception of the 'relative success', or lack thereof, of integration, and the impacts and unintended consequences on each critical health system function as perceived by them. Depending on data availability, this narrative would also capture secondary data to triangulate and validate findings from interviews of key actors. The report would conclude with locally identified options and preferences for future action that arose from the case study and associated consultations with policymakers, analysts and advisors.

We anticipate that the use of this framework at the country level will lead to its refinement over time, and result in a more robust tool. It will help to develop a data-based typology of health systems the could be compared and contrasted in terms of their

adoption of interventions, how or whether more vertical programs have been integrated into those systems, the time frame for doing so, and the extent to which the external or donor environment played a role, among other factors. A comparative analysis of decision space in the decentralization of health systems is an example of such multi-country studies[49].

PART IV – CONCLUSIONS

While the terms 'vertical' and 'integrated' are widely used they each describe a range of phenomena. In practice the dichotomy between vertical and horizontal are not rigid and the extent of verticality or integration varies between programs. We present an analytical framework which enables deconstruction of the term integration into multiple facets, each corresponding to a critical health system function. Our framework shifts the boundaries of the debate which has been stuck in a binary mode to a new terrain, which allows discussing integration in reference to multiple levels in the health system and in relation to critical health system function. The framework also allows analysis of the extent and nature of integration of priority HNP programs in different settings.

Adoption, diffusion and eventual assimilation of a priority health intervention in a health system necessarily involve their translation and transformation to ensure alignment and integration of intervention elements with critical health system functions. The speed and extent of this integration will vary – in part, determined by the intervention complexity the health system characteristics and the context within which the intervention is introduced. We present a conceptual framework which brings together these critical elements that affect adoption, diffusion and integration and in doing so enables systematic and holistic exploration of the extent to which different programs are adopted and integrated in different settings and the reasons for this variation.

Our conceptual framework builds on theoretical propositions and empirical research in innovation studies and in particular adoption and diffusion of innovations within health systems and builds on our own earlier empirical research. As with any conceptual or analytical framework our model will evolve over time. However, for now, it will serve as a useful vehicle to move us away from the false dichotomy between integrated and vertical approaches which has so rigidly dominated the debate.

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