SAVING LIVES, ENSURING A LEGACY: A HEALTH WORKFORCE STRATEGY FOR THE GLOBAL HEALTH INITIATIVE

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Because Health Workers Save Lives.

FOREWORD

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Because health workers save lives. This is the central credo of IntraHealth International and the impetus behind the Global Health Workforce Policy Papers, which are being launched with this edition. IntraHealth's mission is to enable health workers to serve communities most in need around the world. To support health workers, we strengthen health systems, leverage partnerships, harness technology, and foster local solutions to health care challenges.

This is a period of great ferment in the field of human resources for health (HRH). Subsequent to the release of the 2006 World Health Report, which drew global attention to the health workforce crisis, the Global Health Workforce Alliance organized the 2008 Global Forum on Human Resources for Health. That Forum culminated in the Kampala Declaration and Agenda for Action. Since the Kampala Forum, a substantial number of the 57 countries identified by the World Health Organization (WHO) as having a health workforce crisis developed national HRH plans. There are examples of countries that have taken strong action and introduced exciting innovations, such as Ethiopia, Mozambique, and South Africa. Donor engagement has increased, notably by the US and Japanese governments, as well as movement toward a Joint Platform for Health Systems Funding by the WHO, Global Fund, GAVI Alliance, and World Bank. Regional organizations such as the Asia-Pacific Action Alliance for HRH and Partners in Population and Development are also mobilizing behind an HRH agenda. As recently as May 2010, the World Health Assembly achieved a groundbreaking change with the unanimous adoption of the WHO Global Code of Practice on International Recruitment of Health Personnel. Prominent figures, such as Bill Clinton and Bill Gates, have become advocates of health systems strengthening, including HRH. HRH has also been featured in a number of major conferences, including Women Deliver and the 2010 International AIDS Conference.

There is also progress in distilling a shared set of good practices for advancing HRH. These include two reports from the WHO, *Task shifting: Global recommendations and guidelines,* and the recently released *Global policy report: Increasing access to health workers in remote and rural areas.* IntraHealth is proud to house the HRH Global Resource Center, the world's largest online resource of publications and information on HRH, which is supported by USAID through the Capacity*Plus* project.

Technology applications are opening new avenues for cost-effective approaches to training, supervising, and supporting health workers. The eHealth/mHealth movement is growing at a dizzying pace, with the support of donors such as the Rockefeller Foundation. The July 2008 meeting in Bellagio, Italy, *Making the eHealth Connection: Global Partnerships, Local Solutions,* and subsequent Bellagio eHealth Call to Action, signed by over 140 international leaders, helped spur growth of eHealth and mHealth. New technologies such as *Frontline SMS* and *CommCare* are facilitating access to data and applications and encouraging collaborative approaches to problem-solving.

IntraHealth OPEN, launched in 2009, is supporting local capacity and innovation in Open Source technology for global health in partnership with world music star Youssou N'Dour and numerous leaders in the fields of public health, technology, and entertainment. This coalition joined together to form the OPEN Council, which is championing a health worker-centered approach to open technologies for better care. With support from USAID, IntraHealth has also developed the iHRIS suite of software solutions, which helps ministries of health and organizations use data to plan, manage, and track qualifications for health workers.

While all this is encouraging, the gap between the need for more health workers and the reality confronting low-income communities remains enormous. Little progress has been made in redressing the health worker shortage in the 57 health workforce crisis countries. Implementation of national HRH strategies has been slow. Resources to support health workers remain inadequate. False dichotomies between "vertical" and "systems" approaches to health development persist. National leaders have not yet made sufficient commitment to resolving the health worker deficit and there is an urgent need to foster local leadership. Pervasive weaknesses remain in educating, retaining, and supporting health workers. Most of all, much more attention must be given to listening to health workers and responding to the needs they articulate.

In the face of those challenges, President Barack Obama's Global Health Initiative (GHI) is highly promising. Its commitment to achieving the Millennium Development Goals *and* developing sustainable health systems is very much to be commended. We applaud the explicit commitment to improving human resources for health.

The GHI commitment to HRH must now be translated into a clear strategy with precise objectives, a sound technical approach, and resource commitments. Maurice Middleberg's monograph lays out an ambitious yet realistic plan for realizing the health workforce aspiration in the GHI. It builds on the research literature, the experience of IntraHealth, and the lessons learned from many organizations. IntraHealth is pleased to endorse the proposals in this paper.

Saving lives, ensuring a legacy: A health workforce strategy for the Global Health Initiative is the first of a series of papers on the global health workforce. The ideas in these papers will be made available in a variety of settings, formats, and media in order to reach a wide audience. Our goal is to help advance both thinking and practice about HRH. I hope the papers will engender lively discussion and debate and we encourage readers to provide feedback.

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ABSTRACT

The health workforce crisis is widely recognized as a critical obstacle to achieving the Millennium Development Goals, as well as the global health goals of the United States Government (USG). The Obama Administration's Global Health Initiative recognizes this problem and includes expansion and appropriate deployment of the health workforce among its goals. However, this has yet to be translated into a coherent USG strategy with clear goals, resource allocation, technical approach, and indicators of progress. This paper addresses that gap in the US approach.

The United States should set a goal of increasing the global health workforce by 232,000 by 2014 and 580,000 by 2020. The absolute expansion of the workforce should be accompanied by improvements in equitable access to health workers, health school capacity, health worker retention, and health worker productivity. A five-part technical approach is proposed, including building the constituency for human resources for health (HRH); optimizing policies, plans, and management systems; strengthening workforce development and support; and fostering gender equity. The US should focus its HRH program on countries that have a health workforce crisis and in which the US is making a substantial investment to improve health; 25 countries meeting these criteria are identified. Progress in these HRH priority countries should be rigorously monitored using a small number of key indicators.

Management of the HRH program should be vested in an HRH coordinator at the US Agency for International Development (USAID), who would have oversight, coordination, and budget authority, though responsibility for program implementation would remain with USAID programs and other USG agencies currently engaged in HRH projects and activities. A minimum of $550 million per year over 10 years should be invested by the United States in addressing the health workforce crisis.

The strategy proposed herein is consistent with the overarching principles of the Global Health Initiative and advances its aims.

BECAUSE HEALTH WORKERS SAVE LIVES

In 1993, I was on assignment in Pursat, Cambodia. My colleagues and I entered a small, one-room, rural health post. Lying on the floor was a heavily pregnant woman suffering from eclampsia, a dangerous condition of pregnancy-induced hypertension. Without treatment, she would go into convulsions and die. The local midwife attending her lacked the skills to recognize the disease and would not have known how to administer the needed treatment, even if it were available. My colleagues and I placed the woman in a vehicle to be driven to the nearest town, where she might receive treatment. I never found out what happened to her. I think about her often.

This incident and many like it over almost 30 years have brought home to me the indispensable role of the health worker. Trained, supplied, and supported health workers are the bridge between the vast ocean of medical knowledge and the health of communities in need. Innovative approaches that make skilled and equipped health workers available to underserved populations have yielded remarkable public health gains. It is the health worker that makes access to vaccines, diagnostics, treatment, and preventive measures possible.

Access to skilled health workers remains difficult or impossible for millions of people. President Obama's Global Health Initiative (GHI) recognizes this problem and commits to filling the void. Progress in meeting the need for health workers will require a carefully constructed and adequately financed health workforce strategy. This paper proposes such a strategy for the Global Health Initiative. While reasonable people may disagree over the particulars of the strategy, the need for a thoughtful approach to building the health workforce is urgent. I hope this paper will encourage and help US government policy-makers translate the noble aspirations of the GHI into concrete action.

WHERE IS THE HEALTH WORKER IN THE GHI?

It is now widely acknowledged that systemic deficits in human resources for health (HRH) pose a major barrier to the achievement of the Millennium Development Goals. The World Health Organization (WHO) has identified 57 countries that have a human resources crisis; all of these countries have fewer than 2.3 doctors, nurses, and midwives per thousand people (WHO 2006). Among the challenges are:

- Severe shortages in the absolute number of health workers
- Maldistribution of the health workforce
- Poorly developed HRH policy frameworks
- Weak human resources management systems
- Lack of human resources data and information systems to support policy and planning
- Under-funded and inefficient national systems for preservice education, in-service training, and continuing professional development
- Attrition of health workers
- Out-migration of health workers, especially in the period shortly after graduation from health professional schools
- Low health worker productivity and/or quality of care
- Poor work climates.

The GHI released by the Obama Administration addresses HRH. Among the targets for the GHI is "Increased numbers of trained health workers and community workers appropriately deployed in the country" (Implementation of the Global Health Initiative: Consultation document n.d., 12). The GHI also includes HRH among its components ("Improving human resources for health by training additional health workers; deploying workers; motivating, mentoring and retaining trained workers") (Ibid, 15). This recognition of the importance of HRH is laudable.

The GHI stresses the importance of achieving sustainable gains in health systems, including HRH. An important GHI strategy for advancing sustainability is integration across vertical programs so that resource pooling and synergy can be achieved where feasible and appropriate.

The extent to which the United States Government (USG) is effectively addressing the health workforce crisis and HRH is hard to assess. On the one hand, there is a clear mandate in the Lantos-Hyde legislation reauthorizing the President's Emergency Plan for AIDS Relief (PEPFAR) for training and retaining 140,000 new health workers. However, as the United States Agency for International Development (USAID) report to Congress on health systems strengthening acknowledges, USG systems are not well suited to tracking funding or progress on cross-cutting health systems (USAID 2009). This is compounded by the

approach to appropriations by Congress, which allocates money to specific diseases or health conditions (e.g., child survival, HIV/AIDS, malaria), rather than to health systems issues. There are no specific HRH goals for USG programs outside of PEPFAR.

Within the USG global health portfolio, there are pockets of excellence in HRH, including some very good projects, hard-working technical working groups, and knowledgeable staff. The USG provides extensive financing for training of health workers and other HRH activities, generally embedded within disease-specific programs. USG-supported projects and programs are tackling many thorny HRH challenges ranging from task-shifting to strengthening human resources information systems.

However, the existence of multiple HRH activities across a range of countries and projects is far from a coherent approach supporting realization of the GHI. The USG lacks an HRH strategy to support the GHI. None of the following has been defined for HRH within the GHI: objectives, focus countries, resource allocation, technical approach, organizational structure, leadership, staffing, metrics, or approach to monitoring and evaluation. The HRH component, like other health systems elements of the GHI, stands in marked contrast to the more vertical programs, such as family planning, HIV/AIDS, malaria, and maternal and child health, which do have well-developed strategies. Compounding the growing concern in the HRH community is the USG response to the PEPFAR 140,000 new health workers goal. No overall strategy for achieving this goal has been developed in the two years since the legislation was enacted. There is, in fact, grave concern that progress toward this goal has been slow, compounded by the absence of appropriate metrics for measuring progress as to the number of "new" workers and the number of workers "retained."

The GHI rightly posits the importance of developing HRH (and other health systems) but currently falls short of defining a meaningful approach to the issue. To move beyond good intentions, the USG must define and implement an HRH strategy. In doing so, the USG could make optimal use of the funds available for HRH, create a model for addressing the other health systems issues included in the GHI, and help ensure that this pillar of health systems is available to support the USG contribution to achieving the Millennium Development Goals.

KEY ELEMENTS OF AN HRH STRATEGY

This paper proposes a strategic approach to HRH that would help support implementation of the GHI. The key elements of the proposed approach are as follows:

1. Setting a global goal for increasing the health workforce
2. Identifying a set of priority countries for HRH development that capitalizes on other USG global health initiatives
3. Defining clear, measurable, and comprehensive objectives for the priority countries
4. Articulating a comprehensive, evidence-based technical approach
5. Allocating and tracking resources commensurate with objectives
6. Assessing progress on a regular basis using a parsimonious set of key indicators
7. Continuous learning, including testing promising practices and encouraging adoption of best practices
8. Proposing an organizational structure supporting HRH within the USG that provides the necessary leadership, expertise, and coordination, including timely reporting and information-sharing.

The HRH strategy proposed in this paper is also consistent with the GHI's principles—a woman- and girl-centered approach; strategic coordination and leveraging; leveraging partnerships with multilateral organizations and the private sector; country ownership; health systems strengthening; improved monitoring and evaluation; and research and innovation.

HRH OBJECTIVES FOR THE GHI

As currently formulated, the HRH goal in the GHI is *Increased numbers of trained health workers and community workers appropriately deployed in the country* (Implementation of the Global Health Initiative: Consultation document n.d., 13).

This rather vague formulation, which marks all the GHI health systems goals, stands in marked contrast to those put forth in the vertical programs, which are numeric, ambitious, and quite specific—e.g., prevent 12 million HIV infections; provide AIDS treatment to four million people; treat 2.6 million tuberculosis cases, reduce maternal mortality by 30%, and so forth. The GHI goal for HRH provides no standard against which to measure progress, specifying neither a numeric goal nor a time frame.

Health systems goals, including HRH, may be perceived as more difficult to state in measurable terms than disease-specific goals for which there are clear biomedical markers. But this line of argument is overblown. Worse yet, lack of clarity as to goals breeds lack of accountability and direction. It is a maxim in bureaucracies that "you get what you measure." As this paper will demonstrate, specific health workforce goals amenable to measurement can be defined.

Identifying Priority Countries

The HRH strategy, including objectives, should be closely linked to the other USG priorities for global health. As the GHI properly points out, effective global health programming requires focus. The USG cannot do everything well everywhere. This is certainly true for HRH development. Without unwarranted rigidity, the USG should concentrate its efforts to build HRH on a manageable set of strategically selected countries where it can achieve the greatest impact.

The GHI correctly emphasizes the importance of country ownership. In proposing specific countries, no vitiating of this principle is suggested. Country-specific targets and methods will have to be the subject of dialogue with host governments as well as civil society and businesses. But, like every other major USG global health program, HRH needs a targeted list of countries in which to achieve progress or it is simply an ephemeral global wish.

The selection of HRH priority countries should build on the choices already made as to country priorities for other USG global health programs. HRH development is integral to and reinforces the USG's major global health goals, including reducing maternal and child mortality, increasing access

to family planning and other essential reproductive health services, combating HIV/AIDS, malaria, and tuberculosis, and reducing the impact of neglected tropical diseases. Priority countries have been defined for each of these programs (Lois Schaefer, 2010, personal communication). Accordingly, the HRH strategy should abet the vertical programs and help accelerate their progress. An HRH strategy should also have as a starting point the list of countries defined as experiencing a health workforce crisis by the WHO.

A comparison of the 57 WHO health workforce crisis countries with the priority countries for the USG HIV/AIDS, family planning, maternal and child health, tuberculosis, and malaria programs yields a list of 25 countries that are both health workforce crisis countries *and* a priority for at least three USG global health programs. These countries are identified in **Table 1.**

Table 1: WHO Health Workforce Crisis Countries Identified as a Priority by at Least Three USG Global Health Programs

Afghanistan	India	Pakistan
Angola	Indonesia	Rwanda
Bangladesh	Kenya	Senegal
Benin	Liberia	Tanzania
Cambodia	Madagascar	Uganda
Dem. Republic of the Congo	Malawi	Zambia
Ethiopia	Mali	Zimbabwe
Ghana	Mozambique	
Haiti	Nigeria	

The list includes 18 African and six Asian countries as well as Haiti, while incorporating six of the first eight "GHI-plus" countries (Bangladesh, Ethiopia, Kenya, Malawi, Mali, and Rwanda).

An explicit HRH goal and strategy targeting specific countries is needed to optimize the use of extant resources, as well as to estimate additional resource requirements. USAID supports a number of HRH-specific global, regional, and bilateral HRH projects. By having a set of priority countries (as well as an overall strategy), the resources of these projects could be properly directed to serve a larger strategy advancing progress in HRH.

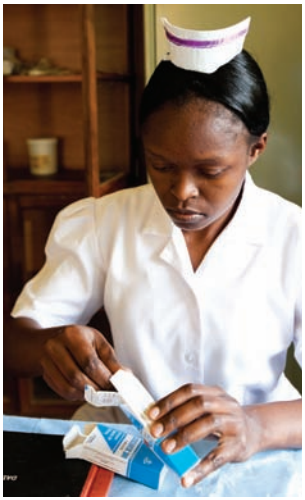
An HRH strategy aimed at a specific group of countries would also provide the framework for partnership with governments, other bilateral donors, and multilateral organizations in pursuit of the shared goal of addressing the health workforce crisis. For example, the framework could facilitate coordination with the Japanese government's commitment to training 100,000 health workers or with the Joint Platform for Health Systems Funding being developed by the WHO, GAVI Alliance, the World Bank, and the Global Fund.

HRH Objectives for the Priority Countries

These 25 countries have a collective shortfall of 3.8 million health workers, based on WHO data[1]. The US contribution to major global initiatives has been conventionally set at equivalent to the US share of global GDP, which now stands at about 25% (International Monetary Fund 2010). However, India and Indonesia—which should be able to address their health workforce issues with only modest infusions of technical assistance—account for 1.5 million workers of the total shortfall of 3.8 million. Excluding them as major targets of US HRH assistance leaves a shortfall in the remaining 23 countries of about 2.3 million health workers. This suggests a goal for the US of supporting the deployment of an additional 580,000 health workers (or 25% of the 2.3 million needed in the remaining 23 countries). This goal does not have to be reached in one fell swoop. In its report on the sub-Saharan African situation, the Task Force on Scaling-Up Education and Training of Health Workers proposed a 10-year time frame for redressing the shortage of health workers on the subcontinent (Global Health Workforce Alliance 2008). A similar approach could be used by the GHI, with the aim of increasing the qualified, appropriately deployed health workforce by approximately 58,000 per year.

Of course, increasing the absolute number of qualified health workers, while necessary, does not suffice in addressing the health workforce crisis. Without supportive system strengthening, the larger pool of trained health workers might never be hired or might be badly used and deployed. The GHI recognizes this, as it calls for "Improving human resources for health by training additional health workers; deploying workers; motivating, mentoring and retaining trained workers." Hence, the HRH objectives for the GHI must take a broader approach.

[1] The author thanks Eric Friedman for supplying relevant data. Responsibility for the estimates rests with the author. Detail can be found in the appendix.



The GHI objectives for HRH could then be reformulated as follows:

- Train, deploy, and equip an average of 58,000 health workers per year through 2014, for a total of 232,000 in 23 priority countries (India and Indonesia are excluded) during the period 2011-2014.
- Train, deploy, and equip at least 350,000 additional health workers in 23 priority countries (India and Indonesia are excluded) during the period 2015-2020, adjusting the figure upward to account for population growth as needed.
- Increase equity of access to health workers in the 25 priority countries, including equity of access by residence (e.g., rural-urban), socioeconomic class, and groups historically subjected to stigma and discrimination.
- Increase countries' capacity to produce appropriate health workers as needed in the 25 priority countries.
- Improve health worker retention in the 25 priority countries.
- Increase health worker productivity in the 25 priority countries.

Progress in meeting these objectives would accelerate growth and the best use of the health workforce, as well as yield progress in ensuring that more health workers means greater access to good health care by those who are underserved.

Identifying 25 countries as priority for USG HRH assistance does not exclude the possibility of contributing to the health workforce in other countries. These are proposed as the priorities for investment in HRH. Strategic investments in other countries may be warranted. These should be made on a case-by-case basis where it would further USG global health goals.

Integration and Coordination in Country Programs

The GHI gives heightened emphasis to integration across vertical programs so as to achieve sustainable gains in health systems. Many vertical programs routinely engage in human resources development through training and, to a lesser degree, management development. However, the incentives governing vertical programs lead them mainly to retrain existing health workers, rather than producing additional health workers who can contribute to primary care, as well as meeting the goals of the vertical programs (with the important exception of PEPFAR). Furthermore, vertical programs are often ill-equipped to deal with more systemic HRH issues, such as equitable distribution of health workers, retention in rural areas, and inequities related to gender.

The approach suggested here would encourage a pooling of resources among the three or more USG global health programs operating in a priority country to advance HRH through a unified strategy. A strategic and integrated approach to HRH at the country level could guide the contribution of each vertical program and make these programs more efficient. All of the vertical programs would be encouraged to support the development of a cadre of health workers who can carry out an array of essential health services, including HIV/AIDS, malaria, tuberculosis, maternal and child health, family planning and reproductive health, and neglected tropical diseases. Where necessary, this would also create the opportunity to educate the staff and managers of vertical programs on HRH, a specialization with which many health professionals have only a passing familiarity. By working with local authorities to develop explicit HRH objectives for each country, programs would have added incentive to seek out synergies in pursuit of a shared goal. Moreover, this would create an opportunity to recognize and reward vertical programs' contribution to HRH development.

Regional and Global Approaches

The approach suggested here also lends itself to achieving economies of scale and South-to-South cooperation. There are natural affinities or at least geographic proximities among the 25 countries; e.g., southern Africa, Francophone Africa, and south Asia. This could be turned to advantage through regional approaches to training, technical assistance, or procurement of materiel in order to achieve efficiencies in the use of resources. Attention should be given to building the capacity of regional organizations that can serve as resources of HRH expertise. The GHI's HRH strategy should also promote South-to-South cooperation among the 25 countries, so that they can learn from each other and become resources of mutual support.

In addition to regional efforts, the GHI should have in place a structure supporting global leadership, experimentation, learning, and information-sharing. This would serve as the vehicle for testing new approaches of wide potential applicability, promoting rapid diffusion of advances in the state of the art, and encouraging sharing of lessons learned among the countries that are a priority for the GHI.

TECHNICAL APPROACH[2]

Goals and objectives must be supported by a coherent, evidence-based approach. This paper touches on only the highlights of what the technical approach to an HRH strategy for the GHI should include. The proposed technical approach includes the following elements, each of which is described briefly below:

- Building the constituency for HRH
- Optimizing policies, plans, and management systems
- Developing the health workforce
- Supporting the health workforce
- Fostering gender equity in the health workforce.

Figure 1 depicts the proposed HRH technical approach for the GHI (Capacity*Plus* 2010).

Figure 1: Technical Approach

[2] The technical approach described here draws heavily on the experience of the USAID-funded Capacity*Plus* project, which is led by IntraHealth International, with partners Abt Associates, IMA World Health, Liverpool Associates in Tropical Health (LATH), and Training Resources Group, Inc. (TRG). The author wishes to acknowledge the contribution of colleagues in that project.

Building the Constituency for HRH

The need to expand access to qualified health workers must compete with a broad array of other demands on the time, attention, and resources of policy-makers. The GHI should help HRH advocates move their issue up on the political agenda so that it commands the attention of decision-makers. HRH advocacy requires building a diverse coalition that includes respected leaders and champions, represents an array of concerned constituencies, and does the hard work of building agreement around a platform of action that is evidence-based and responsive to local needs. A coalition that only includes health professionals is weaker than one that also draws on other sectors and leaders. For example, HIV/AIDS advocates were very effective at building a broad-based coalition that included affected people, public health and humanitarian groups, faith-based groups, artists, businesses, and national security proponents.

The role of coalitions is to develop and implement a well-conceived advocacy strategy that includes a clearly defined problem or opportunity, clear goals, well-articulated solutions, and a targeted communications campaign. Advocacy must be grounded in technically sound solutions that will stand up to rigorous examination. However, sound technical approaches must be embedded in a strategy for persuasion and communication that will lead to change. A person occupying a political position generally considers multiple criteria, not just health benefits. These include the reaction of constituents and potential adversaries, costs, administrative feasibility, and the trade-off with other issues.

The Uganda Health Workforce Advisory Board provides a good example of how coalition-building and good advocacy can help advance HRH (Capacity Project 2007). This group brought together key stakeholders on a regular basis, initially focusing on human resources information systems and then moving on to address a broader agenda. It helped in raising the profile of HRH and moving a program forward.

A similar model may be found in the Country Coordination and Facilitation mechanism proposed by the Global Health Workforce Alliance and augmented by multisector consultations with dozens of countries, including many proposed as GHI HRH priority countries[3]. It entails supporting (or developing where they do not exist) national-level HRH alliances that include concerned ministries (e.g., health, finance, education, civil services) and stakeholders from other sectors such as civil society, health professional associations, development partners, and the private sector. The GHI should promote the Country Coordination and Facilitation approach.

[3] The author thanks Eric Friedman for bringing this point to his attention. For further information see: http://www.who.int/entity/workforcealliance/countries/ccf/ccf/en/index.html

Optimizing Policies, Plans, and Management Systems

The GHI should help countries develop the policies, plans, and management systems governing the health workforce that can aid progress. Every population should be served by a health team, an approach pioneered in Brazil (Haines, Wartchow, Stein, Dourado, Pollock, and Stilwell 1993). The composition of the team and the allocation of responsibilities among team members should be determined by an evidence-based approach to delivering safe, effective care at the lowest cost that responds to local health needs. Task-shifting and the creation of innovative health cadres, such as the surgical technicians introduced in Mozambique, are components of the health team concept. Health teams should be supported by a legal and regulatory framework that defines scopes of practice, licensing, and accreditation.

Health teams need good management systems and good data. Stronger HR management systems are often the key to expanding and retaining staff. These include recruiting, hiring, deploying, compensating, and supervising staff. Of particular importance is a good human resources information system that facilitates workforce planning, deployment, and development. The iHRIS software suite supported by the USAID-funded and IntraHealth-led Capacity*Plus* global project provides modules for human resources information management.

To be effective, health teams need adequate resources, competitive and equitable compensation, and competent financial management. Resource mobilization depends on advocacy and planning. Health ministries are notoriously weak at presenting the economic and financial case for health investments. The GHI could assist health ministries in making the economic case for investing in the health workforce by providing training and technical assistance for economic and financial analysis, budget management, and use of the Resource Requirement Tool[4] developed by the Global Health Workforce Alliance or similar HRH cost-projection models.

The utility of strengthening policy, planning, and HR management can be found in the Kenya Emergency Hiring Plan. In 2006, Kenya had a large number of trained but unemployed nurses while the country was suffering from many vacant posts. This was largely due to a complex and lengthy process that took as much as a year to recruit and hire a nurse. For the period of the Emergency Hiring Plan, the policies and rules governing hiring were radically revised, recruiting and hiring were outsourced, and candidates applied for posts in specific parts of the country, rather than for generic posts. As a result of USG support for the Emergency Hiring Plan, 830 nurses were hired and placed in 200 facilities in approximately six months (Fogarty and Adano 2009). Data from the Health Workforce Informatics System, developed with Centers for Disease Control support, demonstrated that the increases in the nursing workforce yielded a 9% rise in the number of functioning government health facilities (Gross et al. 2010).

[4] For further information see: http://www.who.int/workforcealliance/knowledge/publications/taskforces/ftfproducts/en/index.html

Workforce Development

There are too few health workers. More health workers must be produced. However, the current production capacity of health professional schools is inadequate to the task. In addition, the existing health workforce often lacks the necessary skills or has been trained in skills ill-suited to the needs of the population it is serving. Current approaches to in-service training are often highly deficient. However well designed any one training event may be, the entire array is rarely grounded in a staff development strategy reflecting a needs assessment of the workforce, the health needs of the population, and a long-term approach to building the capacity of the entire health cadre.

The GHI should support reform of preservice education to meet the needs of rural and other underserved areas. Reform along these lines would mean educating the right people from the right places in the right skills and motivating them to return to their home communities. Educating urban elites in the capital city using curricula and models borrowed from outside the developing world and then expecting graduates to provide primary health care in rural areas is not a winning approach. Recruiting from the rural communities where there are health worker deficits, having schools in those regions, and adapting the curriculum to local needs increases the likelihood that graduates will stay in the region (WHO, 2010b).

This will require a shift in investments to schools in rural and underserved areas and creative approaches to school financing. The public sector and donors are unlikely to mobilize the resources needed to educate sufficient health workers. The challenge is to mobilize capital to develop and expand health schools. There are a variety of resource pools that are underutilized but could provide significant additional funding for preservice education. In many countries, the nongovernmental organization (NGO), faith-based organization (FBO), and for-profit sectors are already playing an important role in educating health workers (WHO 2006). The International Finance Corporation is coordinating a study of private health schools with an eye on the twin goals of increasing investment in health schools and maintaining appropriate quality standards. The GHI should help countries create incentives and build an enabling environment that will foster investment in preservice education directed toward underserved populations. A variety of mixed models that involve public-private partnerships is also possible.

Greater investment must be accompanied by greater efficiency. Health schools are notoriously inefficient and often badly managed. In Africa, an average of 30% of enrolled health school students never graduate, representing tremendous lost potential (Global Health Workforce Alliance 2008). The scholarly acumen of health school leaders often outweighs their management skills and there is too little attention to the nuts and bolts of administration, budgeting, cost control, and facility management.

Deans of health schools often lack the services of staff specializing in budget, building, and infrastructure management. Greater attention to efficiency in school management could yield significant gains in productivity. Moreover, investments in preservice education should be carefully targeted to address the critical bottlenecks in health worker production, which vary from country to country and school to school. The GHI could help countries (and donors) make best use of available resources by improving management and supporting analyses and strategies that optimize the return on investment in preservice education.

Mali provides a good case for strategic investment in preservice education. In this instance, the Capacity Project provided assistance to the Gao School of Nursing, a private-sector nursing and midwifery school located in the underserved northern part of the country (Capacity Project 2008). Students are recruited from northern Mali, the curriculum and practica are adapted to the health needs of that region, and graduates are successfully encouraged to return to their home areas.

Preservice education must be complemented by a needs-based in-service training strategy. In-service training is too often a hodgepodge of workshops, courses, and seminars untied to a larger plan for staff development. The GHI should promote a strategic approach to in-service training based on a clear definition of the services to be provided by each type of health worker and good information about the training needs of health workers.

Preservice education, in-service training, and continuing professional development should be linked and support career-long learning. The starting point for educating and training the workforce is a deep understanding of the health needs of the population to be served. The goal is to continually upgrade the competencies of health providers so they can more effectively meet health needs in light of evolving epidemiology, growing knowledge, and changing technologies.

Optimal use should be made of information and communications technology for training. While not a panacea, the increasing access to electronic communication in all its forms holds great promise. For example, the USAID-funded Capacity*Plus* project is developing a platform for health worker training and supervision through the use of mobile phones.

Workforce Support

In some countries, the retention of health workers is a serious problem, including the out-migration of physicians and nurses. Low health worker productivity, including the provision of poor quality care, is as serious a problem as attrition, if not more so. Workforce retention and productivity are closely linked issues. The incentives that keep workers are also those that foster high productivity—retention and productivity are in many ways two sides of the same coin. The GHI should promote evidence-based approaches to increasing retention and productivity.

The most important lesson learned is to ask health workers what incentives matter most to them. We cannot assume that we know why health workers are leaving or are unproductive. Health worker motivations are complex. Compensation is only one factor. Indirect financial incentives play a role, including housing, transport, and school allowances for children. Opportunities for education and continuing professional development can be important incentives. The regulations governing health workers matter, as issues such as scope of practice or rural service requirements can have an effect. The workplace environment is also crucial given that supportive supervision, the supplies and equipment to carry out one's duties, good HR management systems, a safe workplace, freedom from gender inequities, and recognition for good work all count.

This means that a tailored bundle of incentives is needed to attract, retain, and increase the productivity of health workers. The specific elements of that bundle must be tailored to the incentives that matter most to health workers, while also meeting tests of feasibility and affordability.

The retention issue is most acute in rural areas. There, multiple factors contribute to health worker attrition beyond salary and wages, including housing, schooling for children, gender bias against female health workers, social isolation, lack of contact with professional colleagues, stressful work environments, and lack of opportunity for continuing education. A holistic,

context-sensitive approach is needed to improve retention in rural areas. The WHO recommendations on improving retention of rural health workers provide a good guide to action (WHO 2010a).

An example of using simple, low-cost incentives to improve productivity can be found in Zanzibar. These include posting signs at health facilities showing work hours, introducing weekly staff meetings and daily work plans, providing training in teamwork and customer care, improving supervision and performance management, ensuring better patient flow, and fostering greater community involvement (Ruwoldt and Hassett 2007).

Retention also has an international dimension, since significant numbers of health workers migrate among countries. The recent Gates Foundation-funded Sub-Saharan Africa Medical School Study revealed that migration is the leading cause of loss of African medical school faculty (Mullan and Buch 2010). This means the loss of individual health workers is compounded by losing the teachers who can grow the health workforce. The USG's positive approach to the new WHO code of practice regarding international recruitment of health workers is commendable and should be sustained (WHO 2010b). The GHI could be a constructive force in promoting adherence to the code of practice, as well as spurring dialogue within the USG on the links between international and domestic health workforce needs.

Gender

A sound GHI approach to HRH must also address the critical issue of gender. Gender affects who sits in decision-making positions, entry into health professional schools, opportunities for advancement, workplace climate, and other issues of human resources management. Every aspect of the GHI approach to HRH must be disaggregated and analyzed to account for the differential impact of gender.

Integration of gender issues into an HRH technical approach should address the following:

- Gender-disaggregated data about the health workforce
- Access to preservice education
- Recruiting, hiring, and deployment policies and practices
- Gender equity in managerial and decision-making roles
- Compensation equity
- Access to in-service training and other professional development opportunities
- Gender differentials in constructing incentive structures to promote retention and productivity
- Workplace climate, including sexual harassment, security, and gender-based violence.

ASSESSING PROGRESS

Like other aspects of health systems, HRH has been the subject of widespread debate and discussion of appropriate indicators for monitoring and evaluating progress. There are multiple dimensions to the health workforce issue. There has been controversy over issues of definition, measurement, and comparability of indicators.

Notwithstanding these longstanding debates, a great deal of progress has been made in developing good indicators. Complexity of measurement cannot be used as an excuse for failing to address the health workforce crisis, setting unclear objectives, or not making reasoned judgment about whether progress is occurring. Indicators are just that—they provide clues and insight into whether change is occurring, which must be buttressed by evaluation and research, as well as sound judgment by seasoned managers and leaders.

Measurement serves the purpose of assessing progress against objectives. Table 2 draws upon, with certain adaptations, a recent WHO publication on HRH monitoring and evaluation to propose indicators measuring progress against the objectives set forth earlier in this paper (Dal Poz, Gupta, Quain, and Soucat 2009). These indicators should be applied at the country level and measured over time on a regular basis to track progress.

Table 2: Proposed Indicators for Assessing HRH Progress under the GHI

Objective	Indicator	Description	Numerator	Denominator
Increased number of health workers	Stock (and density) of total health workers and different categories of health workers in a given country	Total number of health workers (relative to the population)	Total number of health workers (by category of health worker)	Total population of the country
Improved equity of access to health workers	Stock (and density) of total health workers and different categories of health workers by region of the country	Total number of health workers (relative to the population) by region of the country	Number of health workers (by category) in rural areas (or other relevant geographical division)	Total population of rural areas or other relevant regions
Increased production of new health workers	Workforce generation	Total number of new health workers (relative to the size of the health workforce)	Number of graduates of health professional education institutions in the last year	Total number of health workers
Improved retention of health workers	Workforce loss ratio	Ratio of exits from the health workforce	Number of health workers who left the active health labor force in the last year	Total number of health workers
Increased health worker productivity	Provider productivity	Relative number of specific tasks performed among health workers	Number of specific tasks performed over a given period by a given health provider	Total number of specific tasks performed over time in the same period among all health service providers

These indicators do not address all the relevant HRH issues. Each indicator has its strengths and weaknesses. Additional indicators would be needed to meet the monitoring and evaluation needs of individual country programs. However, individually and collectively, the five indicators proposed above provide a useful barometer for tracking progress against the HRH objectives proposed earlier in this paper. They are also deliberately few in number so as to increase the likelihood of building monitoring and evaluation systems that can reliably collect and report on valid data on a regular basis. Adequate human and financial resources should be dedicated to tracking and reporting progress.

EVALUATION, RESEARCH, AND LEARNING

The parsimonious set of indicators proposed in Table 2 are intended only as a core set that the USG can track systematically across a set of countries. These can and should be complemented by other studies that feed into a larger effort to generate lessons learned from individual countries and across nations. There remain significant gaps in our understanding of HRH that need to be addressed.

Under the GHI, up to 20 countries will be designated GHI-plus nations that will benefit from additional infusions of funds for the purpose of learning. Consistent with this intent, a reasonable allocation of total HRH funds should be set aside for evaluation studies, operations research, and modeling to further the development of the evidence base supporting HRH policies and practices across a variety of settings.

A clear research and evaluation agenda should be established for use of these funds. The following is suggestive of some of the key areas for operations research and modeling:

- Case studies of the role of coalitions and leadership groups in advancing the HRH agenda
- Comparative cross-country assessments of HR management systems
- HR data collection and analysis systems
- Cataloguing scopes of practice, licensing, and accreditation approaches across countries
- Health school management and efficiency
- Health school curricula and teaching models for high quality service delivery in low-resource settings
- Technology applications for in-service training
- Cost-effectiveness of retention and productivity incentives
- Resource requirements for scaling up the health workforce
- Studies of interventions to increase equitable access to health workers.

These are intended as indicative of important areas for further studies. A more refined research and evaluation agenda should be developed as part of the GHI approach to the health workforce crisis.

The research agenda should be accompanied by a clearly articulated and well-reasoned approach to research dissemination and utilization. The outcomes of research and evaluation must reach service providers, managers, and policy-makers in a timely way and be translated into practice.

COST

Physicians for Human Rights has estimated the average per-capita cost of training new health workers using WHO data from the report of the High Level Taskforce on Innovative International Financing of Health Systems (HLTF) (Eric Friedman, personal communication, July 6, 2010; WHO 2009). This estimate assumes a mix of 47% nurses, 27% community health workers, 10% physicians, 7% clinical officers, and the balance of 8% for other health workers (midwives, orderlies, radiology technicians, laboratory technicians, dental technicians, pharmacists, and pharmacy aides).

Using this mix, the average cost of training a new health worker is estimated at $6,006. This would place the cost of training 580,000 new health workers at about $3.48 billion.

Training is only part of the cost of expanding the pool of qualified, properly deployed health workers. Drawing on the HLTF, Physicians for Human Rights estimates the per-capita cost of salary and incentives at an average of $3,123 per health worker per year. This figure could be used as a proxy for the additional per-worker investment the USG should make to help ensure health workers have the wherewithal to be effective. That is, the USG should count on spending about $3,100 per new health worker to defray the initial cost of entry into the health workforce and purchase of needed infrastructure, equipment, and supplies. This would add another $1.81 billion over 10 years to the cost.

The US role has historically been that of providing technical assistance to support optimal management and use of an expanding health workforce. A robust program of technical assistance would cost about $1 million per year per country or $10 million per country. Much of this would be in the earlier stages of USG assistance and should diminish over time as country capacity grows. If this figure were applied

to all 25 proposed target countries, this would increase the cost to the US government by $25 million per year.

This yields a total of $5.5 billion over 10 years or $550 million per year. This figure would need to be adjusted over time to account for population growth and inflation.

To put this figure in context, the GHI promises over $10 billion per year for global health and the President's FY11 request is $8.5 billion for global health. Dedicating $550 million, or a little more than 6% of the President's proposed FY11 budget for global health, to HRH development seems like a reasonable allocation.

Moreover, health workforce development is already an important component of most USG global health programs, albeit under the rubric of capacity-building to address specific health issues, such as HIV/AIDS, malaria, tuberculosis, maternal and child health, and family planning. A more conscious, integrated, and strategic use of existing funds to develop a workforce that can address an array of health problems would make the most efficient use of existing resources, which could significantly reduce the need for additional funds devoted to HRH. Optimizing the use of available funds could go a long way toward addressing the health workforce crisis.

The US does not have to bear the burden of alleviating the health workforce crisis alone. While the GHI is critical, two other major avenues for action are equally important:

- The WHO, Global Fund, GAVI Alliance, and the World Bank should accelerate progress on the Joint Platform for Health Systems Funding so that their resources are both increased and optimally used to support HRH.
- Countries must live up to their responsibilities by fulfilling the promises they have made to strengthen the health workforce under national health development plans. The GHI approach to HRH should indeed be a partnership, with both the USG and the partner nations making an appropriate contribution, keeping in view commitments made by governments through agreements such as the Abuja Declaration.

LEADERSHIP AND MANAGEMENT OF THE HRH PROGRAM

One of the reasons that the GHI lacks an HRH strategy is that no person or office in the US government has responsibility for oversight and coordination of the US response to the health workforce crisis. It's hard to imagine how the USG can muster a coherent response to HRH when no one is accountable for demonstrating progress. It is worth noting that all of the major global programs of the USG have a clearly identified leader, whether in HIV/AIDS, malaria, family planning, or maternal and child health, among others.

Responsibility for building health workforce capacity is inevitably diffuse to some degree as it permeates many, if not most, global health programs. It would not be sensible to suggest that human resources development be stripped from any of the current programs. However, this does not mean that coordination or oversight should be absent.

To remedy this situation, USAID should create a position akin to the coordinator of the President's Malaria Initiative (PMI). Programs addressing malaria reside in a number of USG agencies. However, the PMI coordinator has oversight responsibility that includes a certain level of budgetary authority, staff, a clear mandate to coordinate work across agency boundaries, and responsibility for monitoring progress.

A similar position of HRH coordinator should be established within USAID. This person would be responsible for managing the development of a government-wide HRH strategy and have authority over the proposed budget of approximately $550 million per year. The HRH coordinator would have the mandate to coordinate HRH development across agencies and receive regular progress reports from the concerned offices and agencies. The HRH coordinator would be responsible for providing regular, publicly available reports on the status of the USG HRH program, including progress against appropriate indicators, such as those suggested earlier in this paper.

THE HUMAN COST OF INACTION

The abstract language of "health workforce crisis" and "human resources for health" obscures the suffering of people in need who cannot reach a trained, supervised, and supported health care provider. A woman dies in labor. A child succumbs to pneumonia. A farmer is felled by malaria. A minor injury at work becomes a badly infected wound. The cost in death, pain, disrupted families, and lost productivity mounts. All of this can be prevented or treated by introducing a skilled and supplied health care provider.

The GHI has commendable goals. Secretary of State Hillary Clinton recently spoke eloquently of our national commitment to global health, saying that "Few investments are more consistent with all of our values and few are more sound" (Clinton 2010). But our goals and values will not be realized where there is no health care provider.

The GHI can be achieved only if health workers are present. The basic tenets of a health workforce strategy are clear and feasible. The cost to the US of making health workers accessible is not great. Making health workers available to communities in need will help ensure the enduring legacy of the Obama Global Health Initiative.

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APPENDIX: ESTIMATES OF HEALTH WORKER NEEDS: 25 PRIORITY COUNTRIES[5]

COUNTRY	PHYSICIAN DENSITY	NURSE & MIDWIFE DENSITY	TOTAL DENSITY	MISSING DENSITY	POPULATION	SHORTAGE	SHORTAGE X 1.8 FOR OTHER HEALTH WORKERS	US SHARE @25%	TRAINING @ 6,006 EA	ENTRY & INFRASTRUCTURE COSTS @ 3,123 EA	TA OVER 10 YRS	TOTAL COSTS	ANNUAL COST
Afghanistan	0.2	0.5	0.7	1.58	28,400,000	44,872	80,770	20,192	121,275,554	63,060,865	10,000,000	194,336,420	19,433,642
Angola	0.08	1.35	1.43	0.85	12,800,000	10,880	19,584	4,896	29,405,376	15,290,208	10,000,000	54,695,584	5,469,558
Bangladesh	0.3	0.28	0.58	1.7	156,100,000	265,370	477,666	119,417	717,215,499	372,937,730	10,000,000	1,100,153,229	110,015,323
Benin	0.06	0.77	0.83	1.45	8,800,000	12,760	22,968	5,742	34,486,452	17,932,266	10,000,000	62,418,718	6,241,872
Cambodia	0.16	0.85	1.01	1.27	14,500,000	18,415	33,147	8,287	49,770,221	25,879,520	10,000,000	85,649,741	8,564,974
Democratic Republic of the Congo	0.11	0.53	0.64	1.64	68,700,000	112,668	202,802	50,701	304,507,804	158,337,974	10,000,000	472,845,777	47,284,578
Ethiopia	0.02	0.24	0.26	2.02	85,200,000	172,104	309,787	77,447	465,145,481	241,866,356	10,000,000	717,011,837	71,701,184
Ghana	0.11	0.97	1.08	1.2	23,900,000	28,680	51,624	12,906	77,513,436	40,305,438	10,000,000	127,818,874	12,781,887
Haiti	0.25	0.11	0.36	1.92	9,000,000	17,280	31,104	7,776	46,702,656	24,284,448	10,000,000	80,987,104	8,098,710
India	0.58	1.27	1.85	0.43	1,157,000,000	497,510					10,000,000	10,000,000	1,000,000
Indonesia	0.13	0.82	0.95	1.33	240,300,000	319,599					10,000,000	10,000,000	1,000,000
Kenya	0.14	1.18	1.32	0.96	39,000,000	37,440	67,392	16,848	101,189,088	52,616,304	10,000,000	163,805,392	16,380,539
Liberia	0.01	0.27	0.28	2	3,400,000	6,800	12,240	3,060	18,378,360	9,556,380	10,000,000	37,934,740	3,793,474
Madagascar	0.16	0.32	0.48	1.8	20,700,000	37,260	67,068	16,767	100,702,602	52,363,341	10,000,000	163,065,943	16,306,594
Malawi	0.02	0.28	0.3	1.98	15,000,000	29,700	53,460	13,365	80,270,190	41,738,895	10,000,000	132,009,085	13,200,909
Mali	0.07	0.2	0.27	2.01	13,400,000	26,934	48,481	12,120	72,794,522	37,851,697	10,000,000	120,646,219	12,064,622
Mozambique	0.03	0.31	0.34	1.94	21,700,000	42,098	75,776	18,944	113,778,265	59,162,424	10,000,000	182,940,689	18,294,069
Nigeria	0.4	1.61	2.01	0.27	149,200,000	40,284	72,511	18,128	108,875,567	56,613,119	10,000,000	175,488,686	17,548,869
Pakistan	0.78	0.38	1.16	1.12	174,600,000	195,552	351,994	87,998	528,518,390	274,819,003	10,000,000	813,337,394	81,333,739
Rwanda	0.02	0.45	0.47	1.81	10,700,000	19,367	34,861	8,715	52,343,191	27,217,413	10,000,000	89,560,604	8,956,060
Senegal	0.06	0.42	0.48	1.8	13,700,000	24,660	44,388	11,097	66,648,582	34,655,931	10,000,000	111,304,513	11,130,451
Uganda	0.12	1.31	1.43	0.85	32,400,000	27,540	49,572	12,393	74,432,358	38,703,339	10,000,000	123,135,697	12,313,570
United Republic of Tanzania	0.01	0.24	0.25	2.03	41,000,000	83,230	149,814	37,454	224,945,721	116,967,281	10,000,000	351,913,002	35,191,300
Zambia	0.06	0.71	0.77	151	11,900,000	17,969	32,344	8,086	48,564,816	25,252,734	10,000,000	83,817,550	8,381,755
Zimbabwe	0.16	0.72	0.88	14	11,400,000	15,960	28,728	7,182	43,135,092	22,429,386	10,000,000	75,564,478	7,556,448
Total					2,362,800,000	2,104,932	2,318,081	579,520	3,480,599,222	1,809,842,053	250,000,000	5,540,441,275	554,044,128

[5] Health worker data are from the WHO Global Atlas of the Health Workforce (http://apps.who.int/globalatlas/default.asp); population data are from the CIA World Factbook (https://www.cia.gov/library/publications/the-world-factbook/)

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