

Financing and Economic Aspects of Health Workforce Scale-up and Improvement: Framework Paper



Task Force on Human Resources for Health Financing
Global Health Workforce Alliance

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This paper synthesizes the human resources for health (HRH) financing work conducted to date and sets out the topics requiring additional academic and field research. The analysis for the paper was conducted by the Secretariat of the Financing Taskforce (FTF) under the guidance of FTF members.

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Preface

Health workers play a critical role in the provision of health care and represent the single largest cost element in providing health services in low income countries. Many of the poorest countries in the world lack the resources, both human and financial, to meet the pressing health needs of their populations. Millions of people die prematurely, or suffer from illness or disability unnecessarily, because appropriate human resources for health (HRH) to provide care are not available to them.

This problem has recently begun to receive the greater attention it deserves. Development institutions, donors, and international health experts have created a consortium—the Global Health Workforce Alliance (the Alliance) —whose purpose is to promote greater insight and effective action on health workforce challenges. The Alliance established task forces to analyze the scope and nature of the shortages, the implications for training of more health workers, the problems associated with migration (brain drain), and other issues. The Financing Task Force of the Alliance addresses two important issues: how much it will cost to address the workforce challenges appropriately, and how those costs will be financed (i.e., where the money will come from).

This paper identifies key considerations for countries and policymakers planning the financing of their health workforce, and is based on an extensive review and synthesis of the literature, research findings, and experience on the financing and economic aspects of health workforce scale-up and improvement. Some of the issues, such as fiscal space and funding health workforce employment, are relevant to *global* policymakers and development partners as well as country-level policymakers. Others, such as in-service and pre-service training, deployment, efficiency, and resource management, are mainly for *country-level* policymakers to tackle.

The broader context within which workforce problems arise is taken into account here, including the importance of health systems issues and the roles of the private and public sectors.

The paper's findings identify many areas of consensus, others of controversy, and still others where there are promising, but unproven, paths. The consensus areas and some of the promising paths offer plentiful opportunities for the global community and individual countries to take action now to improve the availability of HRH. The areas of controversy point to the need for additional research and experience.

From the review of the issues we propose an agenda that includes items for action at both the global and the country levels. Many different actors have a part to play in addressing the global health workforce crisis—governments, development partners and donors, academics, and local partners in the public and private sector. At the global level, the Alliance will need to orchestrate efforts to ensure mobilization of adequate resources and coordination among implementing partners. At the country level, national governments, with the technical and financial assistance of development partners, will need to lead. To assist country-level policymakers, this paper is complemented by another document prepared by the Financing Task Force, called *What Countries Can Do Now*, that states a number of actions that country policymakers could take right away, independent of other long term HRH interventions they may be working on. The third output of the Financing Task Force is a hands-on, Excel-based *Resource Requirements Tool* (RRT) to help countries estimate the resource requirements for employment and pre-service training of health workers.

This paper has benefited from the experience and wisdom of many people from around the world. We would like to warmly thank the members of the Financing Task Force, the many people we consulted, and particularly Marty Makinen, the Task Force Secretariat Director, who led the work and the production of this paper; Dessi Dimitrova, who did much of the writing and research; Lord Nigel Crisp, Fitzhugh Mullan, Eric de Roodenbeke, Hong Wang, and Pascal Zurn for reviewing drafts of this paper, suggesting further resources to be incorporated and issues to be addressed; Sanjeev Gupta for his contribution to the fiscal space issue area; Alex Preker, Kate Tulenko, Marko Vujicic, and the numerous World Bank colleagues who generously shared their time and ideas; Eyitayo Lambo, Patrick Lydon, and Richard Scheffler for their overall review; Alison Ion for the research support, and Kevin Croke for the literature review. Last but not least, Linda Moll, Loren Becker and Simon Rodberg for editing.

David de Ferranti and K.Y. Amoako

Co-Chairs, Financing Task Force, Global Health Workforce Alliance

Acknowledgements

Financing Task Force Co-Chairs

- David de Ferranti, former World Bank Vice President for Latin America, CEO Results for Development Institute, Brookings Institution
- K.Y. Amoako, former Executive Secretary of the U.N. Economic Commission for Africa, President, African Center for Economic Transformation

Financing Task Force Members

- Alberto Carrasquilla, Former Minister of Finance, Colombia
- Carissa F. Etienne, Assistant Director-General Designate, Health Systems and Services, World Health Organization
- Sanjeev Gupta, Senior Advisor, International Monetary Fund
- Eytayo Lambo, Former Minister of Health, Nigeria
- Mamadou Lamine Loum, Former Prime Minister, Senegal
- Netsanet Walelign, UNICEF
- K. Srinath Reddy, Head of the India Public Health Foundation
- Rick Rowden, ActionAid
- Julian Schweitzer, World Bank
- Hong Wang, Assistant Professor, Yale University School of Public Health

Ex-Officio Task Force Members

- Peggy Clark, Realizing Rights, Health Worker Migration Global Policy Initiative
- Lord Nigel Crisp, Former Chief Executive of the NHS and Permanent Secretary of the Department of Health, UK and Co-Chair of the Education and Training Task Force of the Alliance
- Sigrun Møgedal, Ambassador, HIV/AIDS and Global Health Initiatives, Norwegian Ministry of Foreign Affairs

Financing Task Force Secretariat

- Marty Makinen, Managing Director, Results for Development Institute
- Dessi Dimitrova, Program Officer, Results for Development Institute
- Alison Ion, Program Associate, Results for Development Institute

Technical Advisory Group

- Taghreed Adam, World Health Organization
- Eric de Roodenbeke, International Hospital Federation
- David Evans, World Health Organization
- Patience Kuruneri, UNICEF
- Patrick Lydon, World Health Organization

- Fitzhugh Mullan, Professor of Medicine and Health Policy, George Washington University
- Steve Musau, Economist, Africa's Health in 2010 Project, Abt Associates Inc.
- Alex Preker, Lead Economist, World Bank
- Richard Scheffler, Director, The Global Center for Health Economics and Policy Research, Distinguished Professor of Health Economics & Public Policy, University of California Berkeley
- Agnes Soucat, Lead Economist, World Bank
- Kate Tulenko, Public Health Specialist, World Bank
- Marko Vujcic, Economist, World Bank
- Pascal Zurn, Economist, World Health Organization

Global Health Workforce Alliance

The Task Force's work would not have been possible without leadership and financial support from the Global Health Workforce Alliance (the Alliance), including the former and current Executive Directors, Francis Omaswa and Mubashar Sheikh and their staff: Jim Campbell, Eric De Roodenbeke, Erica Wheeler, Fabienne Adam, Millicent Ayata, Ben Fouquet, Beth Magne-Watts, and Cornely Okwo-Bele.

Abbreviations and Acronyms

CGD	Center for Global Development
CHW	Community Health Worker
DFID	Department for International Development (UK)
ECSA–HA	East, Central and Southern African Health Community
EQUINET	Regional Network for Equity in Health in East and Southern Africa
FTF	Financing Task Force
GDP	Gross Domestic Product
GFATM	Global Fund to Fight AIDS, Tuberculosis and Malaria
GIS	Geographic Information System
GNI	Gross National Income
HCW	Health Care Worker
HIS	Health Information System
HRH	Human Resources for Health
HRHA	Human Resources for HIV/AIDS
HRIS	Human Resource Information System
HSA	Health System Assessment
HSS	Health Systems Strengthening
ICN	International Council of Nurses
IMF	International Monetary Fund
IRS	Indoor residual spraying
ITN	Insecticide Treated Nets
JLI	Joint Learning Initiative
LIC	Low-income Country
MDG	Millennium Development Goal
MIS	Management Information System
MOE	Ministry of Education
MOH	Ministry of Health
NGO	Nongovernmental organization
NHSC	National Health Service Corps
PEPFAR	President's Emergency Plan for AIDS Relief
PHR	Partnership for Health Reform
PRSP	Poverty Reduction Strategy Paper
RFP	Request for Proposal
SIDA	Swedish International Development Cooperation Agency
SWAp	Sector-wide Approach
USAID	United States Agency for International Development
WDR	World Development Report
WHR	World Health Report
WHO	World Health Organization

Executive Summary

Context

This paper synthesizes the human resources for health (HRH) financing work conducted to date and sets out the topics requiring additional academic and field research. The analysis for the paper was conducted by the Secretariat¹ of the Financing Task Force² of the Global Health Workforce Alliance (the Alliance).³

The *purpose* of this paper is to provide a single synthesis of all available information concerning financial and economic issues around HRH in low-income countries. In addition, the paper suggests what could and should be done with the information and the tools in hand, and what additional work is desirable in this domain.

The *audience* for the paper includes policymakers in low-income countries and their supporting analysts, international development assistance agencies involved in the health sector, other Alliance task forces, the Alliance Secretariat and Board, and researchers interested in HRH issues.

The paper is *structured* in seven sections, each presenting a distinct issue area. Each section consists of information on the issue background, including the key issue questions and basic definitions.

Issue areas

The seven issue areas below were identified upon a review of the HRH literature and programs in the field:

- **AREA ONE: Employment costs and fiscal space constraints:** Discussion of the fiscal space and macroeconomic constraints on countries' ability to finance the employment costs of scaling up HRH
- **AREA TWO: Pre-service training/production costs:** Review of the necessary financing of capital and recurrent costs for producing HRH to meet the needs of scaling up
- **AREA THREE: Equitable deployment costs:** Analysis of the costs of and incentives for achieving more equitable deployment of HRH

1 The Secretariat comprises Marty Makinen, Managing Director; Dessi Dimitrova, Program Officer; and Alison Ion, Program Associate. The Secretariat is housed at the Results for Development Institute in Washington, DC.

2 The Financing Task Force is led by David de Ferranti and K.Y. Amoako, Co-chairs and is comprised of Alberto Carrasquilla, Former Minister of Finance, Colombia; Carissa F. Etienne, Assistant Director-General Designate, Health Systems and Services, World Health Organization; Sanjeev Gupta, Senior Advisor, International Monetary Fund; Eytayo Lambo, Former Minister of Health, Nigeria; Mamadou Lamine Loum, Former Prime Minister, Senegal; K. Srinath Reddy, Head of the India Public Health Foundation; Rick Rowden, ActionAid; Julian Schweitzer, World Bank; Hong Wang, Assistant Professor, Yale University. The Ex-officio Task Force members are Peggy Clark, Realizing Rights, Health Worker Migration Global Policy Initiative; Lord Nigel Crisp, Former Chief Executive of the NHS and Permanent Secretary of the Department of Health, UK and Co-Chair of the Alliance Scale up of Education and Training Task Force; Sigrun Mogedal, Ambassador, HIV/AIDS and Global Health Initiatives, Norwegian Ministry of Foreign Affairs.

3 Other groups of the Alliance working on health workforce issues are: Task Force on Scaling-up Education & Training (TF-SET); Health Worker Migration Global Policy Advisory Council; Task Force on HRH Implications of Scaling-up towards Universal Access to HIV Prevention, Treatment, Care and Support; Technical Working Group on Private Sector Involvement in HRH; Task Force on Tools and Guidelines; Task Force on Innovative International Financing; Positive Practice Environment Campaign; Advocacy Initiative.

- **AREA FOUR: Retention costs:** Analysis of the costs, incentives, tradeoffs and effectiveness of programs and approaches for improved HRH retention
- **AREA FIVE: Efficiency/productivity costs and savings:** Review of the cost-effectiveness of methods for increasing the efficiency of HRH and analysis of the potential to reduce the numbers of HRH needed for scale-up through various productivity improvements
- **AREA SIX: Human resource management costs:** Synthesis of the costs associated with strengthening HRH management systems
- **AREA SEVEN: Private sector engagement costs and savings:** Review of the impact on costs of engaging both the private and the public sector in HRH scale-up

Agenda for further action

The agenda for further work defines two broad categories of action items: one that relates to improving the knowledge base of *global HRH financing issues* and another that concerns the implementation of *country-specific HRH interventions*.

HWA, as a provider of global public goods, take the lead in mobilizing resources and coordinating partners to address the global HRH financing work. Example tasks to be completed by the Alliance include creating a global inventory of retention and deployment practices; conducting systematic analysis of the costs, benefits and economic tradeoffs of various practices and programs, including variations by gender, region, and sector; and providing a roadmap for Ministries of Health to create HRH scale-up plans that fit overall health system strengthening strategies. In contrast, we recommend that the country-specific work be led by Ministries of Health with technical and financial assistance from development partners. Examples of such country work include collecting private sector HRH data and using it for overall planning efforts; strengthening human resource management systems; and integrating data on skill mix and cost into planning for HRH. The Alliance could play a role in country-specific work as well: as countries scale up their HRH financing work, the Alliance could aggregate, synthesize, and disseminate cross-sectional country data.

Introduction

This Global Health Workforce Alliance (the Alliance) paper synthesizes work on the financing of human resources for health (HRH) conducted to date and sets out the topics requiring additional academic and field research. The analysis was conducted by the Secretariat of the Alliance Financing Task Force (FTF) under the guidance of FTF members. The paper is one of five reports that present comprehensive analyses of global health workforce issues.⁴

HRH are crucial inputs into the provision of health care. Health services cannot be delivered without HRH. HRH spending often represents over half of ministries' recurrent health expenditures. However, HRH without other inputs, including drugs and supplies, functioning equipment, and adequate supervision, among others, are ineffective. Thus, scaling up HRH financing without scaling up the financing for other health-related goods could be futile in terms of improving health outcomes (WHO 2006). Effective human resources policies, therefore, should be part of improving the functioning and performance of the entire health system.

Many of the poorest countries in the world lack the human and financial resources needed to provide for the pressing health needs of their populations. The UNICEF report *Countdown to 2015: Tracking progress in maternal, newborn and child survival* (Bryce et al. 2008) asserts that 54 of 68 (80 percent) of countdown priority countries⁵ do not have sufficient HRH to meet health Millennium Development Goals (MDGs) 4 (reduce child mortality) and 5 (improve maternal health). Bryce states that, while there is no demonstrated association between health worker density and coverage for interventions, HRH data show that countries are facing critical health worker shortages that could significantly obstruct coverage increases. This problem is hardly new: in 1981, *Agenda for Action: Accelerated Development in Sub-Saharan Africa* (World Bank 1981) cited data from as early as 1977 illustrating the scarcity and disproportionate distribution of nurses, physicians, and health facilities.

There are various estimates of the current HRH shortage. The Joint Learning Initiative (JLI) and World Health Organization (WHO) have made the only *global* estimates: JLI (2004) estimates a global shortage of 4 million HRH, and WHO, in its 2006 World Health Report (WHR), puts the number at 4.3 million. There are also a number of *regional and country* estimates made by academics and development agencies. Scheffler et al. (2007) found that by 2015, the Africa region will face a needs-based shortage of approximately 167,000 physicians. Country-specific estimates for Tanzania exist (Kurowski et al. 2007; Hazlewood et al. 2005), and estimates for other countries are forthcoming: Ethiopia (by the World Bank), Malawi (U.K. Department for International Development [DFID]), and Zambia (United States Agency for International Development [USAID]). Studies also have estimated the HRH gap by type of disease; for example, Dalberg (2008) produced estimates for malaria, and the Joint United Nations Programme on HIV/AIDS did so for HIV/AIDS.

4 The other groups working on health workforce issues are: Task Force on Scaling-up Education & Training (TF-SET); Health Worker Migration Global Policy Advisory Council; Task Force on HRH Implications of Scaling-up towards Universal Access to HIV Prevention, Treatment, Care and Support; Technical Working Group on Private Sector Involvement in HRH; Task Force on Tools and Guidelines; Task Force on Innovative International Financing; Positive Practice Environment Campaign; Advocacy Initiative.

5 Countdown to 2015 aims to stimulate country action by tracking coverage for interventions needed to achieve MDGs 4 and 5 in the 68 priority countries.



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WHO has conducted the only global cost estimate for HRH; it estimated that eliminating the 4.3 million HRH gap would require an investment of more than \$254.8 billion in training and recurrent salary costs over the next 10 years (WHO 2006).⁶ Estimates made for specific disease programs have not been aggregated to produce a total cost for all diseases. In any case, the individual estimates are approximate and do not address all economic and financing issues related to health workforce scale-up. Nor do they take into consideration that the need for HRH scale-up is not linear. Barnighäusen et al.'s analysis of HRH for HIV/AIDS (HRHA) issues (2007) cautioned that expanding HRHA numbers will exacerbate the need for HRHA because antiretroviral therapy increases life expectancy. In the *Lancet* (2008), Cavagnero et al. state that a comprehensive assessment of the adequacy of the health workforce would require "more than merely an enumeration of skilled health service providers, but also an assessment of their distribution, knowledge, skills, and motivation."

While HRH studies conducted to date have limitations, they provide a springboard for further work. From the present review of the literature and of HRH scale-up programs in the field, the following issues were identified as the key financing and economic aspects of health workforce scale-up and improvement:

- **AREA ONE: Employment costs and fiscal space constraints:** Fiscal space and macroeconomic constraints on countries' ability to pay employment costs of scaled-up HRH
- **AREA TWO: Pre-service training/production costs:** Financing of capital and recurrent costs for the capacity to produce HRH to meet the needs of scale-up
- **AREA THREE: Equitable deployment costs:** Costs of achieving more equitable deployment of HRH
- **AREA FOUR: Retention costs:** Costs and tradeoffs of improved HRH retention
- **AREA FIVE: Efficiency/productivity costs and savings:** Costs and effectiveness of methods for increasing the efficiency of HRH and reducing the numbers needed for scale-up
- **AREA SIX: Human resource management costs:** Costs of strengthening HRH management systems
- **AREA SEVEN: Private sector engagement costs and savings:** Effects on costs of engaging both the private and the public sector in HRH scale-up

This paper discusses each of these areas in terms of the key financing question, work on the topic performed to date, and the agenda for further work. The agenda for further work defines two broad categories of action items: one relates to improving the knowledge base of *global HRH financing issues*, the other to *country-specific HRH interventions*. We recommend that the Alliance, as a provider of global public goods, take the lead in mobilizing resources and coordinating partners to address the global HRH financing work. We further recommend that the country-specific interventions be led by Ministries of Health with technical and financial assistance from development partners. As countries scale up their HRH financing work, the Alliance can help facilitate the aggregating, synthesizing, tracking and disseminating of country data.

⁶ See Annex 1 for further detail.

AREA ONE:

Fiscal and macroeconomic constraints on countries' ability to pay employment costs of scaled-up HRH

1

Background

Key question

Can countries afford to scale up the employment of HRH?

Description and definition

This section addresses the costs of employing scaled-up numbers of HRH relative to the abilities of the governments and economies in low-income countries (LICs) to pay those costs⁷. The next section (issue area two) addresses the costs of and ability to pay for the production of sufficient HRH to meet employment targets. The issue of the HRH skill mix (sometimes labeled “task shifting”) is taken up in a subsequent section.

The debate so far has drawn attention to whether and how governments in LICs can ensure sustainable financing for recurrent costs and capital investments (both human and physical capital) associated with HRH scale-up. LICs face resource constraints and sometimes-difficult tradeoffs across and within sectors when attempting to meet the basic needs of their populations, including ensuring access to trained and effective HRH. Expanded numbers of HRH require resources to pay the costs of their employment, including wages and benefits, and the cost of producing the HRH (education and training). External support might be necessary to supplement domestic resources to meet HRH targets. To ensure the long-term sustainability of HRH scale-up, it is desirable for a maximum of domestic resources to be mobilized, with external resources used to fill the remaining gap. The recently renewed commitment by the international community to increase aid to help LICs meet the MDGs would seem to offer good opportunities to fill financing gaps. While the willingness of the international community to provide aid offers possibilities for governments to accelerate their HRH programs' scope and meet the MDGs, international aid must be complemented by efforts in the area of macroeconomic management. This macro management includes ensuring sustainability in the face of aid uncertainty and variability and working within each country's own long-term economic prospects.

It has been frequently pointed out that the key variables affecting governments' ability to sustainably finance HRH scale-up are the ability of governments to capture gross national income (GNI), governments' willingness to borrow, the share of government resources allocated to health, and the share of health spending allocated to HRH. Additionally, financial risk pooling of user



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⁷ Note that this Framework Paper takes a focused approach to the fiscal and macroeconomic issues around financing of HRH employment (and, in Area Two, HRH pre-service training). This Paper takes the existing institutional arrangements as given, such as (1) the role of the IMF (International Monetary Fund) in providing “blessing” for macroeconomic policy and (2) the neoclassical development model. Some observers debate the merits of these arrangements (see for example the report of the WHO Commission on Social Determinants of Health, CSDH, 2008 and two 2008 letters to the US Congress and IMF Executive Directors from groups of NGOs that stated: “The IMF must rescind the use of overly restrictive deficit-reduction and inflation-reduction targets. Such targets prevent developing countries from growing their economies and expanding public spending, including in the critical areas of health and education. The IMF must not stand in the way of policymakers in borrowing countries exploring and adopting more expansionary fiscal and monetary policy options.”). However, the analysis of these broad macroeconomic issues is beyond the scope of this paper.

contributions to health financing, such as insurance programs, can contribute to sustainable financing. A LIC's domestic resources are made up of GNI that is held by its households and by its government. Households spend a portion of their income on HRH by paying fees for health services delivered by HRH working at private providers (and, sometimes, at government providers) and, to a minor extent in most LICs, through payment of insurance premiums that are used to prepay or reimburse providers for services delivered. Thus, key variables concerning household spending are the size and growth of household incomes, the share of income spent by households on health,⁸ and the share of that spending used by providers to pay for HRH. Governments capture a portion of GNI, principally through taxes, and they may borrow from domestic or (more likely) external sources to access funds to allocate across and then within social sectors.

Evidence illustrates that external partners that could supplement domestic resources to pay for employment of HRH are sometimes reluctant to pay for such recurrent costs, preferring to fund investments. However, LIC governments can take advantage of fungibility to get around restrictions on spending external resources on recurrent costs. Some external partners provide grant funds, while others, such as the development banks, offer loans that must be repaid. Countries using external funding for HRH scale-up are wise to consider how long they can count on the external resources, variability in availability of the resources from year to year, and, if the funds are borrowed, the size of the country's debt burden.

Work to date

Much of the research to date has focused on determining whether LICs would be able to finance the one-time and recurrent costs of WHR-suggested levels of HRH. One of the first pieces of work on HRH scale-up affordability was conducted by the World Bank: Vujicic (2005) concludes that, even combining domestic resources with a doubling of aid as a percentage of gross domestic product (GDP), many poor countries will be unable to afford the WHR-suggested level of HRH by 2015. To make these estimates, Vujicic presents a set of scenarios for fiscal space⁹ drawn from Williams and Hay (2005) for 30 African countries. The scenarios use different combinations of the following variables: government budgetary allocations to health, rates of tax extraction,¹⁰ economic growth, and aid. The scenarios that use values close to those of the recent past show that few of the countries will be able to generate \$30 per capita by 2015, a benchmark used to approximate the cost of a minimum package of care that includes HRH scale-up. The most optimistic (but characterized as less realistic) scenario enables 16 of the 30 countries to reach the \$30 per capita mark.

8 Escalating food prices in 2008 limited households' ability to seek care. If such food price increases continue in future years, households contributions to health spending will be less than in the past.

9 The International Monetary Fund defines "fiscal space" as the "availability of budgetary room that allows a government to provide resources for a desired purpose without any prejudice to the sustainability of a government's financing position" (Heller 2005). The UNDP offers a contrasting definition which considers the longer-term benefits and multiplier effects that may accrue from strategic public investments in health and education over the long run and allow for higher budget deficits and moderate inflation in the short-term (Roy, 2006).

10 Tax extraction means the share of total national income (GNI) or GDP captured by government through taxes, fees, and other means.

Funding recurrent costs for HRH with donor aid and/or debt relief has been controversial. A key determinant of country-specific affordability is the position of countries' major donors with respect to HRH. Calculations of the available "resource envelope" or fiscal space that include projections of aid levels must also take into account the willingness of these donors to allow their funds to be used for human resources. Vujicic (2005) notes that donors have been reluctant to fund recurrent costs, such as employment costs of HRH. One of the reasons cited for this reluctance is that providing aid to cover recurrent costs may create a moral hazard situation where increased aid reduces incentives for the recipient government to improve tax extraction. However, donors are not consistent in this regard. Donors sometimes top-up the salaries for critical staff in programs that they support or fund infrastructure investments that imply added recurrent costs that are of questionable sustainability (Chen 2005). DFID provided large-scale funding of HRH employment in Malawi as a part of the Emergency Human Resources program (Palmer 2006). Also, some countries have been reluctant to borrow as a means to expand fiscal space to pay recurrent costs, especially when the countries have heavy debt burdens or have had debts forgiven¹¹.

International Monetary Fund (IMF)¹² fiscal policies are perceived as a barrier to financing HRH scale-up. A report by the Working Group on IMF Programs and Health Spending, facilitated by the Center for Global Development (CGD), concludes that the IMF should be more flexible in its fiscal strategies (Goldsborough 2007). The CGD report also states that "Evidence suggests that IMF-supported fiscal programs have often been too conservative or risk-averse. In particular, the IMF has not done enough to explore more expansionary, but still feasible, options for higher public spending" (Goldsborough 2007). Its recommendation is that the IMF use public sector wage bill ceilings less, do better aid forecasting, give greater emphasis to short-term expenditure smoothing, and ensure greater transparency. ActionAid reviewed a number of major studies and identified nine "which used multi-country data sets over several decades in an attempt to find the 'kink' in the inflation-growth relationship, or try to determine at what levels inflation begins to hurt an economy's future long-term economic growth rates. The studies have estimates of the rate of inflation that begins to harm growth ranging from 20 to 40 percent a year. ActionAid states that this research indicates not only that there is no consensus on the right [inflation level] answer, but also that the IMF has little empirical justification for pushing inflation rates down to 5 percent a year."¹³ Based on this type of analysis, more than 120 global advocacy organizations wrote letters to incoming IMF Managing Director Dominique Strauss-Kahn in October of 2007 to urge him to use his position "to enable impoverished nations to direct sufficient resources to meet pressing human needs." In November 2007, nine members of the U.S. Congress who oversee the U.S. participation in the IMF also sent a letter to

11 It can be argued that recurrent spending on health represents an investment in economic productivity and thus would justify borrowing to meet HRH employment costs.

12 The IMF is important for this discussion because its fiscal (availability of resources to spend at a given time) and monetary (affecting economic growth over time) policy targets often have an effect on the size of overall national budgets. Countries which are very aid-dependent must satisfactorily comply with their IMF arrangements to access aid from other donors and creditors. Thus, IMF policies are relevant for health advocates and readers of this report on HRH financing. As the 2008 report from the WHO Commission on the Social Determinants of Health noted, "Ceilings on public expenditure associated with the need to secure IMF approval of national macroeconomic policies may limit the ability of governments to pay badly-needed health professionals, although the relative contribution of IMF demands and other factors must be assessed on a country-specific basis." (CSDH 2008)

13 Personal communication with Rick Rowden.

Mr. Strauss-Kahn, expressing their concerns with: IMF policies, particularly regarding IMF programs' restrictive targets; IMF programs that result in the diversion of aid spending away from its intended purpose; the lack of consensus support for IMF policies; and the IMF's use of wage bill ceilings. ActionAid International proposes several actions to increase countries' fiscal space: (1) revise and publicize the macroeconomic constraints required by IMF programs; (2) explore fully the costs and benefits of more expansionary policy options; and (3) increase stakeholder involvement in IMF program negotiations. Similarly, Oxfam asserts that the IMF needs: (1) greater flexibility in its economic targets; (2) more active involvement with other donors to help mobilize the resources needed at the country level to finance efforts aimed at achieving the MDGs; and (3) to base its aid and debt relief on implementation of countries' poverty reduction strategies (Oxfam 2003). Most recently, the report of the World Health Organization's Commission on the Social Determinants of Health raises similar questions about the impact of IMF macroeconomic policies on health spending, and spending on human resources for health (CSDH 2008)¹⁴.

The IMF's response is that the use of wage bill ceilings is declining and that such policies will be used only in exceptional circumstances. Under the new policy approved in July of 2007 by the IMF Executive Board, the IMF will use wage bill ceilings only in exceptional circumstances when justified by macroeconomic considerations. The ceilings would be designed flexibly to accommodate spending of scaled-up aid, particularly for sustainable donor-financed employment in priority sectors such as education and health. In the (fewer) cases where IMF applies wage ceilings, the need and rationale for them must be justified in board documents and periodically reviewed. As a result of this policy, the incidence of wage bill ceilings in IMF-supported programs is declining. Currently, no IMF-supported program under the Poverty Reduction and Growth Facility (PRGF) has a wage-bill ceiling as a "performance criterion." Only 3 of 23 such programs (Benin, Burundi and Moldova) include wage-bill ceilings as "indicative targets". This new flexibility by the IMF concerning wage bills is illustrated by Malawi's experience; the Global Fund to Fight AIDS, Tuberculosis and Malaria (GF) and DFID worked with the IMF to ensure that the authorities' Emergency Human Resources Plan was incorporated in the IMF-supported program (Palmer 2006).

Furthermore, the IMF claims that it attempts to strengthen countries' ability to absorb aid and to sustain their level of activity after aid is no longer available. Gupta et al. (2007) of the IMF respond to critics by stating that the IMF assists LICs to "absorb the projected scaling up of aid in a sustainable way" and its intention is not to restrict country expenditure. They list four issues that the IMF says need considered by countries in framing their fiscal policy in an environment of scaled-up aid flows: medium-term planning; choosing a spending path; addressing aid volatility; and strengthening fiscal institutions. Malawi's IMF-supported program incorporated the authorities' Emergency Human Resource Plan, thus setting a new precedent for IMF flexibility.

Other donors, such as the GFATM and the GAVI Alliance, are reported to have begun to be more flexible in their policies concerning financing public sector recurrent costs. Round 7 GFATM guidelines allow countries to request HRH funding if that funding would support health system strengthening in the context of the three diseases GFATM works to eradicate. The share of GFATM

¹⁴ The advocacy group RESULTS Educational Fund, with support from the Open Society Institute and in partnership with the Center for Economic Governance and AIDS in Africa, is conducting research on the impact of IMF programs on health financing in Kenya, Tanzania, and Zambia.

and GAVI HSS funding used for payments to staff varies widely across countries. On average, countries devote 12% of GAVI HSS and 16% of GFATM funds for paying health workers. However, this ranges from 0 to 28% (Kenya) within GAVI HSS and 0 to 46% (Indonesia malaria) within GFATM (Vujicic 2008). An example of GF funding is Tanzania, where GFATM supports the new “Mkapa Fellows” program, which provides salary top-ups for new hires who voluntarily “bond” to their positions. “Bonding” of health care professionals requires graduates to remain in service in their countries of training upon graduation as a way of repaying the government-funded portion of their education. The “bond” is for a number of years of service in a specific location, and sometimes includes a financial penalty if broken (Labonté et al. 2006).¹⁵

Countries in the Africa region are projected to fall short of being able to finance the employment of the number of HRH targeted by the 2006 WHR. At the World Bank, Preker et al. (2007) make scenario projections using methods similar to Vujicic and estimate the “sustainable” number of HRH that maybe employed in countries in the Africa region by 2015. The authors then use this number as the basis for estimating the cost of pre-service training (see more on the latter in issue area two below). In the “projection of past trends” scenario, Preker estimates that African countries will be able to employ 648,000 HRH above 2007 levels in 2015 (compared with the 2006 WHR-recommended level of 817,992 additional HRH for Africa).¹⁶ Preker indicates that achieving the 2006 WHR’s HRH target for Africa could be attained by some combination of: (1) faster economic growth; (2) greater government allocations of their spending to health; (3) task shifting toward lower-skilled HRH; (4) external assistance increases; and (5) providing more options for out-of-pocket spending to be channeled through insurance mechanisms. However, this analysis also indicates that the effect of external assistance on the ability of countries to scale up employment is likely to be small. Preker shows that a doubling¹⁷ in external assistance, though helpful, would not be nearly as powerful in increasing fiscal space for HRH employment as the combination of (1) substantial economic growth and (2) governments’ allocating bigger shares of their spending to health. The Preker estimates assume that spending on HRH is a constant share of total health expenditure, meaning that HRH are scaled up at the same rates as other health inputs. The estimates also assume that household health spending grows at the same rate as incomes grow; though many analyses show that households tend to spend relatively more on health compared with other items as incomes grow (because the income elasticity of health spending is greater than one). The estimates

15 A critique (Dussault 2005) of bonding notes “in general, the bonding system has been considered unfair. Since other careers do not require compulsory service, bonding may lead individuals away from medical education. In addition, it can be particularly problematic for women, who are often unable to accept remote positions. In countries where women comprise a considerable part of the health workforce, bonding systems can result in a significant portion of needed personnel not being able to complete their graduation requirements or engage in professional practice.”

16 Preker’s estimate that countries in the Africa region could employ an additional 648,000 HRH in 2015 is based on a scenario using the average rates of economic and public expenditure growth from the past 10 years, no task shifting, and no insurance effect. This estimate varies from others in the paper that range from a decline in employment of HRH of 800,000 (in the worst case scenario of negative 5 percent annual GDP growth, reduced government health expenditure as a share of total government spending by 5 percentage points, and no insurance effect) to an increase of 1.7 million HRH based on the best case scenario (annual GDP growth of 5 percent, increased government health expenditure as a share of total government spending reaching 15 percent, and a 25 percent insurance effect, i.e., the assumption that by channeling 60 percent of out-of-pocket expenditures through insurance, out-of-pocket spending increases by 25 percent).

17 Advocacy groups call for more than a doubling of health assistance to Africa.

for the region are aggregated from individual country estimates. There is no discussion in the paper of the distribution of the growth in HRH employment among countries in the Africa region, but given its methodology, it is certain that the aggregate growth in HRH employment projected by Preker would leave important disparities between the relatively richer and poorer countries in terms of HRH per capita.

Financing the employment and related costs of scaling up the stock of HRH may become even more difficult in light of the recent inflationary pressures due to the sharp increases of fuel and food prices. The IMF states that “Fuel and food-price shocks have a significant impact on the population of low-income countries. Because food represents a larger share of what poorer consumers buy, a global increase in food prices has a bigger impact on inflation in poorer countries. The same is true for fuel, which has also become much more expensive” (Wakeman-Lynn 2008). To address this challenge, the IMF recommends that countries “pass through¹⁸ increases in world petroleum prices, both to preserve economic efficiency and avoid excessive fiscal costs.” (Mati 2008) The “pass through” approach would protect governments’ ability to pay for HRH. However, it would diminish the capacity of households to pay for health services or to purchase health insurance and would thus diminish the ability to pay for HRH employment.

Agenda for additional work

Country-level work

- *Estimate the “fiscal space”/government funding* that is likely to be available for employment of HRH through to the end date of countries’ HRH scale-up plans (e.g., 2015 if the plans are aligned with the MDGs). This involves projecting the funding that is likely to be available from government for HRH scale-up and would allow the Ministry of Health to compare the available and required funding for covering HRH costs. The Ministry can vary the assumptions behind these funding projections and estimate “optimistic” and “pessimistic” scenarios for resources that could be available to meet HRH plans. The “gaps” calculated between plans for HRH scale-up and likely fiscal space could be used in advocacy efforts within government or with external partners. Finally, based on the scenarios, the HRH plans could also be adjusted. *The Ministry of Health can use the fiscal space analysis for advocacy.* The gap figures could be used to seek additional resources to make it possible to attain the planned HRH levels. These resources might come from government borrowing or from external support. Alternatively, if additional resources cannot be raised, then the Ministry can adjust its HRH scale-up plans to reflect only those aspects that can be financed.

Global work

- *Assist donors and global health initiatives to clarify their positions on supporting HRH employment costs:* To achieve the MDGs or target levels of HRH per capita, it is certain that many LICs will need external support to be

¹⁸ This “pass-through” would allow domestic fuel prices to increase proportionately to the increase in international prices, rather than provide a government subsidy for domestic purchasers of petroleum.

able to scale up HRH. Donors and global health initiatives should be clear about their policies in this regard. It seems necessary to offer long-term (10 or more years) recurrent support for HRH employment to very low income countries with poor growth prospects. Donors might also wish to provide medium-term (5-10 years) external recurrent support for HRH employment to other countries that have high enough incomes and growth prospects such that they will be able to take on the responsibility for recurrent payment of employment costs after some time¹⁹. This external assistance would help the latter group of countries to do the initial scaling up that they then would be able to sustain.

- *Monitor IMF policies on fiscal space and economic growth and continue to seek better alternatives:* In response to criticisms and analyses, the IMF says that it has changed its approach to wage ceilings and other fiscal policy constraints to (1) make them less restrictive and (2) allow countries to spend external resources as intended as long as the spending is sustainable. The advocacy community should continue to monitor IMF programs to verify that the change in approach is employed in practice. Since economic growth is the most important factor in the fiscal space available to pay HRH employment, it is important to do as much as possible to help countries maximize growth. To improve external technical support for macroeconomic policy, the advocacy community should continue debate and analysis of alternatives concerning: (i) approaches to promoting growth and (ii) how best to use external resources. In addition, open debate and analysis would benefit if the IMF made public information on alternative policies that it is considering.
- *Encourage the IMF to explore multiple alternative macroeconomic scenarios as well as to put in place transparency policies* that are in compliance with the nine principles of the Global Transparency Initiative (GTI).
- *Build on the work of Preker et al.* in making pre-service training estimates:
 - **Conduct analyses for other regions:** Countries in regions other than Africa have similar critical HRH scale-up needs, and it would be desirable to also have estimates of their economic prospects for financing the desired scale-up and the needs for complementary external assistance.
 - **Conduct country-specific analyses:** Individual country situations are hidden in the aggregates and can vary widely given different HRH starting points, prospects for economic growth, ability and commitment to increasing the share of government spending to health, priority given to HRH relative to other health spending, prospects for offering health insurance coverage, prospects for mobilizing external assistance, etc. Country policymakers and their external partners need to know the country-specific situation to be able to make the best choices for each situation.
 - **Allow more items to vary in alternative scenarios:** Some of the items that are held constant in Preker's projections could be allowed to vary, such as the share of health spending devoted to HRH employment and the share of household income spent on health as incomes grow.
- *Conduct macro analysis on HRH expenditures:* Capture the actual expenditure on HRH both by categories of HRH, sector (public, private) of employment, and sources of revenues.

¹⁹ To determine which LICs fall into which of the two categories requires detailed cost estimation and assessment of fiscal possibilities at the country level.

AREA TWO:

Financing capital and recurrent costs of scaled-up capacity to produce HRH

2

Background

Key question

What is the cost (investment and recurrent) of producing the needed HRH?
How can the cost be funded?

Description and definition

*The production of HRH requires financing of capital and recurrent costs of pre-service training.*²⁰ Given the initial stock, attrition rates, and targets for scaling up the numbers and attaining an appropriate skill mix of HRH, a country's medical education system²¹ needs to produce the desired number of HRH. There are recurrent costs to the pre-service training of HRH, including paying teachers; providing books, labs and supplies, equipment, and maintenance and repair of facilities and equipment; paying for living expenses of the students; and so forth. In addition, there are investment costs that must be paid (or accounted for). When the scale-up of HRH requires so many more students to be trained that additional physical capacity is needed,²² then new buildings (classrooms, teachers' offices, labs, etc.) must be built and paid for, whether as additions to existing schools or as entirely new schools. Even when no new construction is required, there is an investment cost to pre-service training in terms of the amortization of the existing schools used. The physical plant and equipment is depreciating (losing financial value, becoming obsolete and physically deteriorating), such that it will need replacement someday, even if not in the immediate financial planning time horizon.

*The extent of attrition*²³*of HRH affects the needed numbers of new HRH and thus the financing needed to produce them.* Policy and financial choices can affect attrition. Examples include policies concerning retirement age and requirements to serve in the government sector if one benefited from government-funded pre-service training. The employment opportunities, pay, benefits, and working conditions offered to HRH can affect their choices to: (1) remain in or exit the health sector; (2) choose to work in government or private employment; (3) stay in or leave the country; and (4) serve in rural or other disadvantaged areas versus in cities or other relatively privileged areas.

The same fiscal constraints faced by governments concerning employment (see issue area one above) are relevant for the costs of scaling up pre-service training. Governments are limited by their tax take from GNI, by their willingness to borrow, and, in some cases, by the availability and effectiveness of the in-country risk pooling mechanisms to generate financing from health service users.

20 In-service training is taken up in issue area three on "retention".

21 Alternatives are to send students to other countries for training or to recruit health workers from other countries, but most LICs are likely to train most of their own HRH.

22 Some countries, e.g., Sudan, have organized two shifts at schools to limit the need for additional physical infrastructure.

23 Attrition is defined as "those exiting a country's health sector via retirement, death, immigration or those seeking employment in others sectors or leaving employment altogether".



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They must choose how to allocate their resources among competing sectors and among competing needs within sectors. In practical terms, the allocation of government resources for pre-service training of HRH is complicated by the fact that, in many countries, some or all pre-service HRH training is the responsibility of the ministry of education or higher education, not the ministry of health, which usually is responsible for employment of public sector HRH. This means that there must be coordination between the ministries responsible for HRH pre-service training and employment, so that adequate and matched resources are allocated to both. Further, public and private health service providers compete for the employment of graduates of pre-service trainings schools.

Private spending on pre-service training offers some interesting possibilities for financing investment costs. In some countries, private entrepreneurs, whether for-profit or not, have begun to open medical schools and other HRH training institutions. This has the potential to save governments from the need to pay for some of the costs of pre-service training.²⁴ On the one hand, if governments cover students' tuition fees and living costs at private schools, they pay the same recurrent costs of pre-service training that they would otherwise pay were the students in public institutions. But the governments are not covering upfront capital expenses.²⁵ On the other hand, governments could save even more if students pay for their own pre-service training at private schools. Paying privately for pre-service training is a profitable investment for many students and their families, since HRH earn several multiples of per capita income in nearly all countries.²⁶ Governments could consider providing student loans to assist students wishing to pay for privately provided training. Through either paying students' tuition fees and living costs at private schools or offering student loans, government's financial burden of educating and training HRH would be lessened and the country would have increased HRH.

Work to date

The capacity for pre-service training of HRH is a constraint. A 2006 report by McKinsey & Company concludes that the chief bottleneck to HRH scale-up in Tanzania is in training capacity rather than the supply of willing students, noting that there are over 1,000 qualified students for the 200 places every year. Similarly, Grameen Kalyan, a subsidiary of the Grameen Bank in Bangladesh, is starting its own private university to train those willing and qualified students who did not gain admittance to the public university (see case study below).²⁷

24 While private sector education can defray some of the governments' funding requirement for pre-service training, in some cases the resources it produces do not always benefit the source country. For example, many of the private medical and nursing schools in India are explicitly designed for HRH export. Therefore, including the resources invested in and spent on these institutions as contributions to filling the HRH gap would be misleading.

25 Owners of private schools will seek to recover their investment costs through the tuition fees paid; commercial private schools will seek to earn a return on their investment, nonprofits will seek only to break even on their investments.

26 U.S. doctors earned six times per capita income in 2006 and eight to nine times per capita income in the 1960s and 1970s (Cundiff 2006).

27 One of governments' challenges is to better utilize the existing physical facilities for pre-service training. With increased capacity for management of resources (both human and physical), this issue will gradually be addressed.

The price tag for pre-service HRH training in the Africa region could reach \$30 billion by 2015. Building on their fiscal space-based projections of growth in HRH employment, described above, and assumed attrition rates, Preker et al. (2007) estimate the pre-service education and training costs for the Africa region by 2015. Under the employment scenario labeled “continuation of current trends,” African governments would be able to employ 640,000 more HRH in 2015 than in 2007 at a pre-service training cost of \$14.7 billion; under the “best case” scenario in 2015, African governments would be able to employ 1.7 million additional HRH at a pre-service training cost of \$30 billion. Investment in training facilities will also be needed, which may cost \$10-20 million per country.²⁸ A study by Conway et al. published in the *McKinsey Quarterly* estimates that the pre-service training needed to fill the workforce gap in Africa would cost \$33 billion over 20 years.²⁹

The high level of funding needed for HRH pre-service training implies huge additions to funds allocated to ministries of education (at least in the short run). Preker finds that the cost of scaling up medical and nursing pre-service training could be as high as the equivalent of doubling of total higher education costs.³⁰ Countries would have to be convinced that such a large share of higher education spending (that flows through ministries of education) should go to the health sector. The Alliance Task Force on Scaling-up Education and Training points out that the costs of scaling up education and training decline proportionally over time as capacity grows to accommodate target level of HRH. As a result, the high level of funding allocation for ministries of education will be needed mainly in the near term.

Countries need to make choices concerning the HRH skill mix that best fits their epidemiological profile and fiscal possibilities. Only a few years ago, Buchan and Dal Poz (2002) noted that the literature on skill mix was merely descriptive, methodologically weak, or too focused on high-income country experience to be directly applied to the developing country context. Since then, WHO produced *Task Shifting: Global Recommendations and Guidelines* (WHO 2008a) to help LICs find the appropriate skill mix. The idea of task shifting is to tailor the mix of HRH to epidemiological needs so that services are provided by those HRH with adequate, but not higher, training. Hence, where tasks can be shifted from higher (e.g., nurses) to lower (e.g., community health workers) level HRH, both the costs of employment and pre-service training are lowered for the same services. Policies on task shifting should be used to guide planning for and financing of pre-service training.

28 This estimate is based on pre-investment studies conducted by the World Bank in Liberia, Sierra Leone, Ghana, Nigeria, and Rwanda (Preker, 2007).

29 This study uses the WHR estimate of an 817,000 shortfall to estimate that there is demand for approximately 600 new medical and nursing schools. This exceeds the WHR 20-year training estimate for Africa of \$25 billion, but is less than the WHR 10-year estimate of \$18.5 billion.

30 Preker finds that increasing HRH employment in Africa by one million by 2015 would require that half of all higher education spending be devoted to HRH pre-service training.

CASE STUDY: BANGLADESH

Pre-service training of HRH in the private sector

Grameen Kalyan (GK) (Grameen Well-being) was founded as a Grameen Bank subsidiary in 1996. It is now an independent health service and insurance provider that has consistently recovered 80-90 percent of its capital and operating investment. It manages a health program that comprises 20 private health centers, each with its own qualified physician, office manager, female paramedic/nurse, laboratory technician, and five female health assistants. Every health center has the capacity to serve a population of 30-35 thousand people. Patients pay either through insurance, for which they pay to premiums to a Grameen Bank branch, or through direct fees if they are not Grameen Bank members.

There is demand to scale up the GK health center services in all areas of Grameen Bank operation. However, there is not a sufficient supply of medical professionals. GK has two strategies for overcoming this challenge: (1) forgiving student loans of those MBBS (Bangladeshi medical degree) graduates who serve in rural areas; and (2) founding a private medical university to scale up the number of qualified MBBS cadres.

Within the last two years, GK gave loans to 252 students to cover the tuition and living expenses for attending public medical schools. These loans will be forgiven if students serve at GK rural health centers.

GK is seeking to partner with an existing university to open a private medical college to produce medical professionals in Bangladesh. Currently, GK is building infrastructure for a medical school in Dhaka and is conducting due diligence on potential curriculum partners. In the meantime, it is sponsoring qualified students to be educated in India on the condition that they would return to Bangladesh for rural service.

Source: Interview (2008) with Chandra Barua Dipal, Chief Operating Officer, Grameen Bank

Agenda for additional work

Country level work

- *Begin dialogue with Ministries of Education and other relevant Ministries.* The estimated large cost of scaling up pre-service training (PST) means that Ministries of Education will be important partners for Ministries of Health and other Ministries³¹ in the effort to achieve HRH scale-up. Such partnerships are often not as easy as they might seem, so it is best to begin the discussions around them as soon as possible.
- *Find out how much the private sector could contribute.* Many countries now have private HRH pre-service training schools, in addition to those operated by governments. The planning process should consider the graduates produced by these private schools and how many of them are likely to take government jobs. In addition, there might be ways to facilitate or stimulate investment in additional private pre-service training capacity to alleviate public sector capacity limitations that otherwise could constrain HRH scale-up. For instance, governments could provide for streamlined approvals and accreditation processes, offer tax breaks, or provide scholarship support for student tuition payments.
- *Consider policies to require tuition contributions* from students at government pre-service training schools to help pay for the costs of the training and the needed expansion of capacity, while offering complementary student loan and grant programs to ensure access by all academically qualified applicants, regardless of family resources, to HRH training.
- *Estimate and project the cost of HRH PST* needed to meet HRH employment objectives.

Global work

- *Learn more about existing private initiatives in pre-service training:* Conduct evaluations or assessments to test the sustainability of approaches such as that of GK in Bangladesh.

³¹ Some countries place “nurse training” in a specific ministerial department under vocational education.

AREA THREE:

Costs and tradeoffs concerning improved HRH retention

3

Background

Key question

What retention incentives have been tried, do they work, and how much do they cost?

Definition and description

Financing HRH retention efforts requires estimation of the costs of financial and non-financial incentives. When countries wish to scale up the numbers of HRH, they can do so through some combination of: (1) producing more HRH; and (2) keeping more of those already in place by improving retention. The opposite of retention is attrition, which can be categorized into two types: economic and natural. Economic attrition refers to a worker leaving the health sector to pursue alternative opportunities, both financial (higher salary) and non-financial (better training, supervision, and other working conditions; better housing; etc.). HRH sometimes find those opportunities in the health sector of another country (for example, Filipino nurses migrating to the United States or Tanzanian doctors migrating to South Africa), or in other sectors in their own country (from a government's point of view, a public sector employee moving to the private sector counts as attrition). Economic attrition could be reduced by improving the conditions in the original health sector, thus making the alternative less attractive. Of course, financial and many non-financial incentives have costs. Natural attrition refers to workforce departures for reasons of retirement, death (especially in the face of HIV/AIDS), and so forth. To diminish natural attrition, countries can raise their retirement age, provide workers information about disease prevention, and improve workplace safety. The latter two items also have cost implications.

Work to date

Economic attrition

Economic attrition through international migration is considered a major issue. A number of policies have been identified to deter it. WHO (2005) estimates that more than 20,000 physicians and nurses leave Africa annually. The share of African-born physicians residing abroad ranges from 78 percent of health workers trained in Mozambique to 10 percent trained in Egypt (Clemens 2007). A study of Jamaican HRH shows that 80 percent of all trained doctors and 95 percent of all nurses were lost to emigration between 1978 and 1985 (Bossert 2007). To address attrition, JLI (2004) rejects both outright prohibition of migration and acceptance of full labor mobility. To make emigration less attractive, JLI recommends that countries improve HRH working conditions, increase remuneration, and develop "supportive systems." JLI also suggests that countries consider mandating in-country or rural service in return for publicly financed training. Countries could also ramp up training of HRH cadres qualified only to work in their country of origin, including community health



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workers (CHWs); encourage émigrés to return;³² and facilitate skills transfer and remittances from their HRH in the diaspora. JLI also suggests that HRH-importing countries should train more of their own HRH, and police themselves with codes of conduct, perhaps setting quotas or agreeing not to recruit from very distressed countries. JLI also proposes a “global educational reinvestment fund” whereby rich countries would fund training of HRH in the developing world. The WHR echoes JLI’s emphasis on improved working conditions, facilitation of reverse migration, and implementation of responsible recruitment policies. It also advocates efforts to make the health care field more welcoming to females, as well as improving on-the-job safety and recruiting in rural areas. In 2003, the Commonwealth countries developed a Code of Practice for International Recruitment to address the abovementioned issues.

However, in certain circumstances migration might have a positive impact on HRH financing. Kapur and McHale (2005) of CGD oppose outright controls on emigration *except* in the case of health care “poaching”.³³ The authors propose compensation of source countries by recipient countries, increasing diasporas’ connections to source countries by lowering barriers to travel, facilitating remittances and investment, and creating incentives to return, such as making retirement benefits portable or creating savings accounts that can only be accessed on return. However, the effects of such reimbursement approaches and policies have not been assessed yet. For example, the émigrés from Jamaica have offered sizable remittances but their specific amounts are not available. Among recipient countries, only Norway reimburses source countries for the cost of émigré training (Mullan 2008). The Regional Network for Equity in Health in East and Southern Africa (EQUINET) together with the East, Central, and Southern African Health Community (ECSA–HA) has conducted a literature review on the costs and benefits of retention of health worker migration in East and Southern Africa, but it has not yet published its findings.³⁴

Providing “targeted” pre-service training can reduce emigration and lower employment and pre-service training costs. Both Ethiopia and China have had success in adapting their pre-service training programs to deter migration. They have done so by creating HRH cadres that meet local needs, but are not trained to a level that would qualify them for emigration. Ethiopia struggled to make nurses accessible to all of its population. The cost of training and employing the needed number of nurses was one obstacle; meanwhile, its nurses were emigrating in great numbers, meaning that many more had to be trained to achieve a given target number actually serving. To address this situation, Ethiopia now is pursuing a large-scale task-shifting effort.³⁵ The government is training and deploying 30,000 health extension workers (HEW) whose skills are sufficient to meet a large share of basic needs specific to the local situation. In addition to requiring less-costly pre-service training, the HEWs’ skills are less transferable

32 Nigeria’s Ministry of Health has entered into formal dialogue with its physicians in the diaspora, signing memoranda of understanding with groups in the United States and United Kingdom in the hope of attracting some of them back (Lambo 2008).

33 Defined as active recruitment of HRH.

34 The analysis in this study looked at monetary and non-monetary costs and benefits of migration to the health system, the health workers and society at large. A review conducted as part of the unpublished EQUINET study found major constraints in conducting migration cost benefit analysis as there is limited data, especially historical and opportunity cost data that include measurements of externalities.

35 Full analysis of the Ethiopia experience has not been conducted yet. Assessing the true impact of this study will require a controlled experiment.

than those of nurses, many of whose tasks they will take on. Their more limited training reduces the likelihood that the HEWs will emigrate. The results of the HEW program are not yet conclusive. The HEWs do not emigrate, but their ability to effectively meet health service needs remains to be verified. For example, a preliminary study by Haile Negasse et al. states that “Although Health Extension Workers had visited them less frequently than planned, participants generally found the program to be helpful. Despite this, their basic health knowledge was still quite poor regarding the major communicable diseases and their vectors” (Negasse et al. 2007). Another suggested approach to reduce migration is to adapt health training curricula to the local context (either local rural contexts to retain HRH in rural areas or local country context to prevent emigration). To reduce rural-urban migration, China implemented a local training program called “chicken doctors” (with metaphorical reference to chicken’s limited ability to fly, that is, to emigrate) aimed at reducing outmigration and the cost of pre-service training (see case study below).

CASE STUDY: CHINA

Local pre-service training program for health workforce scale-up in rural China

Scale-up of human resources for health was one of the greatest challenges for the 1982 Chinese health system reform. China’s formal medical education system required five to six years of training following high school graduation. Graduates received nationally and internationally recognized licenses that enabled them, like “birds” with strong wings, to fly anywhere in the country and abroad. China came to realize that it was impossible to retain these highly skilled professionals in its rural areas.

Therefore, rather than training more full-fledged physicians, the Chinese government developed an alternative training approach of shorter duration and customized to local needs, called the “chicken” program. Chickens have wings that enable them to get off the ground, but they cannot fly out of their owner’s yard.

The characteristics of this adapted program are: (1) *lower-cost training*, one to three years post-secondary school instead of five to six years; (2) *customized training* in a curriculum tailored to theories, skills, and technologies that best match the doctors’ skills with rural health needs; (3) *local recruiting* of students, leveraging the students’ ties to their local area; (4) *rural certification*, “chicken” certificates that qualify doctors only for work in rural areas.

With the successive implementation of this training program, China was able to update and scale up its health workforce within a short period of time at low cost. Currently, almost all villages (with a population of 1,000-2,000) have village health posts with one locally trained (“chicken”) doctor, and all townships (with a population of 20,000-60,000) have township health centers with several such doctors.

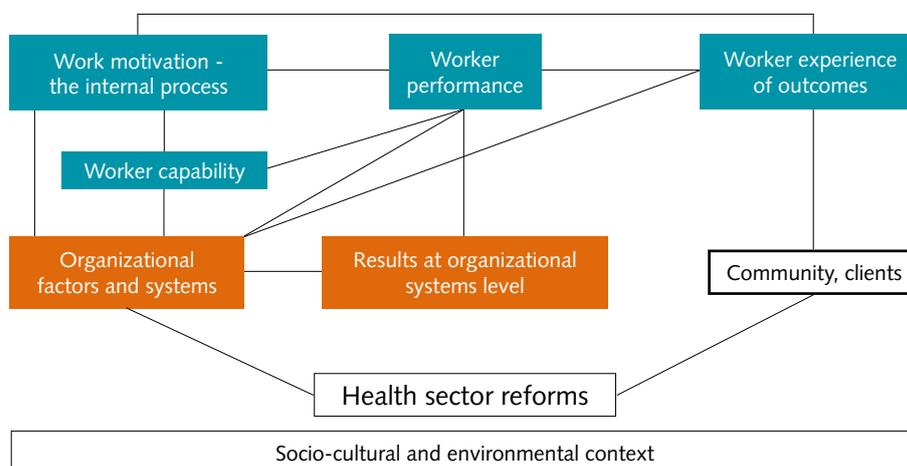
Evidence is mixed on the effect of wage differentials on attrition. Vujcic et al. (2004) attempt to measure the effect of wage differentials on emigration by examining if migration is greater in response to larger wage differentials between sending and receiving countries. For example, the authors attempt to measure whether, all other factors being equal, migrants prefer the United States, where wages³⁶ are higher, to Great Britain, Australia, or France. Alternatively, they examine whether “sending” countries with lower wages produce more migrants. At the current level of wage differentials, they do not find a statistically significant relationship between wages and migration, suggesting that non-wage factors such as working conditions may be more appropriate policy levers to stem migration. The authors are cautious about data quality and comprehensiveness, and thus about their ability to isolate the effect of wage differentials on migration decisions. However, evidence from Malawi (Palmer 2006), where 700 HRH who had left the government health sector returned when salary top-ups were offered, illustrates that wages may have a greater retention impact than academic research to date has illustrated. Similarly, a technical brief by the USAID-funded Capacity Project (2006) cites studies that are evidence of higher wages leading to improved retention; for example, in Gongola State in Nigeria, male CHW who had higher wages stayed in their jobs for 3.25 years versus those who received lower wages and stayed for two years. The “threshold” of effective wage increase by country, however, is understudied. The Center for Strategic and International Studies, in a report of its task force on HIV/AIDS, confirms the above-mentioned findings and states that the key barriers to chronic HRH shortages are poor pay and benefits; poor working and living conditions; health risks; and outmoded work rules.

There is some research on supply responses to non-wage factors, but there are no conclusive findings. Very little has been documented on how non-financial incentives are implemented (e.g., the time frames, target HRH cadres, etc.), managed, and monitored. EQUINET and ECSA–HA conducted a study on the non-financial incentives for HRH in Southern Africa and categorized incentives in three areas: 1) *training and career path-related incentives*, which include continuing professional development, opportunities for higher training, scholarships/bursaries and bonding agreements, and research opportunities; 2) *social needs incentives* such as housing, transport, childcare, food, employee support centers, etc; 3) *improved working conditions incentives* offering better facilities and equipment and providing better security for workers. However, the study did not find any evidence on relative effectiveness of these non-financial incentives (Dambisya, 2007). Similarly, the Capacity Project (2006) asserts that in its experience, the variables that affect retention are only anecdotal. However, the authors point to a GTZ (German Agency for Technical Cooperation) project in Zambia that finds that refresher trainings are most effective at increasing HRH retention, whereas in Ethiopia, a mix of continued education, provision of housing, and establishment of clear career structure is claimed to have resulted in improved job satisfaction and retention. Delegates at a regional meeting sponsored by the Swedish International Development Cooperation Agency (SIDA) in Tanzania “felt that opportunities for further training are among the most attractive” (SIDA 2007). Vujcic and Zurn (2006) assert that if policymakers wish to increase employment levels in the context of an HRH shortage, they must either increase wages or institute supply-side policies. However, little is known about supply responses to non-wage incentives. Jack (2008) finds wages to be more cost effective than non-wage factors in Ethiopia where HRH prefer the equivalent values in increased wages to non-wage incentives. One of the

36 Wages do not always capture the full range of HRH “revenues.”

first pieces of work on worker motivation and wage incentives was developed as early as 1999 by Bennett and Franco at Abt Associates Inc.; their framework (see figure) aimed to put worker motivation in the context of overall health reform.

Health Worker Motivation in the Context of Health System Reform: A Conceptual Framework



Source: Bennett and Franco (1999)

One of the innovative non-financial incentive approaches currently being tested is a Wellness Center for Nurses sponsored by Becton, Dickinson and Company and the International Council of Nurses. The wellness centers are envisioned to provide comprehensive health services for HRH and their immediate families with the ultimate goal of retaining a healthy, motivated and productive healthcare work force, leading to a strengthened healthcare delivery system in sub-Saharan Africa. The first center was opened in September 2006 in Swaziland.³⁷ Human Resources for HIV/AIDS (HRHA)-specific retention strategies are similar to those for general HRH. Médecins Sans Frontières (2007) identifies a menu of incentives for HRHA workers: increasing salaries and benefits; improving working conditions; and ensuring there is appropriate HRHA management and opportunities for career advancement.

While there is information on wage and non-wage incentives, there is no systematic method for selecting the most cost-effective incentives. In an issues paper on nurse retention and recruitment (Zurn et al. 2005), WHO states that research illustrates that some hospitals are more successful in recruiting and retaining HRH, and therefore are called “magnets.” These magnet hospitals also have superior health outcomes. The characteristics or “forces of magnetism” of the magnet hospitals, as described by American Nurses Credentialing Center, are shown in the box below. Some of the “forces” have low costs, others higher costs. However, it is not clear whether magnet hospitals could have achieved similar results utilizing different mixes of incentive approaches at a lower cost. Zurn points out that effective interventions for retention focusing on only one or a few “forces” would be unlikely to work in isolation; there is a need to implement comprehensive retention policies through a package of different strategies. While retention programs such as USAID’s in Zambia tended to include mostly financial incentives such as salary top-ups and group incentives, recent programs

37 More information on the center can be found at: http://www.bd.com/contentmanager/b_article.asp?Item_ID=22857&ContentType_ID=1&BusinessCode=20001&d=Trading&s=press&dTitle=Press&dc=&dcTitle=

in Afghanistan, Malawi, and Nigeria have integrated financial incentives and non-financial ones such as professional development, transportation, day care facilities, employment for male spouses accompanying female HRH, and security at work (UN High Level Forum on Health MDGs, 2004).

EXAMPLE: RETENTION OF NURSES

Fourteen “Forces of Magnetism” Impacting Retention and Recruitment of Nurses

1. High-quality nursing leadership
2. Flat organizational structure
3. Open management style
4. Supportive, individual personnel policies and processes
5. High-quality care
6. Professional models of care
7. High level of nurse autonomy
8. Quality assurance initiatives
9. Consultation and other resources available
10. Positive relationships between community and hospital
11. Support role of nurse as teacher
12. Positive image of nursing
13. Positive nurse–physician relationship
14. Professional career development

Source: American Nurses Credentialing Center

One important test case illustrating some retention success combining wage and non-wage incentives is taking place in Malawi, where DFID and the GF have supported an Emergency Human Resources Program since 2004. The program has the following components: salary top-ups of 52 percent; increased capacity for training by 50 percent; use of international staff as stop-gap technical assistance for HRH planning and management; and improved monitoring and evaluation. The program was rolled out in areas where HRH ratios to population are among the lowest in the country. An assessment of progress in April 2005, one year into implementation, found that the package has had a positive impact on in-country attrition: nurse outflows from public sector decreased; 591 new HRH were recruited; and 700 HRH who had dropped out of government service returned (Palmer 2006).

Zambia and Ghana experimented with similar measures but with less success. In Zambia, health workers were “de-linked” from the rest of the civil service

(thereby taking away the employment guarantees associated with civil service), and remote area incentives and group performance bonuses were instituted. But according to the 2004 UN High-Level Forum for the Health MDGs,³⁸ the cash incentives, which amounted to less than \$1 per person per month, were too small to have an effect and the de-linking led to strikes and eventually “lost momentum.” Ghana also instituted de-linking in the mid 1990s, as well as car and housing loans, extra duty allowances, and rural service bonuses. The report of the forum (UN High-Level Forum for the Health MDGs 2004) suggests that the effect on retention of the extra duty allowances and car loans has been “negligible.” World Bank staff involved in the monitoring of this program assert that part of its failure was due to inadequate implementation. In both cases, HRH lost something (their civil service status) and gained something (bonuses, loans, allowances) so the net impact of the programs was unclear. Thus, the small effect on retention should not be surprising.

Natural attrition

Research on reducing the avoidable aspects of natural attrition is limited. The two main drivers of natural attrition are retirement and death. JLI recommends that governments try to reduce the rate of early HRH retirement, but few countries have done anything in this regard. Additionally, in-service training aimed specifically at protecting HRH from contracting disease has had limited success in reducing mortality.

Agenda for additional work

Country level work

- *Examine alternative financial and non-financial incentives that might reduce the temptation to emigrate.* Using surveys or focus group discussions, ask HRH for feedback on the working conditions and financial rewards that are important to them, to help determine alternatives that are likely to work and to be affordable. Include among the possible alternatives bonding arrangements, where HRH that have benefited from government subsidized pre-service training are required to serve in government employment for a given period of time post graduation. Choose incentives that indicate the greatest payoff in terms of retention for the lowest cost.
- *Consider tailoring pre-service training of HRH to provide the skills needed for the country's specific situation, without necessarily providing the skills that facilitate emigration (as in Ethiopia's CHW training and in China's “chicken doctor” program).*
- *Consider changing policies for mandatory retirement ages or full pension benefits after a given number of years of service.* Raising or eliminating a mandatory retirement age could allow more HRH to remain in the workforce. Where full pension benefits have been promised after a given number of years of service, it might be considered unfair to take them away. However, not making this promise for new hires could help with retention in the future. For those to whom full pension benefits are promised, additional pension benefits might be offered if they agreed to stay at work longer.

38 <http://www.mvproject.org/hrh-conference/hrh-information/high-level-forum>

- *Find out from the country's HRH diaspora what conditions might bring them back to the country.* (Note that some countries' physician diasporas, such as Nigeria's, have associations that can act as their representatives.) Consider the costs of the conditions against the likelihood of returned diaspora HRH (and what additional investment resources they might bring with them).
- *Measure and monitor attrition rates by area.* Areas to compare include geographic (rural versus urban) and sector (public versus private). This information will help policymakers see where action is needed, for example, to improve HRH working conditions in rural areas or increase remuneration of HRH in the public sector to remain competitive with private providers.

Global work

- *Document the experience from Ethiopia and other country-based programs in a systematic way:* It would be useful to quantify the savings achieved by Ethiopia if its "task shifting" to CHWs is successful. Such quantification would capture the effectiveness of the CHWs in covering the targeted basic health needs of the rural populations and estimating the savings in employment and pre-service training costs.
- *Conduct global analysis on wage and non-wage incentives as well as HRH overall buying power versus the buying power of other professions:* It seems that there would be a relationship between: (1) the size of wage gaps and (2) differences in non-wage conditions of work and the propensity to emigrate. However, the literature offers no clear and quantified behavioral response (e.g., for "x" percent closing of the physician wage gap between the source and recipient country, emigration would be reduced by "y" percent) that could be used for setting wage and non-wage policy aimed at increasing retention. The relative merits and optimal combinations of wage and non-wage incentives would benefit from more evidence. More results from Malawi (when available) should bear close attention.
- *Create a global inventory of retention strategies and conduct systematic analysis of the costs and benefits as well as the economic tradeoffs that each of these strategies requires:* Many variations of bonding and other retention strategies have been tested, but there has been limited work in systematically cataloguing them and comparing their relative effectiveness.
- *Conduct analysis of the costs associated with self-sufficiency of the North:* Brain drain is ubiquitous and hemorrhagic in effect (once it begins it tends to continue and, often, increase). Greater degree of self-sufficiency in the North would seem to be an important part of any retention strategy. As long as economic disparities of the current magnitude exist between South and North and there are HRH shortages in the North, many Southern HRH will migrate. Policies in the North that promote greater self-sufficiency will lower the pressure on LICs (see the report of the Alliance Migration Task Force for more on this topic).

AREA FOUR:

Costs of achieving more equitable deployment of HRH

4

Background

Key question

What are the costs of efforts to achieve a more equitable deployment of HRH?

Description and definition

Many countries are faced with an actual physical distribution (or deployment) of HRH that serves those with relatively high incomes well and the disadvantaged less well. This is the case for both government-employed HRH and those employed in the private sector.

Governments face many challenges in deploying HRH to needy areas. It would seem that a government could deploy HRH wherever it wishes—and to attack the major sources of morbidity and mortality, this usually would mean putting relatively more HRH in rural areas and urban slums. Nonetheless, governments face practical issues in trying to do so, such as: attrition of HRH assigned to needy areas; the constraints of civil service protections on disciplining HRH who do not report to their assigned posts; and human resources information systems that are too weak even to allow decision makers to know where HRH are deployed. Being posted to a rural area has a number of disadvantages for government HRH, including a lack of urban amenities such as running water, electricity, and good housing; limited employment opportunities for spouses; limited schooling options for children; and fewer opportunities to supplement income by “moonlighting” (serving private patients for pay during off hours).

Private commercial providers respond to market demand in deciding where to locate their services (including their HRH) and privately employed HRH are an important part of the overall HRH distribution. Commercial health services providers tend to locate their HRH where there is a concentration of income and/or where government provision is lacking, in terms of numbers and/or perceived quality. Urban populations tend to be better off financially and government-provided services are often considered to be of unsatisfactory quality. Hence, there is a tendency for commercial private providers to locate in urban areas—though this is not to the total exclusion of poorer and more rural areas in most countries. Household surveys often show that poor people devote half or more of their out-of-pocket spending on health to paying for privately provided services. Commercial providers tend to look for underserved niches and, sometimes, this can be serving the poor. In addition, commercial providers compete with public providers where the client satisfaction from public facilities is low.

Some “inequality” in the deployment of HRH is inevitable as a result of the need of the health system to offer basic, primary care services and more-specialized referral care as well. Ideally, facilities that offer basic and primary care services and the HRH who provide those services are equitably distributed geographically; however, referral facilities and teaching hospitals are located in large population centers, thereby concentrating HRH. Thus, a “perfectly equal” deployment of HRH where the population to HRH ratio in a given radius is equal everywhere in



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a country is unlikely to be achieved, though a more equitable deployment than the status quo in many countries, especially of basic and primary care facilities and their HRH, is highly desirable.

Work to date

Work in the area of equity of deployment identifies disparities related to availability and affordability of health services to geographic areas where poverty is concentrated, as well as to marginalized groups (women, children, etc). The wage at which urban HRH would choose to serve in rural areas (termed the “reservation wage” for rural services) as well as the level of incentives necessary to motivate rural service is not clear.

A number of strategies for rural recruitment have been suggested and in some cases tested, but cost information is rare. Wibulpolprasert and Pengpaibon (2003) present strategies used by Thailand to stem brain drain and keep HRH in the public system. The authors identify four types of inequitable distribution: geographic, skill mix (doctor vs. nurse), gender, and overspecialization. They conclude that it is possible to have a positive effect on equity through: (1) targeted investment in rural facilities; (2) combined recruitment from rural areas with requirements for several years of service as a condition of subsidized education; (3) curriculum reform to emphasize rural primary health; and (4) hardship bonuses for rural service. These findings are echoed in the WHR that identifies recruitment of rural students, compulsory service upon graduation, and provision of monetary incentives as the most effective rural recruitment policy options (WHO 2006). However, estimates of the costs of these interventions are not available. For example, it is not clear what the level of “hardship bonus” should be. As mentioned above, Jack et al. (2008) report that in Ethiopia, the wage equivalent of “superior housing” is the greatest motivator of doctor and nurse willingness to serve in rural areas. In India, the size of the bonus given to those HRH in rural areas is based not on the wage equivalent of certain conditions (e.g., housing or schooling), but on the distance of the service area from major urban centers. It seems clear that some kind of compensation for the hardship of rural posting is needed; however, the literature does not provide a clear formula for estimating the reservation wage for rural service.

Other strategies, such as compulsory rural service, have been successful in ensuring rural access to health care but have had mixed effects on overall HRH retention. Burcay Erus et al. studied the levels of HRH in Turkey’s rural areas in 1981–95, when there was a rural service requirement, and in 2000, five years after the rural service requirement was lifted. He found that the requirement ensured rural areas had higher levels of HRH. However, de Laat, et al. (2008) and Jack et al. (2008) analyze survey data from Ethiopia and find that non-voluntary approaches to deployment (lotteries, obligatory service requirement, etc.) increase overall attrition of qualified staff. De Laat also finds HRH staff who have served in rural areas are more likely to have a higher salary in the future and to pursue continued education. Thus, de Laat suggests that a better incentive for rural recruitment would be to market the career enhancement benefits of rural service to potential workers.

Strategies aimed at recruiting female HRH for rural service should be adapted to their specific needs and wants. Providing an adequate level of security for women is essential for ensuring their service in rural areas. Brown and Reichenbach (2004) find that women have greater demands for transportation, access to toilets, and respect from superiors.

The government plays an important role in ensuring strategies are implemented to overcome inequities. Experience to date shows that privately employed HRH gravitate towards urban areas and paying populations. Therefore, government will inevitably be engaged in “safety net” programs, rural health programs, and incentive programs for disadvantaged populations. Two examples of attaining equitable deployment are illustrated in the case studies shown in the box below. In both cases, the providers were under contracts that rewarded them for successfully delivering services to rural populations (i.e., the provider contractors were innovative in finding ways to post more HRH in the rural areas):

CASE STUDIES: AFGHANISTAN, CAMBODIA

Using Contracts to Attract Health Workers to Underserved Areas

In Afghanistan, contractors offered a number of inducements to female health workers to relocate to remote rural areas. Besides better pay, this included employment for a male relative (very important in the cultural context), housing near the health center, and a small generator to provide light and entertainment (e.g., a DVD player). The results were impressive. Before the contracts, only 24 percent of health centers had at least one trained female health worker. After two years of the contracting, 86 percent of the health centers had trained female staff.

In Cambodia, a contractor in one district was able to dramatically increase the number of doctors working there by paying wages that were much higher than the government rate (but still only US\$ 250 per month). Combining higher salary with certain benefits like a motorcycle and a performance-based bonus allowed the nongovernmental organization to attract five doctors to work in the district where there had been not a single doctor before.

Source: Loevinsohn and Harding (2005)

There is an economic incentive for HRH in rural areas to undersupply health care, implying that once new incentive systems are created, current HRH levels might be adequate. Hammer and Jack (2001) use the principal-agent/institutional economics framework to explain poor health care outcomes in rural areas. Their analysis shows that because of their remoteness, government health care workers posted to rural areas are likely to undersupply health care, since it is extremely costly for the health ministry to monitor them to try to improve their performance. A World Bank study led by Oscar Picazo tends to confirm Hammer and Jack by finding that public sector clinics in 21 districts in Zambia consistently undersupplied health care. The level of HRH absenteeism and tardiness in responding to patient needs was estimated to be equivalent to full-time staffing of 10 rural clinics. This finding implies that in some rural areas, the issue might not be increasing the supply of health workers but rather ensuring adequate motivation of existing workers. In Thailand, the government tried to address this

issue by providing allowances for public sector doctors who refrained from also having private practices. The Thai government also offered subsidized education in exchange for three years of compulsory public service (bonding).

Finally, the most cost-effective way of ensuring equitable deployment might be to leverage the preferences of HRH. Pieter Serneels (2008) concluded from data from Ethiopia that the key to overcoming rural inequities is to realize that individual health workers have different preferences. Thus, approaches to rural retention could leverage and capitalize on individual preferences by providing bonuses according to those preferences. Serneels' research shows that some individuals would work in rural areas for as much as 80 percent lower pay than others. Thus, he says that policymakers should focus on recruiting those individuals who get greater utility from rural service. Serneels examines alternative sources of motivation for HRH in Ethiopia to move to rural areas and finds that the main explanatory factors are not wages but rather the health worker's desire to: (1) be able to help the poor; (2) learn about medical issues; and (3) have access to education for his or her children.

Agenda for additional work

Country level work

- *Recruit pre-service HRH likely to serve in under-resourced areas.* Identify students using the following criteria in addition to academic qualification: (1) those with a positive attitude toward rural service and (2) those who come from rural areas, so that once trained, the new HRH will be more likely to accept and remain in rural posts.
- *Examine alternatives and then provide financial and non-financial incentives to HRH posted to hardship areas,* such as financial bonuses, provision of housing, access to children's education, provision of water and electricity, security for female HRH, etc. A part of the process should be to ask HRH (again, through surveys or focus groups) what the most important incentives are to them. Another part of the process could be to study what incentives private providers, especially faith-based NGOs, offer to HRH in hardship posts. Finally, it would be important to carefully monitor and evaluate the cost and degree of success of the incentives in attaining higher retention.

Global work

- *Collect more country evidence about effective approaches to equitable deployment, including variations by gender of HRH, to minimize attrition of HRH assigned to undesirable areas:* Combinations of financial incentives, HRH needs, local recruiting, offering non-financial incentives or amenities, and efforts that take into account sex-specific concerns of HRH seem to be workable ways to make HRH deployment more equitable. These combinations should be further tested for different categories of HRH and their costs estimated, so that informed choices can be made about what to do and how much it will cost.

- *Study the experience of successful programs, both in developing and developed countries, and assess their applicability to other contexts:* One such example could be analysis of the United States National Health Service Corps (NHSC). This program, while costly by Southern standards, is an example of investments in education in return for clinical service by the trained professional. In the NHSC model, there are subsidies related to the practice site as well as for additional training for Corps members, so that NHSC clinicians can work and live in areas in which the market would not normally support them. The principles of the program are important ones that might be adapted to many different settings.

AREA FIVE:

Costs and effectiveness of methods for increasing the efficiency of HRH and reducing the numbers needed for scale-up

5

Background

Key question

What efficiency measures work? How much do they cost? What gains in efficiency and effectiveness are possible, and how do they affect the need for HRH?

Description and definition

The estimates of need for HRH implicitly make assumptions about the productivity of HRH. The assumptions are about how many people can be served effectively by each type of HRH. If the assumed productivity is higher than actual productivity, then more HRH would be needed to achieve the same health impact; if assumed productivity is lower than actual, then the health impact could be achieved with fewer HRH. Clearly, it is in the interest of health systems to try to maximize HRH productivity.

To make a net gain in health financing, efforts to increase productivity must produce more value than the costs of the programs. When productivity increases, the financial gains for health systems come in the form of the need to employ and train fewer HRH to achieve a given target for service provision.

Two methods to increase productivity are management improvements and mechanisms to hold workers accountable for performance. Many government health systems give little attention to management of HRH. Thus, motivation and morale are often low and productivity suffers. Similarly, accountability for performance within government is weak. Civil service rules limit the ability to offer incentives for good work or to sanction poor performance or the abuse of resources. There are few mechanisms to hold government HRH accountable for the quantity or quality of their work or for the diversion of work time to private practice or drugs and supplies to sale for private benefit. The health sector has seen an expanding number of experiences in using performance-based approaches to health financing in the early 21st century. These efforts have focused on increasing the number of services provided and maintaining or improving quality of care, but have given little attention to the specific effect of performance-based schemes on the need for HRH.

Work to date

*Improved accountability is one of the cited approaches for improving efficiency and effectiveness of care. The World Development Report (WDR), *Making Services Work for Poor People* (World Bank 2004), provides a broad framework for thinking about service productivity and efficiency generally (not specific to the health sector). The WDR highlights the institutional roots of many service delivery failures, noting that in many developing countries, public sector bureaucracies are often used as channels for patronage distribution as much as for actual service delivery. Thus, the WDR recommends that programs put in place accountability mechanisms between the public, political leaders, and front-line service providers.*



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The WDR notes that HRH performance is difficult to monitor, but suggests that accountability can be improved through carefully tailored reforms including decentralization, contracting, “pay for performance,” provision of vouchers to health care consumers, measures to increase consumers’ “voice,” community-produced services, and other reforms. Kazakhstan successfully implemented one such reform targeted at primary care excellence. The reform increased accountability by implementing improved management information systems so that the Ministry of Health could provide feedback to family group practices and implement competitive hiring and firing of staff. Zimbabwe attempted a similar reform aiming to improve accountability but with no success. The Zimbabwe plan was to implement performance-based reward systems, but health care workers resisted it, asserting that “patronage [that] permeated the health care system” would prevent the fairness of the performance evaluation process. This shows that the effectiveness of performance-based systems can depend on wider political issues within countries (PHR Primer, volume 2).

While improving accountability relationships is crucial, outputs like health care worker performance that are subjective, and thus hard to monitor, must rely to some extent on inculcating norms of conduct within service providers. This is what the 2006 WHR emphasizes in its discussion of efficiency, proposing that providers be given clear job descriptions, codes of conduct, tasks matched to skills, supportive supervision, and “reasonable” pay methods (e.g., increased salaries, de-linking HRH from civil service and its pay scales,³⁹ pay for performance, and hardship payments for rural area service).⁴⁰ It also points to the need for better performance statistics, improved infrastructure and supplies, provision of continuing education including distance learning, focused management, and accountability. Dieleman and Harnmeijer (2006) echo the WHR and World Bank findings by discussing *morale* and *working conditions* while also stressing that the best policy reforms *strengthen systems of accountability*, possibly through decentralization, citizen participation, and changes in payment systems. They also stress that there is a lack of evidence about the determinants of successful reforms.

Another possible approach for improved efficiency of HRH is performance-based management. Performance-based management, or “pay for performance,” is a promising approach for improving efficiency. Various approaches for performance-based management have been implemented and evaluated: competitive outsourcing of services to nongovernmental organizations (NGOs) and other service providers on the basis of performance, remunerating providers for meeting health targets, and providing patients with cash transfers, food, etc. for maintaining a preventive care schedule. Studies (both controlled and “before after” analysis) by Loevinsohn and Harding (2005), Eichler et al. (2006), Eichler (2007), and Beith et al. (2007) show that performance-based approaches have had positive impacts on outputs, service quality, and outcomes. Only one controlled study conducted in four districts in Uganda (Lundberg et al. 2007) has produced mixed results; however, that analysis did not focus on effects on HRH specifically. For example, performance-based contracting offers payments to contracted providers for meeting specified criteria, usually related to volumes

39 “De-linking” of HRH from civil service is defined as eliminating the civil servant status of HRH cadres. This can be implemented prospectively, allowing those already recruited into HRH positions with civil servant status to keep that status while also recruiting new HRH without civil service status.

40 Note that implementing these kinds of HRH policies would require substantial strengthening of human resources management (see area six below).

of services, quality, and reaching targeted populations. In these situations, the contractor chooses what mix of inputs to use, including HRH and incentives for employees, to produce health services targeted by performance criteria. This could lead providers to employ more HRH to achieve the criteria or to employ fewer HRH if the contracted providers can find ways to increase productivity (for instance, by improving the supply of drugs, increasing outreach activities, or improving the way patients are received, thereby attracting greater use of services when HRH are underemployed). An example of performance-based contracting in Cambodia is described in the case study on next page.

Task shifting and more broadly ensuring that the “people with the right skills are deployed for the right tasks” is another approach that has been considered as a source for improved efficiency. The Pan American Health Organization (PAHO) has placed a special focus on HRH by making “appropriate skill mix” a component of its primary health care program (PAHO 2007a)⁴¹. The WHO *Task Shifting Global Recommendations and Guidelines* (WHO 2008a) states that task shifting should not be viewed as a “cost-cutting strategy” because, while it could reduce unit costs of service provision, its successful implementation might lead to increases in total services provided and therefore in total spending. There are two cost implications of task shifting: (1) costs associated with implementing task shifting strategies (initial investments and ongoing operating costs) and (2) long-term costs associated with improved health care. The first category of costs includes investments in HRH training, quality assurance, additional physical infrastructure (in some cases), and ongoing expenses for financial and non-financial retention incentives. A team from several institutions⁴² conducted an analysis⁴³ of six countries with the objective of providing a price tag for the task-shifting approach and a costing tool that could help countries in their planning. A high-level model was developed but the costing data are not yet available. The second category of costs is related to the expected increase in long-term demand for services: WHO asserts that if task-shifting efforts are successful and access to services is expanded, then there will be an increase in the total number of health services users, as well as an increase in demand for other health services, increasing total costs. In addition to task-shifting, countries could also undertake “job re-design,” defined as creating jobs that fill roles not previously undertaken by any other professions. The Task Force on Scaling-up Education & Training (TF-SET) found evidence from low- and middle-income countries that re-design of jobs can make a significant contribution to a massive scale up of the workforce, as evidenced by experiences in Brazil, Iran, and Pakistan.

A number of examples of using medical, information, and communication technology equipment have shown promising results in improving overall efficiency. Some innovations in this area include Drishtee, which is starting to offer medical diagnostic services in Internet kiosks in rural areas in India. The kiosks are called Drishtee health franchisees (DHF), and they offer health consultations, several types of health diagnostics, over-the-counter (OTC) medicines, and hygiene products. The kiosks are operated by village entrepreneurs in partnership

41 PAHO identified the main facilitators and barriers to attaining effective primary health care and included a special analysis on human resources for health.

42 Partners In Health, Harvard Medical School; Institute of Tropical Medicine, Belgium; University of Makerere, Uganda; and Université Cheikh Anta Diop, Senegal.

43 The team collected cross-sectional data on existing task-shifting approaches through interviews with different cadres of health workers and service users. Observations of client-provider encounters were carried out using observational checklists. The data collected were on: (1) staff inventory; (2) clinical tasks by cadres; (3) workload; and (4) community services in the vicinity of the facility.

with district-based healthcare facilities. Another innovative initiative is developed by DataDyne. DataDyne designed a tool that allows large amounts of health-related information to be collected and archived in a small hand-held device. The DataDyne tool has been successfully piloted in Burkina Faso and Zambia for collection of monitoring and evaluations data.

CASE STUDIES: CAMBODIA

Improving Service Provision through Performance-based Contracting

The Challenge

When the Vietnamese drove the Khmer Rouge from power in Cambodia in 1979, only 50 doctors remained in the country. Twenty percent of Cambodia's population had perished during the four years of Khmer Rouge rule. Under the subsequent regime, private medical practice was banned, and public facilities were sparse and poorly equipped. Following UN-sponsored elections and the adoption of a market economy in 1993, private practice boomed. But a 1997 survey found that coverage of preventive health care measures was low even by developing-country standards. For example, only a third of children under age two were fully immunized. Only 4 percent of patients in need of curative care used the public system. Many trained public providers had more lucrative private practices on the side. Absenteeism in public facilities was high, and patients were frequently diverted to private practice, where they were required to pay for services received from government health workers operating privately.

The Opportunity

In 1999, Cambodia tried a new approach: it contracted out management of government health services to private nonprofit organizations in certain districts. Government expenditure was increased in these districts to pay for the successful bids. Contractors were responsible for services at district hospitals, subdistrict health centers, and more remote health posts. Performance was measured against eight service delivery indicators, primarily related to maternal and child health. Inadequate performance could lead to sanctions and would reduce the likelihood that the contract would be renewed. The contracting project ran through 2003 and covered a total population of about 1.26 million people.

The Result

Districts chosen for contracting were randomly selected from a larger set of districts, making it possible to evaluate the project rigorously. Survey data illustrated that the contracting project led to large improvements in health care service delivery, especially in HRH performance. For example, staff were 61 percent more likely to be present in a surprise visit to a contracted health center, and these centers were better stocked with supplies and equipment; health centers in contracted districts were 68 percent more likely to have 24-hour service. The improvement in HRH performance was also evidenced by patients making more visits to qualified caregivers, such as doctors and nurses, in public facilities and fewer visits to unqualified drug sellers and traditional healers.

Source: Kremer (2005)

Finally, improving the quality of services and reducing the costs of waste and rework is another cited but understudied area for improving HRH costs. An example of a program that focused on decreasing waste is Mozambique-based organization VillageReach. VillageReach focuses on removing waste in the health system, especially along the supply chain. Based on data collected from each clinic, VillageReach works with the Ministry of Health to procure appropriate amounts of medical supplies as to prevent shortages and overstock waste. The materials are then transported to the Ministry of Health regional warehouse, where necessary storage space and refrigeration can keep the materials secure and in good condition. It currently covers 87 health facilities, serving more than 1.5 million people.

Agenda for additional work

Country level work

- *Examine alternative methods to improve accountability of HRH, then choose and apply the ones that look most promising given the country's situation. These might involve performance-based management and contracting, decentralization, greater citizen oversight of performance, and setting up systems where funding follows patients. Accountability systems also should consider measures for discipline and sanction for poor performance.*
- *Ensure that HRH are provided with adequate support and tools to do their jobs well. This would include providing supportive supervision and ensuring that non-HRH inputs are available, such as drugs and consumable supplies and working equipment.*
- *Engage HRH trade unions and professional organizations (such as doctors, nurses, or midwives associations) to be partners in developing accountability mechanisms, since unilaterally implemented accountability systems are likely to be considered "imposed" and provoke opposition.*
- *Conduct a task-shifting analysis to study whether the skills of HRH are well-matched with the jobs that they are assigned. Where current assignments show over-qualification, shift the tasks (with appropriate re-training where needed) to HRH with only the needed qualifications. This might entail an up-front expenditure for the re-training, but a savings over the longer term in employment costs.*
- *Draw lessons from experiences like VillageReach to find and eliminate waste and inefficiency in the use of HRH in the supply chain for health inputs. This might mean outsourcing some functions, such as transport of inputs or provision of services such as food and laundry to hospitals.*

Global work

- *Collect data and analyze HRH productivity when performance-based approaches are used: The literature on performance-based approaches to improving health outcomes does not focus on what, if anything,*

happens to HRH productivity. However, performance-based approaches seem to be spreading, so their implications for HRH needs are important to know.

- *Conduct analysis and provide a roadmap for how HRH scale-up plans can take into account efforts to increase performance:* In countries where efforts to increase productivity are being taken, the targets for HRH scale-up should take into account the costs of the efforts and the likely implications of the expected productivity gains on the need for HRH—either the requirement for more HRH (in the case that provider organizations might try to hire more HRH to achieve performance targets) or fewer (in the case that provider organizations find ways to make their HRH more productive and, thus, require fewer HRH).
- *Create a global network of national HRH organizations to facilitate exchange among them and improve overall effectiveness:* Efforts should be made to utilize effectively existing information and ensuring good practices are shared among countries and sectors.

AREA SIX:

Costs of strengthening HRH management

6

Background

Key question

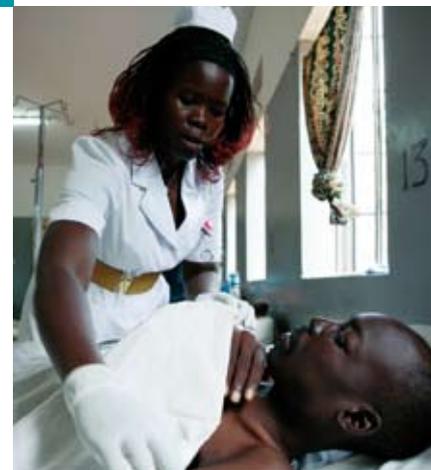
What are the key elements needed to strengthen HRH management and how much do they cost?

Description and definition

The efficiency and effectiveness of HRH can be affected by how well human resources management is conducted. Traditionally, ministries of health have given little attention to and allocated few resources for HRH management. In some countries, HRH are not managed by ministries of health, but rather by overall ministries of civil service. Hence, even the basic HRH management functions of management of workforce numbers, skills, and deployment is done poorly, if at all. Better practices focus on “human resources development” rather than human resources management, revolving around countries’ administrative personnel policies (e.g., job classification systems, compensation and benefits, recruitment, transfers, promotion, discipline or grievance procedures, and personnel files).

The Capacity Project⁴⁴ identifies the following challenges for HRH management by governments in LICs: (1) inaccurate or incomplete data about the existing health workforce; (2) inadequate numbers of qualified health workers; (3) mismatches between needed and available health worker skills; (4) retention problems; (5) slow and ineffective recruitment, hiring, and deployment processes; (6) lack of supportive policies; (7) weak planning and management systems; and (8) poor use of available financial and material resources. A comprehensive and coordinated response to these challenges is vital. Thus, Buchan and Dal Poz in a 2002 WHO report proposed a definition of HRH management that encompasses management of human resources and management by human resources. This definition aligns HRH management with issues such as public versus private provision of services, civil service reform, logistics management, performance management, staff retention, etc. (van Lerberghe et al 2007).

The recent attention given to HRH issues has led *many countries to make plans to develop their HRH management systems, from the basics of workforce numbers, skills, and deployment to the broader HRH development approach.* All items that these plans involve are expected to produce benefits, but there are also costs associated with them.



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44 More information about the Capacity Project can be found at: <http://www.capacityproject.org/>

Work to date

Effective HRH management has been linked to higher HRH performance. There is a “growing body” of evidence suggesting that good human resources management is associated with better HRH performance⁴⁵ (Buchan 2004). WHO has identified some effective approaches for HRH management that include the availability of high-level stewardship, core administration (availability of information systems), institutional environment and relations (working conditions, staff rotation, and turnover), and organizational culture and leadership.

Overall, HRH management costs comprise recurrent and one-time investment expenses. The HRH management cost components are: (1) recurrent salary costs of HRH management and development staff; (2) recurrent cost for in-service management training; (3) recurrent cost of maintaining management information systems (MIS); (4) recurrent costs of recruitment and hiring of HRH and (5) one-time investment in the development of management information systems (MIS) as well as the development of job descriptions, pay scales, manuals, etc. However, no systematic costing has been conducted of proposed human resource management efforts, which are likely to vary by country, given different starting points, situations, and plans. The Capacity Project provides a definition of human resource management and the building blocks of effective human resource management systems (Adano, 2006). PAHO, in its health agenda for the Americas for 2008-2017, has made “strengthening the management and development of health workers” one of its priorities (PAHO 2007b). More specifically, technical partners have assisted in various aspects of HRH management: for example, Partners for Health Reform *plus* developed job descriptions for HRH staff in Jordan and the European Union in Liberia and Sierra Leone⁴⁶.

Several countries have begun to improve their HRH information management systems. Several programs are focusing on helping countries in improving HRH management. The USAID-funded Partners for Health Reform *plus* project worked with Côte d'Ivoire and Zambia to conduct HRH needs assessments to ensure that interventions would be grounded in specific information. With the assistance of the Capacity Project, the Namibia Ministry of Health and Social Services is working on strengthening its electronic human resources information system (HRIS) located in the Office of the Prime Minister. As a next step, it is planned that HRIS will be expanded to other ministries and eventually to districts. Uganda already has benefited from the first set of results from its iHRIS database (see case study on next page).

Furthermore, HRH information management systems and HRH-centered data collection efforts have been effective in gathering information relevant for the management of HRH as well as of the entire health system. For example, a health facility data collection in Yemen resulted in a better understanding of the entire countries' health system (see example on page 50).

45 Buchan defines performance with sector-specific measures of: (i) clinical activity or workload (e.g., staff per occupied bed, or patient acuity measures); (ii) output (e.g., number of patients treated per HRH); or, less frequently, (iii) outcome (e.g., mortality rates or rate of post-surgery complications).

46 Personal communication.

CASE STUDY: UGANDA

Using a Management Information System to Assess and Improve HRH

Uganda lacked reliable data about its health workforce. All data was collected in paper files at the Ministry of Health. Decisions on pre-service and in-service training as well as general HRH management were made based on assumptions. One such assumption was the Nursing Council's estimate of the stock of nurses in the country. The main data source was institutional memory.

With the help of the Capacity Project, the Nursing Council developed a central data information system called iHRIS. iHRIS included local area network (LAN). The LAN was extended to the Ministry of Health, the Ministry of Education and the Health, Medical, Dental and Pharmacy Council to allow these entities to input data into a common repository. The Capacity Project developed iHRIS hand in hand with local decision makers and provided data collection and analysis training to ensure the database is sustainable and usable.

Analysis of the data indicated that the Nursing Council had overestimated the available stock of nurses by over 20 percent. This information provided a valuable input into the national plans.

Source: McQuide (2008)

CASE STUDY: YEMEN

HRH Data Helps Strengthen Yemen's Health System

The Challenge

In the early 2000s, Yemen lacked uniform statistical registers and data collection systems. Data were largely unavailable; the few data that existed were used for reporting purposes. This weak and unreliable health information system (HIS) impeded policymakers' ability to make fact-based decisions about health care services. Most in-country stakeholders recognized a need to develop a HIS that facilitated decision making and contributed to the strengthening of the health system. However, the country health services were provided vertically and there were no incentives for vertical program providers to maintain a sector-wide database.

The Solution

The USAID-funded Health Systems 20/20 project launched a pilot study aimed at collecting accurate and usable data to support evidence-based decision making and resource allocation at the local level. The pilot involved a comprehensive survey of all public and private health facilities in five governorates. It also mapped all health facilities using geographic information system (GIS) software. Then, together with the Central Statistical Organization, the pilot implementers standardized a coding list for all geographic units (settlements, districts, governorates) and linked all population data with the GIS geographic and qualitative survey data.

The Results

As a result of the pilot, the GIS geo-mapping and survey data provided visual data on the concentration of health facilities and HRH. In addition, with a click, a report could be generated on the distance of each geographical unit to the closest health facility, the density of HRH per region per health facility, the utilization of health facilities, etc. The data from the five governorates allowed local policymakers to make informed decisions about HRH employment and pre-service training. The success of the project encouraged the Ministry of Public Health to scale it up to national level. With funding from the World Bank, a health facilities survey and the GIS mapping was conducted for all governorates. The data are being used by the government and other HRH organizations. For example, district health officials use the GIS atlases, maps, viewers, and Health Sector Analyzers (an analysis capability of GIS) to justify and relocate HRH. Similarly, the Midwives Association uses the GIS atlases to prioritize deployment of newly trained nurses.

Source: Interview with Susan Coleman, Chief of Party. Yemen PHR

Agenda for additional work

Country level work

- *Budget for and then upgrade the staffing of HRH departments in Ministries of Health and build or develop HRH information management systems.*
- *Obtain guidance about the essential functions of a strong HRH management system and implement them. The USAID-funded Capacity Project is one good source for this kind of guidance, <http://www.capacityproject.org/>; another is the University of Western Cape Free Courseware Project, <http://freecourseware.uwc.ac.za/freecourseware/school-of-public-health/managing-human-resources-for-health/managing-human-resources-for-health/unit-1-session-1-key-components-of-human-resources>.*
- *Involve HRH managers in strategic decision-making processes of Ministries of Health, including analysis of the HRH implications of all strategic choices. Examples include scale-up of (1) anti-retroviral treatment, likely to draw on scarce skilled HRH, or (2) malaria prevention programs, such as ITN (Insecticide Treatment Nets) distribution and IRS (Indoor Residual Spraying), that might reduce demand for curative care.*
- *Work with schools of business administration and private providers of health services to develop modules on HRH management to add to curricula for HR management, so that both government and private health service providers can employ graduates with knowledge of and skills for HRH management.*

Global work

- *Develop data-focused roadmaps to guide Ministries of Health to create HRH scale-up plans that fit into overall health system strengthening strategies. While initiatives that focus on a specific issue or disease draw attention to that focus, HRH scale-up alone will achieve less than it would were it done in the context of overall health system strengthening. Thus, HRH scale-up plans should ensure that the desired growth in HRH corresponds to the development of the health sector as a whole and does not move forward at a rate that is unsustainable over the long term.*

AREA SEVEN:

Effects on costs of engaging both the private and the public sector in HRH scale-up

7

Background

Key question

How do HRH in private⁴⁷ employment affect the availability and use of health services? How can health financing policy affect the numbers, distribution, and performance of privately employed HRH to contribute to national goals and objectives?

Description and definition

In much of the developing world, the private sector provides the most important sources of medicine and medical care, and yet ministry of health planners frequently ignore or give little attention to privately provided services. Private sector actors can be categorized as: for-profit companies, nonprofit organizations, social enterprises, insurers, providers, and drug, equipment and other health service input suppliers. These private sector actors account for as much as 50 percent of health care provision in sub-Saharan Africa (Conway et al. 2007). Estimating the exact share of HRH working in the private sector is difficult due to “moonlighting.”⁴⁸ There are no global estimates and the numbers vary by country, with as little as 20 percent and as much as 70 percent⁴⁹ of public providers practicing in parallel privately. While the practice is widespread, the specific distribution, productivity, and numbers of HRH participating in this practice are rarely known. Private commercial providers of health services usually are concentrated in urban areas, and their HRH are similarly concentrated. In many countries, nonprofit private providers seek to serve the underserved, so their HRH likely are found mainly in rural areas and urban slums.

In addition to working in parallel to government in offering health services, private providers are competitors to government for the employment of HRH. Private employers have more flexibility than government in terms of wages, working conditions, and benefits to offer to HRH. Government HRH employment often has advantages over private employment in the form of greater job security, the offer of pension benefits, and, sometimes, access to more and better equipment. “Moonlighters” try to obtain the advantages of working both for government and private employers. Some of the economic attrition of government HRH is to domestic private employment. Government retention strategies could benefit from examining what is offered by private employers both to stem attrition to those employers and to learn how private employers seek to reduce their attrition losses to emigration. Finally, in many countries governments subsidize (often heavily) pre-service training for HRH. Some graduates take jobs as purely private practitioners and do not offer government service. Thus, planning for pre-service training must take into account that some graduates will take employment in both sectors.



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47 Private sector here is defined as all “nongovernmental” entities, including NGOs, faith-based organization, social enterprises, and private corporations.

48 Moonlighting refers to the practice of public sector HRH working in the private sector in parallel with their public sector appointments.

49 These estimates have different approaches to estimating the number of HRH in the private sector: in some cases, the HRH cited work only in the private sector while in other cases, they work in both sectors.

Work to date

There are few data, of limited reliability, on the numbers and costs of privately employed HRH. Few governments at any level have reliable data on the numbers of HRH employed in the private sector, let alone how much it costs to employ them. Most publicly available HRH data (for example, those shown on the WHO website) are reported by governments by citing the primary employer of health cadres rather than by the cadres' sources of income. Many HRH whose primary employer is government supplement their public sector service with private practice, so they are not counted as privately employed. In this way, the numbers of HRH employed in the private sector is underestimated (see more below).

Many private sector practitioners work without registration with or the authorization of governments. For example, a report on Benin by the USAID-funded Health Systems 20/20 (2008) project illustrates that although the country has a procedure for authorizing private medical practice, many HRH practice in the private sector without Ministry of Health authorization or knowledge. Benin has: (1) an estimated 1,500 physicians of whom 571 are registered members of the Board of Physicians; (2) 230 pharmacists, all of whom are registered members of the Board of Pharmacists; and (3) more than 3,000 midwives, of whom only 580 are registered with the Board of Midwives. Thus, Benin's Ministry of Health, like many others, misses knowing about the majority of HRH, including where they are located, how much they are paid, and whom they serve. Additional data about the factors influencing the employment, deployment, and compensation of privately employed HRH are well outside the knowledge base of ministries of health. A WHO analysis of HRH migration in six countries finds that HRH frequently leave the public sector to obtain higher salaries and better working conditions in the private sector (Awases et al. 2004).

Going forward, when costing future HRH scale-up, governments would be wise to consider those in private employment. Governments often focus on "HRH scale-up" only in terms of increasing the number of publicly employed HRH, giving little attention to the usually equally-important numbers in private employment. A better understanding of HRH employed in the private sector (including government HRH who are moonlighting) would provide ministries of health with a more comprehensive picture of the HRH situation and access to care. Such an improved understanding of the whole HRH picture also would begin to provide ministries of health with the identification of levers to use to influence and harness privately employed HRH. As mentioned above, government plans to scale-up HRH also must account for new HRH graduates who will go into private employment (and migrate to other countries) and not assume that all will enter government service.

Agenda for additional work

Country level work

- *Monitor employment data* concerning the private sector, including the numbers of HRH employed, geographic distribution, productivity, compensation, services offered, and populations served. These kinds of data would provide a comprehensive picture of the overall HRH situation, allow the monitoring of trends, and provide useful information to devise policy initiatives to influence the direction of private HRH activities.
- *Use data on private employment of HRH* in making decisions concerning scale-up of pre-service training (see Area Two above).
- *Study and learn from private providers* concerning what they do to: (1) retain HRH in the face of incentives to emigrate, and (2) successfully post HRH to hardship geographic areas.
- Specifically, *consider assisting in or stimulating the development of private initiatives* in the following areas:
 - Pre-service training of HRH (e.g., creation or expansion of private medical, nursing, midwife, and other schools).
 - Private payment of tuition fees for pre-service training (complemented by government-sponsored student loan programs to ensure access for all qualified students).
 - Provision of health services under performance-based contract, where the private contractor hires, manages, and ensures the working conditions needed for appropriate HRH.

Global work

- *Compile a database of experiences with engaging the private sector in addressing HRH issues.* This database would allow country decision-makers to learn from and be stimulated by the experiences of others in this relatively underdeveloped area.

Conclusions

Country-level analysis is essential in producing accurate estimates for financing of HRH scale-up. While some work has been done on the costs of scaling up HRH employment and pre-service training at an aggregated level, much more should be done at the individual country level and then aggregated from the bottom up. This country-level work would allow the specific conditions and possibilities of each country to be brought together. Aggregate analysis thus far illustrates that, concerning sustainable financing of HRH scale-up, there are *two types of LICs*. The first category comprises those countries that would need external help only to get them to the scaled up level of HRH by the middle or end of the next decade, at which point they would be able to sustain the improved situation using their own resources. This category will include more countries if more of them benefit from a set of favorable conditions identified as critical in the literature (see below). The second category of countries (probably the majority), even in similarly favorable conditions, are likely to need external assistance both to achieve and to sustain HRH employment over the same time period. It will be essential to determine which countries fall into each category, what each country's specific possibilities are for mobilizing domestic resources, and what each country's needs are for external support.

In addition, global knowledge management of country-level work would greatly benefit financing of HRH scale-up. As a provider of global public goods, Alliance could take the lead in mobilizing resources and coordinating partners to address the global HRH financing work. Alliance could keep a global inventory of empirical and field work on HRH-financing.

Aggregate analysis highlights five important conditions for sustainable financing of scaled-up HRH. The data to date suggest that, using their own resources, some LICs would be able to sustainably finance scaled-up HRH by 2015 or 2020, if all of the following materialize:

- Favorable economic growth
- Willingness of government to increase the health share of overall spending
- Improved government ability to capture a share of national income
- Political commitment and will to allow for adjustments in the health sector allocations to provide a relatively greater share of spending to HRH
- Institutional capabilities to deliver financial resources where and when intended
- Careful analysis of the epidemiological situation to allow task shifting to lower-skilled and lower-cost HRH



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Several approaches for financing of HRH employment emerge as good practices. All LICs, regardless of the level and scale of financial assistance they need, could benefit from the following interventions to maximize HRH scale-up and minimize its costs:

- Improve the management of HRH (to increase retention and productivity)
- Find ways to improve productivity of HRH (to lower the need for additional HRH)
- Increase remuneration and improve working conditions to retain more HRH
- Collaborate with, learn from, and leverage the private sector

While there is some experience with the interventions above, more evidence of the methods' effectiveness would be useful. However, countries should not hesitate to begin to apply the approaches described above, and external partners should offer financing and technical help, especially to ensure that efforts are monitored and evaluated so that more evidence can be generated (again, see *What Countries Can Do Now* for specific steps that can be taken right away). In addition, all countries could address the issue of unequal access to existing HRH for the disadvantaged by using monetary and non-monetary incentives for HRH deployment to sites that are relatively unattractive, as well as other strategies, such as targeted recruitment. Again, the evidence of how to do so with greatest cost-effectiveness is incomplete, but there are enough promising approaches to show countries the directions that they should try to take.

Financing of pre-service training will be a major challenge, and the need for inter-ministerial collaboration a related one. The cost of pre-service training to achieve HRH scale-up is likely to be daunting and beyond the ability of most LICs. Thus, substantial external assistance will be needed. The scale-up of pre-service training also will face the institutional challenge of collaboration between the Ministries of Health and Education. In most countries, the history of such collaboration is thin and the record of cross-sectoral and cross-ministerial collaboration is one of difficulty. Evidence indicates that the most fruitful collaboration might involve a three-way interaction among the Ministry of Finance, Health (responsible for employment) and Education (responsible for pre-service training). This, too, looks to be a challenge that should be addressed as soon as possible.

Finally, financing HRH scale-up efforts alone will not be effective unless it is done within a sector development focus. The financing of HRH scale-up should be pursued within the broader context of health sector development needs. It would be a mistake to single-mindedly pursue a HRH scale-up target without consideration of the costs of the complements needed, including facilities, equipment, drugs, supplies, transport, etc. Thus, mobilization of resources for HRH scale-up should be done in tandem with mobilization of resources for the scale-up of the entire health system.

ANNEX 1: Cost estimate details

The Joint Learning Initiative (JLI) (2004) estimates a 4 million person shortage of human resources for health (HRH). The estimates are based on a global threshold of 2.5 health care workers (HCWs), defined narrowly as doctors, nurses and midwives, per 1,000. The World Health Report (WHR) (World Health Organization [WHO] 2006) estimates a shortage of 2.4 million HCWs in 57 countries. This estimate increases to 4.3 million if support staff are also included. The calculation is based on the slightly different assumption that 2.28 HCWs/1,000 will be necessary to achieve the Millennium Development Goals.

Scheffler et al. (2007) find that by 2015, global supply and demand for physicians will be in equilibrium but there will be severe regional disparities. Africa will face a needs-based shortage of around 167,000 physicians. This approach differs from those of JLI and the WHR by (1) only considering physicians and (2) estimating demand based both on need (like the WHR and JLI) and on economic demand, i.e., the number of physicians that a country has historically employed for a given level of economic development.

The regional disparity that all estimates point to reveals that the health community has been focused on aggregate, rather than country-based estimates. A few country-based studies were conducted, for Tanzania (Kurowski et al. 2007), Ethiopia (the World Bank), Malawi (U.K. Department for International Development), Zambia (United States Agency for International Development).

In the WHR, WHO provides estimates of the fixed and recurrent costs for salaries and pre-service training required to fill the gap of 2.4 million HCWs discussed above. It estimates the cost of filling this gap, over both 10- and 20-year time horizons. Over 10 years, WHO estimates that training will cost \$77.5 billion in total, or \$1.4 billion/country, or \$136 million/year for the average country. Recurrent salary costs will amount to \$177.3 billion over 10 years, or \$17.7 billion/year, or \$311 million/country/year, although this is probably a low estimate since it assumes constant wage levels and no deployment, retention, performance and other incentives. Over 20 years, annual training would cost \$88 million/country, and annual salary costs would reach \$400 million/country. A separate breakdown of cost figures is provided for Africa but not for other regions.



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ANNEX 2: Evidence on HRH as components of health systems

HRH are an important component of the health systems. USAID's Health System Assessment manual (Islam 2007) includes HRH as one of six components to be assessed when examining a health system overall. The application of the HSA Assessment in Angola (Connor et al. 2005) and Benin (Adeya et al. 2007) resulted in listing elements of HRH management, pre-service training, and equity of deployment among priority areas for action in overall system strengthening efforts. The Angola report also notes that HRH effectiveness was compromised by inadequate availability of drugs, supplies, and basic equipment.

There have been some proposed "good practices" for spending on HRH. The 2006 WHR suggests that 25 percent of total health development assistance be allocated for HRH. The draft report of the Global Health Workforce Alliance Scaling-up Education and Training Task Force recommends that funds for health education should be earmarked from current vertical programs to support at least 10 percent of pre-service training budgets. Specific approaches to ensure that HRH spending is integrated into other health system development efforts or disease-specific programs differ by country and by program as described below.

Vertical programs have been perceived as a drain on HRH working on programs that are not donor-funded. The global health initiatives that focus on specific diseases have caused concern that they are taking HRH away from other health needs. For example, the USAID-funded Health Systems 20/20 project states that studies conducted in several countries found that there are "some signs that health workers are being diverted from other health services to HIV/AIDS, from [the] public to [the] private sector, [and] from rural to urban areas" as a result of GF-supported activities. On the other hand, the same studies reviewed found "positive effects on health worker motivation... as work environments improve" as a result of GF-supported activities (Health Systems 20/20 2008). These questions are especially important in the context of the large increases in donor funding that have occurred since the founding of the GF and President's Emergency Plan for AIDS Relief (PEPFAR) in 2002–03. These two large "vertical initiatives" have rarely made investments in pre-service training of HRH. PEPFAR supports some in-service training (for example, in 2008 it spent \$2.7 million on "training and re-training encounters") that is focused on HIV/AIDS activities implemented by partner NGOs. PEPFAR has deliberately limited funding for pre-service training, although such funding increased from \$1 million to \$3 million per country for fiscal year 2008. Similarly, the GF provides no specific guidance concerning the use of its resources for HRH. Official statements and documents, including the guidelines for round nine funding, note that GF money can be used for HRH in the context of the health system affecting HIV/AIDS, tuberculosis, and malaria, rather than for broader health systems strengthening.

Nevertheless, there is a trend toward sectoral and overall budgetary support. A number of donors have begun to provide resources aimed at the achievement of broader health sector goals and objectives, and even overall budgetary support without a sector label, in contrast to specific health projects. In these situations, the external resources are to be used along with national resources to improve the recipient government's health sector or address overall development goals and objectives. The latter are to be set in collaboration and consultation with the supporting donors. The sector and overall budgetary support approaches should put HRH scale-up in the broader picture of health sector needs. The group of

bilateral donors that recently joined together to form the International Health Partnership⁵⁰ that emphasizes budget support and sector-wide approaches (or SWAps), includes a goal of “more and better investment in underlying systems...including human resources for health.” The 2005 report, *Investing in Development: A Practical Plan to Achieve the Millennium Development Goals* (UN Millennium Project 2005), points to the need for integrated disease services and places special attention on the functioning of the health system as a whole to ensure universal access to essential services. Similarly, in the Brookings Institution paper on economic activity, *Ending the African Poverty Trap*, Sachs, McArthur, et al. (2004) present packages of services as a step toward a more integrated health system approach.

50 <http://www.dfid.gov.uk/news/files/ihp/default.asp>

ANNEX 3: What global actors can do: four areas for further work to scale up and improve the health workforce

1. Policy Support / Technical Assistance (TA) for Policy Development

TA and policy support for development partners:

- *Assist donors and global health initiatives to clarify their positions on supporting HRH employment costs:* To achieve the MDGs or target levels of HRH per capita, some LICs will need external support to be able to scale up HRH. Donors and global health initiatives should be clear about their policies in this regard. It seems necessary to offer long-term (10 or more years) recurrent support for HRH employment to very-low-income countries with poor growth prospects. Donors also might wish to provide medium-term (5-10 years) external recurrent support for HRH employment to other countries that have high enough incomes and growth prospects to be able to take on the responsibility for recurrent payment of employment costs after some time. This external assistance would help the latter group of countries to do the initial scaling-up that they then would be able to sustain.
- *Monitor IMF policies on fiscal space and economic growth and continue to seek better alternatives:* In response to criticisms and analyses, the IMF says that it has changed its approach to wage ceilings and other fiscal policy constraints to (1) make them less restrictive and (2) allow countries to spend external resources as intended as long as the spending is sustainable. The advocacy community should continue to monitor IMF programs to verify that the change in approach is employed in practice. Since economic growth is the most important factor in the fiscal space available to pay HRH employment, it is important to do as much as possible to help countries maximize growth. There is continued value for improving external technical support for macroeconomic policy in the advocacy community's debate and analysis of alternatives concerning: (i) approaches to promoting growth and (ii) how best to use external resources. In addition, it would be beneficial to open debate and analysis if the IMF would make public information on alternative policies that it is considering.
- *Encourage the IMF to explore multiple alternative macroeconomic policy options and ensure that its transparency policies are in compliance with the nine principles of the Global Transparency Initiative (GTI).*

TA for country policy-makers:

- *Develop data-focused roadmaps to guide ministries of health to create HRH scale-up plans that fit into overall health system strengthening strategies.* While initiatives that focus on a specific issue or disease draw attention to that focus, HRH scale-up alone will achieve less than it would were it done in the context of overall health system strengthening. Thus, HRH scale-up plans should be done so that the desired growth in HRH corresponds to the development of the health sector as a whole and does not move forward at a rate that is unsustainable over the long term.
- *Conduct analysis and provide a roadmap on how HRH scale-up plans can take into account efforts to increase performance:* In countries where efforts to increase productivity are being taken, the targets for HRH scale-up should take into account the costs of the efforts and the likely implications of the expected

productivity gains on the need for HRH—either the requirement for more HRH (in the case that provider organizations might try to hire more HRH to achieve performance targets) or for fewer (in the case that provider organizations find ways to make their HRH more productive and, thus, require fewer HRH).

2. Data Aggregation

- *Build on the work of Preker et al.:* Preker et al. make pre-service training estimates that are a useful starting point to build on:
 - **Conduct analyses for other regions:** Countries in regions other than Africa have similar critical HRH scale-up needs, and it would be desirable to have an estimate of their economic prospects for achieving the desired scale-up.
 - **Conduct country-specific analyses:** Individual country situations are hidden in the aggregates and can vary widely given different HRH starting points, prospects for economic growth, ability and commitment to increasing the share of government spending to health, priority given to HRH relative to other health spending, prospects for offering health insurance coverage, prospects for mobilizing external assistance, etc. Country policy-makers and their external partners need to know the country-specific situation to be able to make the best choices for each situation.
- *Conduct macro analysis on HRH expenditures:* Capture the actual expenditure on HRH by categories of HRH, sector (public, private) of employment, and sources of revenues.
- *Conduct analysis and aggregation of the costs associated with self-sufficiency of the North:* Brain drain is ubiquitous and hemorrhagic in effect (once it begins it tends to continue and, often, increase). Greater degree of self-sufficiency in the North would seem to be an important part of any retention strategy. As long as economic disparities of the current magnitude exist between South and North and there are HRH shortages in the North, many Southern HRH will migrate. Policies in the North that promote greater self-sufficiency will lower the pressure on LICs (see the report of the Alliance Migration Task Force for more on this topic).

3. Research and documentation

Extend research already done:

- *Build on the work of Preker et al. to allow more items to vary in alternative scenarios:* Some of the items that are held constant in Preker's projections could be allowed to vary, such as the share of health spending devoted to HRH employment and the share of household income spent on health as incomes grow.

Analysis and documentation of effectiveness of current approaches:

- *Learn more about existing private initiatives in pre-service training:* Conduct evaluations or assessments to test the sustainability of approaches such as that of GK in Bangladesh.
- *Document the experience from Ethiopia and other country-based programs in a systematic way:* It would be useful to quantify the savings achieved by Ethiopia if its "task shifting" to CHWs is successful. Such quantification would capture the effectiveness of the CHWs in covering the targeted basic health needs of the rural populations and estimating the savings in employment and pre-service training costs.

- *Conduct global analysis on the wage and non-wage incentives, as well as HRH overall buying power versus the buying power of other professions:* It seems that there would be a relationship between the propensity to emigrate and: (1) the size of wage gaps and (2) differences in non-wage conditions of work. However, the literature offers no clear and quantified behavioral response (e.g., for “x” percent closing of the physician wage gap between the source and recipient country, emigration would be reduced by “y” percent) that could be used for setting wage and non-wage policy to increase retention. The relative merits and optimal combinations of wage and non-wage incentives would benefit from more evidence. More results from Malawi (when available) should bear close attention.
- *Collect data and analyze HRH productivity when performance-based approaches are used:* The literature on performance-based approaches to improving the results achieved by spending on health services does not focus much on what, if anything, happens to HRH productivity. However, performance-based approaches seem to be spreading, so their implications for HRH needs are be important to know.

Collect evidence as new approaches are tried:

- *Collect more country evidence about effective approaches for equitable deployment, including variations by gender of HRH, to minimize attrition of HRH assigned to undesirable areas:* Combinations of financial incentives, HRH needs, local recruiting, offering non-financial incentives or amenities, and efforts that take into account sex-specific concerns of HRH seem to be workable ways to make HRH deployment more equitable. These combinations should be further tested for different categories of HRH and their costs estimated, so that informed choices can be made about what to do and how much it will cost.
 - *Study the experience of successful programs, both in developing and developed countries, and assess their applicability to other contexts:* One such example could be analysis of the United States National Health Service Corps (NHSC). This program, while costly by Southern standards, is an example of investments in education in return for clinical service by the trained professional. In the NHSC model, there are subsidies related to the practice site as well as for additional training for Corps members, so that NHSC clinicians can work and live in areas in which the market would not normally support them. The principles of the program are important ones that might be adapted to many different settings.

4. Data Compilation / Inventory Creation

- *Create a global inventory of retention strategies and conduct systematic analysis of their costs and benefits as well as the economic tradeoffs that each of these strategies requires:* Many variations of bonding and other retention strategies have been tested, but there has been limited work in systematically cataloguing them and comparing their relative effectiveness.
- *Compile a database of experiences with engaging the private sector in addressing HRH issues.* This database would allow country decision-makers to learn from and be stimulated by the experiences of others in this relatively underdeveloped area.
- *Create a global network of national HRH organizations to facilitate exchange among them and improve overall effectiveness:* Efforts should be made to utilize effectively existing information and ensure good practices are shared among countries and sectors.

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The Global Health Workforce Alliance
World Health Organization
Avenue Appia 20
1121 Geneva 27
Switzerland
Tel: + 41.22.791.1046
Fax: + 41.22.791.4841
E-mail: ghwa@who.int
www.who.int/workforcealliance

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