EVERY WOMAN

EVERY CHILD

Access for all to skilled, motivated, and supported health workers

4

Global Strategy for Women's and Children's Health

EVERY WOMAN
EVERY CHILD

BACKGROUND PAPER FOR THE GLOBAL STRATEGY FOR WOMEN'S AND CHILDREN'S HEALTH:

ACCESS FOR ALL TO SKILLED, MOTIVATED, AND SUPPORTED HEALTH WORKERS

SEPTEMBER 8, 2010

EXECUTIVE SUMMARY

THE PROBLEM

Human resources are the backbone of any health system, yet often they are also its weakest link. Unless crucial bottlenecks in the health workforce are removed, it will not be possible to achieve Millennium Development Goals (MDGs) 4, 5 and 6 and achieve the objective of the Global Strategy for Women's and Children's Health. Three of the main bottlenecks are:

Of the 68 countries with the highest burden of maternal and child deaths, 53 do not meet the critical threshold of 23 physicians, nurses and midwives per 10,000 people considered generally necessary to deliver essential health services. Sub-Saharan Africa concentrates 33% of the global burden of maternal, newborn and child disease, but has only 2.8% of the health workforce.

- Health worker shortages are compounded in many countries by uneven internal distribution of highly skilled personnel – characterized by concentrations in urban areas – and by the impact of international migration.
- Health workers in many countries perform poorly and have poor morale, resulting in high workforce attrition. This is largely due to factors such as: limited training capacity, weak management systems, limited use of evidence for decision-making, poor working conditions, and inadequate financial and non-financial incentives

WHAT NEEDS TO CHANGE, AND WHAT IT WILL TAKE

There is a global consensus on priority strategies to address the crisis in the health workforce, which is enshrined in the Kampala Declaration and Agenda for Global Action. Governments and other stakeholders should commit to this, and hold themselves and one another accountable for fully implementing the strategies needed to bolster human resources for health (HRH). This is a requirement for realizing the Global Strategy for Women's and Children's Health.

The Agenda for Global Action envisages six interconnected strategies:

I. Building coherent national and local leadership.

- All countries should have national health workforce plans that are costed, comprehensive and gender-balanced, and based on need, evidence and human rights. They should project an appropriate size and skills mix for the workforce, and include realistic and clearly prioritized implementation strategies.
- The plans should be developed in consultation with, and owned by, the main sectors involved (health, education, finance, civil service), and other stakeholders (professional associations, training institutions, civil society, private sector).
- Technical assistance should be made available, where appropriate and requested by countries, to support their development, implementation and monitoring, and to build local HRH planning and management capacity.
- Countries should develop a health workforce that will respect and promote human rights and universal access. This should include: comprehensively addressing stigma and discrimination in the health sector, incorporating human rights training into pre-service and in-service curricula, and endeavoring to enable the workforce to reflect the linguistic and other diversities of the population.

II. Ensuring capacity for an informed response based on evidence and joint learning.

- Countries, development partners and academia should increase investment in health workforce information systems, operational research, and analytical capacity to strengthen stewardship of the health workforce.

III. Scaling up education and training.

- Countries and development partners should invest in increased education capacity and support to training institutions. This is necessary to train and deploy effectively between 2.6 and 3.5 million additional health workers in 49 low-income countries to address the shortfall by 2015. Beyond quantitative targets, it is also essential to improve distribution, by deploying the majority of new health workers to under-served areas.
- Equally important is enhancing the quality of the health workforce. This will ensure that health personnel possess the competencies required to fulfill their roles and are capable of delivering integrated services for women and children across the health-care continuum. In this respect, competency-based curricula, patient-centered education, accreditation and regulation of training institutions and health providers can play an important role.

IV. Retaining a health workforce that is effective, responsive and equitably distributed.

- Governments and other employers should ensure adequate financial and non-financial incentives for their health workers. They should also provide supportive management and supervision, opportunities for professional development and career progression, and a safe, secure and enabling working environment (including access to referral services, information and necessary supplies) for effective retention and equitable distribution of health personnel.
- Countries should set ambitious targets to correct uneven distribution by deploying new workers to underserved areas, adopting relevant context-specific policies, identifying indicators and putting in place the necessary monitoring mechanisms.
- Community-based and mid-level health workers should be recognized, managed, remunerated and supported as integral elements of the health system.

V. Managing the pressures of the international health workforce market and its impact on migration.

- All countries should put in place the regulatory, governance and information mechanisms required to ensure the successful implementation and monitoring of the global code of practice on international recruitment of health workers, recently adopted by all member states of the World Health Organization.

VI. Securing additional and more productive investment in the health workforce.

- Countries should increase their allocation of domestic resources to health in general, and to HRH in particular. Where macro-economic policies hinder governments from making long-term investments in the health workforce, they should relax such policies, with the support of international financial institutions.
- An estimated US$40 billion additional investment in the health workforce is required through 2015 to achieve the health MDGs in 49 low-income countries (inclusive of both training and employment). This is equivalent to 24% of the total health investment needed.
- External aid should take the form of long-term predictable support, aligned to country needs and national plans. It should cover both investment and recurrent costs for non-disease specific human resources for health.

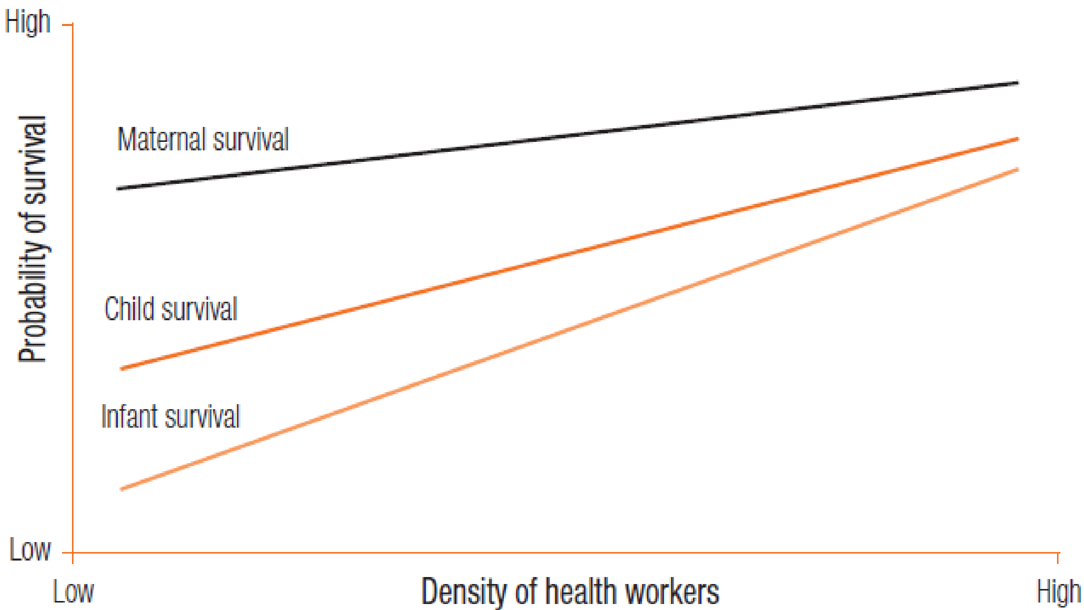
INTRODUCTION

Despite encouraging signs of progress, the world is off track to achieve the health-related targets of the Millennium Development Goals (MDGs). These entail reducing child mortality by two-thirds and maternal mortality by three-quarters by 2015 (compared to 1990 baseline levels) and containing the spread of HIV and other major diseases.

According to academic studies, mortality among the under-fives is declining, but not fast enough in most of the countries with the highest burden of child deaths.[1] Maternal mortality trends have only very recently started to improve, but progress is uneven, with only 23 countries on track to achieve a 75% reduction in the maternal mortality ratio.[2]

The correlation between availability of health workers, coverage of health services and health outcomes is well established.[3]

Figure 1: HRH density and health outcomes
(Source: WHO, World Health Report 2006)



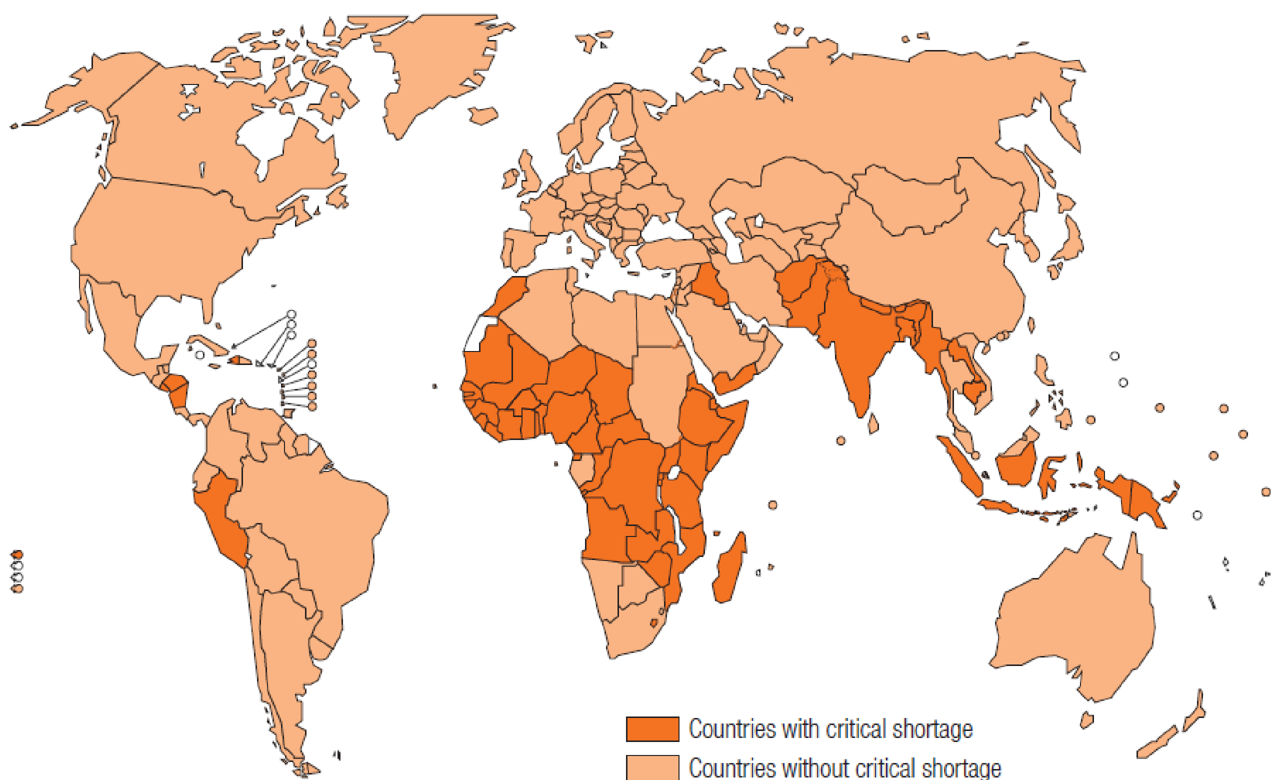
Despite this clear evidence, the health workforce in many countries remains the greatest barrier to the effective and equitable delivery of quality health services. Human resources are the backbone of health systems, but if crucial HRH bottlenecks are not addressed it will not be possible to achieve the health MDGs. Only 15 out of the 68 countries that account for over 90% of the burden of maternal and child deaths meet the critical threshold of 23

physicians, nurses and midwives per 10 000 people generally considered necessary to deliver essential health services.[4]

The global shortage, estimated by the World Health Organization (WHO) at 4.3 million health workers, is compounded by uneven geographical distribution within countries. A concentration of highly skilled personnel in urban areas is exacerbated by international migration from low- and middle-income countries to countries that offer better working conditions and remuneration.

The lack of skilled workers is particularly acute in sub-Saharan Africa, which bears 33% of the global burden of maternal, newborn and child disease[5] and 67% of people who are HIV positive,[6] but has only 2.8% of the health workforce. Another region characterized by severe shortages is South Asia. Unsurprisingly, there is a close overlap between the countries affected by health-worker shortages and those accounting for the bulk of maternal, newborn and child deaths.

Figure 2: Countries affected by severe shortage of health workers
(Source: WHO, World Health Report 2006)



Health workers in many countries perform poorly and have poor morale, resulting in high workforce attrition. This is largely due to factors such as: limited training capacity, weak management systems, limited use of evidence for decision-making, poor working conditions, and inadequate financial and non-financial incentives

Financial resources are understandably scarce in many low- and middle-income countries, and processes for allocating and managing health wage bills are often inefficient. For example, many countries do not fully utilize their available resources because of capacity constraints within the government, and complicated recruitment processes that involve several governmental departments and levels of administration. Also the mix of skills and staff is often sub-optimal, leading to oversupply in certain cadres and under-supply in others.[7]

External assistance has often taken the form of disease-specific funding programs. This has sometimes led to the over-concentration of human and financial resources in specific initiatives, and to the prioritization of in-service training that is short-term and disease-specific. To some extent it may also limit long-term investment in the production and deployment of new health workers.[8]

Finally, effective stewardship of HRH is hindered by an inadequate evidence and information base.[9]

Partnerships for health workforce solutions: the Agenda for Global Action framework

The link between adequate availability of health workers and the health of populations is firmly established. In summary, the higher the density and the more equitable the distribution of health workers, the higher the coverage of life-saving interventions such as skilled birth attendance and immunization, and the better the health outcomes.[10]

Some of the most recent attempts to conceptualize health systems, and how their respective elements are inter-connected, have recognized the centrality of the "human factor" in the organization and delivery of health-care services.[11]

Figure 3: The central role of the human factor in health systems
(Source: Alliance for Health Policy and Systems Resarch, WHO, 2009)

More broadly, there has been a growing awareness of the gravity of the crisis in the health workforce, its global nature and the interconnectedness of its elements. The determination of the international community to address this challenge has grown in parallel with an improved understanding of the problem.

A key milestone in identifying and promoting sustainable solutions to the crisis in the health workforce was the adoption by the international community of an Agenda for Global Action (Box 1). This serves as the global reference point for priority HRH strategies.[12]

Box 1: Agenda for Global Action
(Source: Global Health Workforce Alliance, 2008)

The Agenda for Global Action

Adopted in Kampala, Uganda, in 2008, the Agenda envisages global, regional, national and local partnerships that are forged among different sectors, constituencies and stakeholders. These partnerships would aim to implement six interconnected strategies to strengthen health systems through targeted action on human resources for health.

I. **Leadership**: building coherent national and global leadership for health workforce solutions

II. **Evidence and joint learning:** ensuring capacity for an informed response, based on evidence and joint learning

III. **Education**: scaling up the education and training of health workers

IV. **Retention, performance, distribution**: retaining an effective, responsive and equitably distributed health workforce

V. **Migration**: managing the pressures of the international health workforce market and its impact on migration

VI. **Investment**: securing additional and more productive investment in the health workforce

The investments in human resources required to achieve the Global Strategy for Women's and Children's health are presented in this background paper, and follow the structure of the Agenda for Global Action. Governments, development partners, professional associations, civil society, the private sector, academia, education and training institutions and other stakeholders should hold themselves and one another accountable for fully implementing the strategies envisaged in the Agenda. This is a requirement for realizing the Global Strategy for Women's and Children's Health.

1. Leadership

As a key step towards coherent leadership of their human resources for health, all countries should have the capacity to conduct relevant situation analyses, explore policy options, and plan, oversee, monitor and evaluate their health workforce strategies.

Effective leadership for better health outcomes implies putting in place the governance structures, policies and mechanisms required for strong management of human resources systems. They should also be integrated coherently into the wider health-system context.[13]

A key element characterizing effective stewardship of the HRH domain is the existence of national health workforce plans. These should be costed, comprehensive and gender-balanced, and based on need, evidence, and human rights. They should project an appropriate size and skills mix for the workforce, and include realistic and clearly prioritized implementation strategies, with measures to ensure equitable coverage, an appropriate skills mix, and retention policies.

Such plans should be developed in consultation with, and owned by, the main sectors involved (health, education, finance, civil service), and other stakeholders (professional associations, training institutions, civil society, private sector) and be integrated in national health plans and budgets.[14]

In many countries affected by severe workforce shortages, policy options such as task-sharing and skills substitution should receive attention, and be considered in national health workforce plans. While continuing to produce and deploy higher-level professionals and essential management and support workers, countries should strive for an adequate skills mix by giving increased attention to community-based and mid-level health workers. These cadres are proven to be effective in scaling up access to essential services, often with limited costs, and it is more likely they will be retained in rural areas. [15,16,17] Countries should, therefore, explicitly consider higher level professionals as well as community-based and mid-level health workers when formulating their national health workforce strategies, and recognize, manage, remunerate and support them as integral elements of the health system.

2. Evidence and joint learning

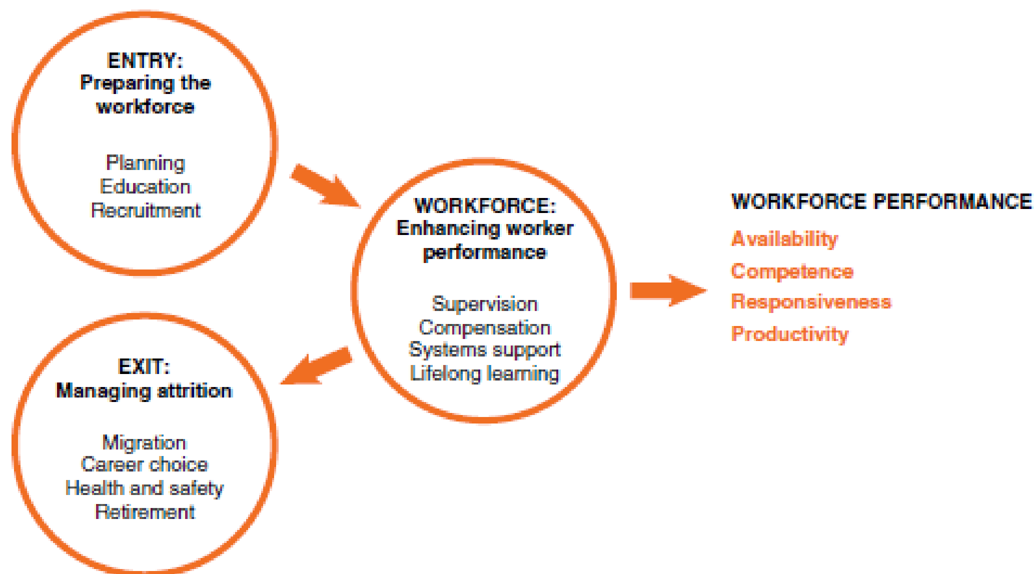
Countries affected by critical shortages and imbalances in their health workforces often lack the capacity to identify and evaluate crucial policy issues that relate to them. As a consequence, fundamental questions regarding the status, problems and performance of

the workforce remain unanswered, which hinders the task of monitoring the health workforce at the global, regional, national and sub-national levels.[18]

When HRH information and monitoring systems are strengthened, they can provide a better foundation for policy-making, planning, allocation of resources, programming and accountability.

The "working lifespan" framework provides a useful analytical tool with which to monitor and evaluate factors such as when people enter (or re-enter) the workforce, the period of their lives when they are part of the workforce, and the point at which they leave it.

Figure 4: The "working lifespan" approach to monitoring and evaluating human resources for health (Source: WHO, 2009)



At each of these stages, and for each of the policies and interventions adopted, there is a need to identify appropriate indicators and to put in place systems for data collection, processing and analysis. These are needed to track the availability, distribution and performance of health workers, to inform development or revision of strategies, and to track their impact and cost-effectiveness. [19]

Countries should increase investment in operational research to plug priority gaps in evidence.[20] They should build local analytical capacity to gather relevant evidence and tailor research approaches to the local context. This is in addition to strengthening health workforce information systems for the routine monitoring of progress in health workforce management, and should be done with the support of development partners and in collaboration with academia, research institutions and civil society.

3. Education

A key component of the implementation of an effective HRH strategy is to produce and prepare sufficient numbers of motivated workers who are equipped with adequate technical competencies. Their geographical and socio-cultural distribution should make them accessible, acceptable and available to target clients and populations, and able to reach them in an efficient and equitable manner. Much can be gained through improved distribution and enhanced performance of existing health workers, but recruiting and training should also be scaled up to address shortfalls.

The High Level Task Force on International Innovative Financing for Health Systems estimated that investment in education capacity should be scaled up to train and deploy between 2.6 and 3.5 million additional health workers in 49 low-income countries by 2015. This is necessary in order to expand coverage of services and to meet the health MDGs.[21] The range reflects different estimates produced according to alternative methodologies.

Table 1: Complementary estimates for requirement of additional health workers
(Source: High Level Task Force on International Innovative Financing for Health Systems, 2009)

Number of new health workers needed (by cadre)	WHO normative estimate	World Bank estimate (marginal budgeting for bottlenecks, medium scenario)
Physicians	349,953	35,879
Nurse/Midwives	1,699,107	203,013
Clinical Officers	233,302	
Radiology Technicians	47,697	
Lab Technicians	37,656	
Pharmacy Aides	20,083	
Orderlies	75,311	
Pharmacists	16,317	
Laboratory Technologists	16,317	
Dental Technicians	30,125	
Community Health Workers	950,701	1,441,929
Health extension workers		200,147
Junior, assistant, assistant midwife nurse (1 year training)		160,478
Technicians (lab, x-ray, pharmacy)		158,790
Health officer		23,226
Specialist		6,236
Administrative staff		356,195
Total Additional Health Personnel	**3,476,569**	**2,585,894**

A Task Force for Scaling Up Education and Training for Health Workers, convened by the Global Health Workforce Alliance, identified the key principles for establishing strong education and training systems: [22]

- Address national health needs coherently and flexibly through appropriate design of curricula
- Integrate education and in-service training into the health system
- Increase equity and efficiencies of scale by introducing innovations in the delivery of training. For example, through the use of communication technology and regional approaches
- Enhance quality through sustained leadership and collaboration between different sectors (both public and private, with a special emphasis on academia and training institutions) and different tiers of government, as well as international partners

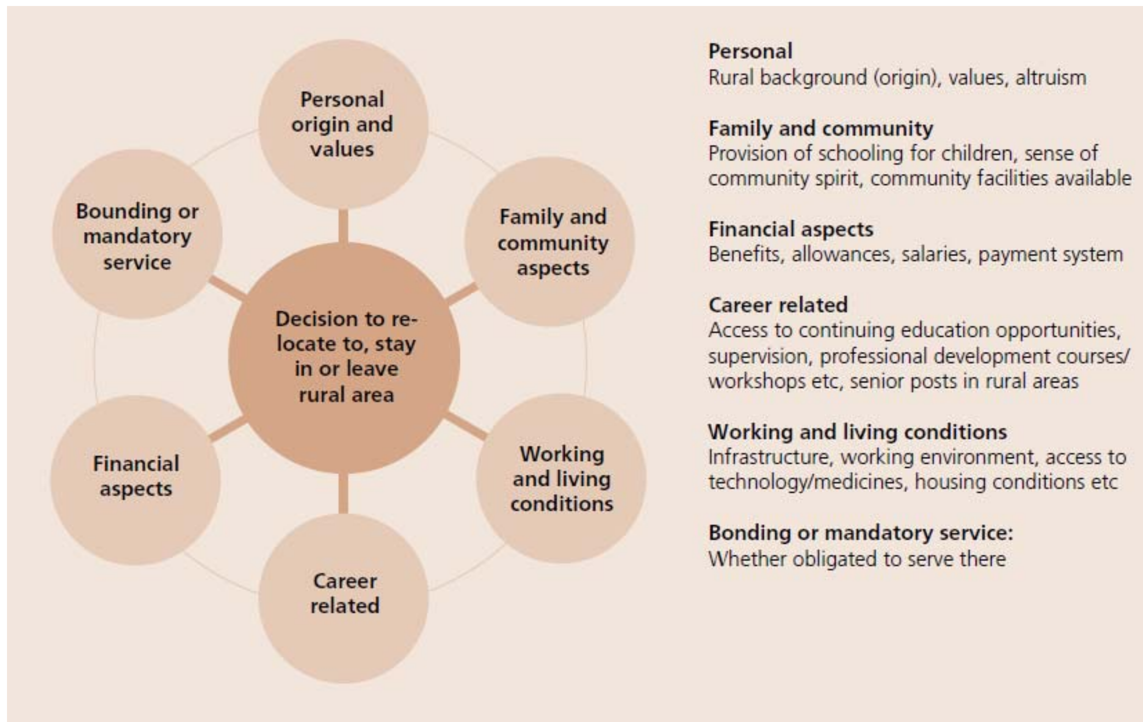
A dedicated focus on the quality of training and education is particularly important to ensure that health personnel possess the competencies required to fulfill their roles. Competency-based curricula, patient-centered and team-based education, and accreditation and regulation of training institutions and health providers can play an important role in this respect.

4. Retention, performance, distribution

To improve the performance of the health workforce, it is necessary to enhance the availability and competence of health workers, and to ensure equitable distribution and productivity. The challenge of attracting and retaining health workers to serve in rural areas is a recurring theme in most countries affected by an HRH crisis.

Recent systematic reviews on motivation and retention in low- and middle-income countries concluded that a health worker's choice of duty station is often determined by financial incentives, career development and management issues. These are also core factors in determining his or her productivity and job satisfaction.[23,24]

Figure 5: factors determining choice to work in rural areas
(Source: WHO, Increasing access to health workers in remote and rural areas through improved retention, 2010).



The evidence therefore points to the need for multiple approaches to address the many reasons that health workers avoid rural work. To this end, a multi-sectoral approach is warranted across various line ministries – including health, finance education and local government – to coordinate, implement and oversee the necessary strategies. The recent WHO policy recommendations (on increasing access to health workers in remote and rural areas) provide clear guidance on how to adopt combinations of incentives and regulatory policies, while improving the practice environment through supportive management.[25] Of critical importance are:

- Career-related incentives, including professional development opportunities and job security
- Positive factors in the workplace, such as supportive management, flexible schedules, availability of necessary supplies and appropriate referral services, access to information, and manageable workloads
- Family and lifestyle incentives, such as an increased period of paid leave, housing allowances, and opportunities for spousal employment

Compulsory service, requiring health workers to serve in rural health facilities after graduation, is a common policy option, and may have the desired effects in the short term. However, it is a strategy that presents significant drawbacks, including the risk that the most problematic areas of the country get the least experienced staff and that graduates are poorly supervised early in their career development.[26] Moreover, these policies have more limited long-term effects on retention, and are highly dependent on the capacity to monitor and enforce compliance.[27]

There is a limit to the effectiveness of incentives, so it is also important to create a pool of health workers who are willing for other reasons to work and live in rural areas. Effective strategies to achieve this objective include giving selection preference to students with rural backgrounds, tailoring education infrastructure, curricula and teaching methods to practice in rural areas, and deploying the majority of new health workers to under-served areas. Regulatory bodies and training institutions should coordinate their policies accordingly.

Country-specific targets should be set to correct imbalances in geographical distribution of health workers, while adopting relevant context-specific policies, identifying relevant indicators, and putting in place the necessary monitoring mechanisms.

5. Migration

Unplanned or excessive losses of health workers as a result of domestic and overseas migration can reduce the pool of active personnel, or have negative effects on their distribution. An over-concentration of health workers in urban areas, or in the private sector, and loss to overseas migration can ultimately compromise the performance of already weak health systems. In the previous section we identified strategies aimed at improving retention in rural areas and in the public sector.

When migration of health workers to other countries is unconstrained and unmanaged, it can pose a great challenge to fragile health systems. Various strategies have been conceived in the past to address the problem, including better planning to anticipate the phenomenon, introducing bilateral agreements between countries, and intervening to modulate the factors that affect domestic and international labor markets.

A certain level of international migration by skilled health workers (doctors, nurses, midwives) is probably inevitable. However, its negative impact might be limited by the creation of temporary loan schemes to enable professionals to work overseas for limited periods (although the long-term effectiveness of these arrangements is unclear).[28]

In the last few years the severity of the challenges posed by international migration of health professionals – and the role it plays in exacerbating shortage of qualified health workers, particularly in some countries – was unequivocally recognized at global level. This consensus was reflected by the resolutions of three subsequent World Health Assemblies, and in specific by commitments to address this particular problem. These included the Agenda for Global Action, which envisages as part of its objectives: "managing the pressures of the international health workforce market and its impact on migration." A specific activity envisaged for this strategy was the development of a code of practice to cover the international recruitment of health workers.

Recognizing the need to weight the international the labor market to favor retention in low- and middle-income countries, WHO, with the support of its partners, has recently brokered the adoption of a voluntary code on the international recruitment of health personnel.[29] This calls upon member states, recruiters and relevant stakeholders to cooperate in the ethical management of the migratory flow of health professionals.

Global collaboration and information sharing is essential – in particular on international movement of human resources – so it is critical that member states and partners work together to implement the code. To this end, all countries should put in place the regulatory, governance and information mechanisms required to ensure the successful implementation and monitoring of the code at national, regional and global levels. Recruiters, professional bodies and other stakeholders should be involved in the collaboration.

Key elements of the code implementation relate to the need to:

- Publicize and implement the code widely (not only for governments but also for recruiters, the private sector, professional associations and other stakeholders)
- Establish and maintain effective legal and administrative frameworks to translate the code into practical laws and make arrangements to implement it
- Monitor and oversee the work of recruiters, and ensure that they operate in compliance with the principles of the code

The importance of systems and processes to track progress cannot be over-emphasized. Experience from countries such as England, which have developed and implemented a national code of practice on international recruitment, indicates that it is challenging to judge the effectiveness of this type of tool in the absence of a well-structured monitoring system.[30]

Despite its focus on international recruitment, the code also calls for efforts to improve retention and working conditions. Therefore, the implementation of its provisions could potentially have a profound positive effect on domestic migratory flows.

6. Investment

There is great scope for increasing the return on investment in HRH by planning and deploying the health workforce more rationally (for instance through the mix of strategic skills), and by enhancing performance through a variety of management and incentive measures. However, a resource gap exists that can only be filled through increased allocation of domestic resources and international support.

In 2009, the High Level Taskforce on Innovative International Financing for Health Systems produced estimates of the investment in the health workforce necessary to achieve the health MDGs in 49 low-income countries. The estimates included the requirements for the training of new health workers, as well as salaries and incentives. They have now been adjusted for the Global Strategy for Women's and Children's Health, taking into account the different timeframe of the projections and other factors (full details of the methodology used for the revisions is available in the Finance background paper of the Global Strategy).

According to the latest projections available, an estimated additional investment of US$40 billion is required through 2015 to scale up the health workforce in 49 lowest-income countries.[31] This is equivalent to 24% of the total health investment needed.

Table 2: Adjusted estimated additional costs for strengthening health systems to scale up health services in 49 lowest-income countries - in 2005 $US billions.
(Source: Finance background paper UN Secretary General Global Strategy for Women's and Children's Health, 2010)

US$ Billion	2011	2012	2013	2014	2015	2011-2015
Programs and diseases						
Management of childhood illness	0.31	0.43	0.55	0.65	0.78	2.73
Immunization	0.66	0.83	1.11	1.13	1.31	5.04
Maternal health	0.90	1.13	1.53	1.92	2.36	7.83
Family planning	1.09	1.03	0.97	0.93	0.88	4.89
HIV/AIDS	1.24	1.68	2.26	2.63	3.07	10.88
TB	0.44	0.45	0.50	0.56	0.68	2.63
Malaria	0.92	1.52	1.14	2.07	1.46	7.11
Essential drugs (NCD, MH, Parasitic diseases)	0.42	0.55	0.68	0.92	1.59	4.16
Water and sanitation	0.02	0.04	0.05	0.12	0.13	0.34
Nutrition	0.24	0.22	0.24	0.31	0.36	1.36
Subtotal	*6.23*	*7.87*	*9.02*	*11.24*	*12.60*	*46.96*
Health systems strengthening						
Human resources	5.01	6.63	7.67	9.28	11.52	40.11
Infrastructure, transport and equipment	12.41	13.63	11.57	11.13	10.96	59.69
Supply chain and logistics	1.22	1.63	1.96	2.61	2.65	10.07
Health information systems	0.25	0.41	0.44	0.50	0.62	2.22
Governance, accreditation, and regulation	0.75	0.86	0.94	1.15	1.26	4.94
Health financing	0.44	0.68	0.89	1.48	1.77	5.26
Subtotal	*20.08*	*23.84*	*23.46*	*26.13*	*28.77*	*122.28*
Total	**26.31**	**31.71**	**32.48**	**37.37**	**41.37**	**169.25**
Per capita (US$)	*$19*	*$22*	*$26*	*$25*	*$27*	*$116*

While in most middle-income countries there is scope for increased financial allocation of domestic resources, in many low-income countries significant levels of international support will be required to achieve full funding of the Global Strategy. [32]

The benefits of development assistance for health can be maximized if such assistance takes the form of long-term predictable support, aligned to country needs and national plans, and covering both the investment and recurrent costs for non-disease-specific HRH.[33]

Where funding is channeled through disease-specific initiatives, support should be designed and implemented to strengthen the health workforce. This can happen by:

I. Prioritizing pre-service training of new health workers over selective in-service training, and mainstreaming disease-specific competencies in the training curricula

II. Supporting comprehensive reforms to incentive and retention packages for health workers, rather than daily payments and top-ups linked to a specific initiative

III. Supporting the processes of task sharing in the context of the rational planning of the health workforce, and through appropriate regulation, including frameworks and processes for skills substitution[34]

Domestic resource allocation to HRH should also be increased where it is insufficient. Where macro-economic policies hinder governments from making long-term investments in the health workforce, they should relax such policies, with the support of international financial institutions.[35]

SUCCESS IS POSSIBLE

Progress is possible, and the momentum for solving the crisis in the health workforce is growing. For example, the increasing visibility of HRH is reflected in specific references in G8 communiqués, in High Level Fora of the United Nations, and at international health events at global, regional and national level.

At the global level, and overcoming differences that once seemed insurmountable, WHO has succeeded in brokering the adoption of a code on international recruitment of health personnel – an important milestone towards addressing the challenge of the international brain drain.

The Global Fund, the GAVI Alliance, the World Bank and WHO are working on the establishment of a joint-funding platform for health systems.[36] This is a move towards harmonizing development assistance for health and aligning it to the health-systems strengthening agenda – consistent with the principles of the International Health Partnership and related initiatives, and the Harmonization for Health in Africa framework. Japan, the United Kingdom and the United States President's Emergency Plan for AIDS Relief (PEPFAR)[37] are among the development partners who have pledged to support the training of new health workers through their existing bilateral channels.

There are also several encouraging examples that point to the existence of committed leadership in the countries affected by the crisis. For example, several countries have

started adopting some of the policy options mentioned above, or are experimenting with innovations that are playing an important role in expanding coverage of essential health services through targeted investments in their health workforces.

Ethiopia, Pakistan and Ghana are among the countries addressing the challenges of shortage and maldistribution among physicians, nurses and midwives by adopting strategies for the deployment of health workers at the community level.[38,39,40] Mozambique allows Cesarean sections to be performed by surgical technicians, who perform over 90% of these life-saving procedures in rural areas, with low morbidity and mortality.[41,42] Rwanda has improved the performance of its health workers by forbidding donor-sponsored salary top-ups, and setting up a results-based financing program that ensures that incentives serve local (rather than donors') priorities. This scheme is credited with contributing to increases in the coverage of services that are essential to maternal and child health.[43]

Other countries have taken bold steps to tackle their HRH crises comprehensively. For example, Malawi has implemented an Emergency Human Resources Program (EHRP) comprising: the provision of incentives for recruitment and retention; a scale-up of domestic training capacity; secondment of international volunteer doctors and nurse tutors; and provision of technical support to bolster management and planning capacity. The EHRP is estimated to have saved 13 000 lives.[44]

All over the world, health workers, policy makers, partners and a variety of stakeholders are collaborating to devise and implement sustainable health-workforce solutions. These examples, and many more unsung success stories, demonstrate that progress is possible, and that the lives of women and children can be saved when political will, sound strategies and adequate resources come together.

Acknowledgements

The contents of this paper were developed by the Global Health Workforce Alliance in consultation with its members and stakeholders.

REFERENCES

1 Bhutta ZA et al. "Countdown to 2015 decade report (2000–10): taking stock of maternal, newborn, and child survival." *The Lancet*. 2010; 375: 2032–44

2 Hogan MC, Foreman KJ, Naghavi M, Ahn SY, Wang M, Makela SM, Lopez AD, Lozano R, Murray CJ. "Maternal mortality for 181 countries, 1980-2008: a systematic analysis of progress towards Millennium Development Goal 5." *The Lancet*. 2010; 375(9726):1609-23.

3 Anand S, Bärnighausen T. "Health workers and vaccination coverage in developing countries: an econometric analysis." *The Lancet.* 2007. April 14; 369(9569):1277-85.

4 WHO. "Working together for health – World Health Report 2006." http://www.who.int/whr/2006/chapter1/en/index.html (accessed September 6th, 2010).

5 WHO. "Disease and injury regional estimates for 2004." http://www.who.int/healthinfo/global_burden_disease/estimates_regional/en/index.html (accessed September 6th, 2010).

6 UNAIDS. "2009 AIDS Epidemic Update." December 2009. http://data.unaids.org/pub/Report/2009/JC1700_Epi_Update_2009_en.pdf (accessed September 6th, 2010).

7 High Level Taskforce on International Innovative Financing for Health Systems. Working Group 1. Technical Report 5. June 2009. http://www.internationalhealthpartnership.net/pdf/IHP%20Update%2013/Taskforce/Johansbourg/Working%20Group%201%20Report%20%20Final.pdf (accessed: September 6th, 2010).

8 WHO. Maximizing Positive Synergies Collaborative Group. "An assessment of interactions between global health initiatives and country health systems." *The Lancet*. 2009; 373 (9681): 2137–69.

9 Pick W. "Lack of evidence hampers human-resources policy making." *The Lancet.* 2008; 371(9613):668-74.

10 Anand S, Barnighausen T. "Human resources and health outcomes: cross-country econometric study." *The Lancet*. 2004. 364:1603–09.

11 De Savigny D, Adam T. "Systems thinking for systems strengthening." WHO, Alliance for Health Policy and Systems Research. http://www.who.int/alliance-hpsr/resources/9789241563895/en/index.html (accessed: September 6th, 2010).

12 Global Health Workforce Alliance. "Health workers for all and all for health workers. An agenda for global action; 2008." http://www.who.int/workforcealliance/forum/1_agenda4GAction_final.pdf (accessed: September 6th, 2010).

13 HRH Action Framework. USAID, WHO, Global Health Workforce Alliance. 2010. http://www.capacityproject.org/framework/ (accessed: September 6th, 2010).

14 Global Health Workforce Alliance. "Good practices for country coordination and facilitation – Human Resources for Health." Geneva. 2009. http://www.who.int/workforcealliance/countries/ccf/CCF_Dec2009.pdf (accessed: September 6th, 2010).

15 Lewin S, et al. "Supporting the delivery of cost-effective interventions in primary health-care systems in low-income and middle-income countries: an overview of systematic reviews." *The Lancet*. 2008. 372(9642): p. 928-939.

16 Lewin S, Munabi-Babigumira S, Glenton C, et al. "Lay health workers in primary and community health care for maternal and child health and the management of infectious diseases." *Cochrane Database Syst Rev.* 2010 March 17;3.

17 Lehmann U (2008). "Mid-level health workers. The state of the evidence on programmes, activities, costs and impact on health outcomes. A literature review." Department of Human Resources for Health: Geneva. http://www.who.int/hrh/MLHW_review_2008.pdf (accessed July 30th, 2010).

18 WHO, the World Bank, USAID, 2009. "Handbook on Monitoring and Evaluation of Human Resources for Health with special applications for low- and middle-income countries." http://whqlibdoc.who.int/publications/2009/9789241547703_eng.pdf (accessed: September 6th, 2010).

19 WHO, the World Bank, USAID, 2009. "Handbook on Monitoring and Evaluation of Human Resources for Health with special applications for low- and middle-income countries." http://whqlibdoc.who.int/publications/2009/9789241547703_eng.pdf (accessed: September 6th, 2010).

20 Ranson MK, Chopra M, Atkins S, et al. "Priorities for research into human resources for health in low- and middle-income countries." *Bull World Health Organ.* 2010;88(6):435-43.

21 High Level Task Force, op. cit.

22 Global Health Workforce Alliance. Task Force for Scaling Up Education and Training for Health Workers 2009. http://www.who.int/workforcealliance/documents/Global_Health%20FINAL%20REPORT.pdf (accessed September 6th, 2010).

23 Willis-Shattuck M, et al. "Motivation and retention of health workers in developing countries: a systematic review." *BMC Health Services Research*. 2008. 8(1): p. 247.

24 Dolea C, Stormont L, Braichet JM. "Evaluated strategies to increase attraction and retention of health workers in remote and rural areas." *Bull World Health Organ*. 2010 May;88(5):379-85.

25 WHO. "Increasing access to health workers in remote and rural areas through improved retention, 2010." http://www.who.int/hrh/retention/guidelines/en/index.html (accessed September 6th, 2010).

26 High-Level Forum on the Health MDGs. "Health Workforce Challenges: Lessons from Country Experiences. 2004: Abuja."

27 Hayford K, Vujicic M, and Lindelow M. "Recruiting and Retaining Health Workers in Remote Areas: Review of Global Evidence." 2009. World Bank: Washington, D.C.

28 High-Level Forum on the Health MDGs. "Health Workforce Challenges: Lessons from Country Experiences. 2004: Abuja."

29 WHO. 2010. "WHO Global Code of Practice on the International Recruitment of Health Personnel." http://www.who.int/hrh/migration/code/full_text/en/ (accessed September 6th, 2010).

30 Buchan J, McPake B, Mensah K, Rae G. "Does a code make a difference – assessing the English code of practice on international recruitment." *Hum Resour Health*. 2009 April 9;7:33.

31 "Financial Estimates in the Global Strategy for Women's and Children's Health." Background Paper.

32 "Financial Estimates in the Global Strategy for Women's and Children's Health." Background Paper.

33 Cometto G, Ooms G, Starrs A, Zeitz P. "A global fund for the health MDGs?" The Lancet. 2009; 373 (9674): 1500–02.

34 Lehmann U, Van Damme W, Barten F, et al. "Task shifting: the answer to the human resources crisis in Africa?" Hum Resour Health. 2009. June 21;7:49.

35 Stuckler D, Basu S, Gilmore A, et al. "An evaluation of the International Monetary Fund's claims about public health." Int J Health Serv. 2010;40(2):327-32.

36 England R. "The GAVI, Global Fund, and World Bank joint funding platform." The Lancet. 2009; 374 (9701):1595-6.

37 PEPFAR. HR 5501, Tom Lantos and Henry J Hyde. United States Global Leadership Against HIV/AIDS, Tuberculosis, and Malaria Reauthorization Act of 2008. President's Emergency Plan for AIDS Relief, 2008. Washington, DC: Congress of the United States, 2008. http://www.pepfar.gov/about/index.htm (accessed September 6th, 2010).

38 Phillips JF, Bawah AA, Binka FN. "Accelerating reproductive and child health programme impact with community-based services: the Navrongo experiment in Ghana." Bull World Health Organ. 2006; 84(12):949-55.

39 Wakabi W. "Extension workers drive Ethiopia's primary health care." The Lancet. 2008; 372(9642):880.

40 Douthwaite M, Ward P. "Increasing contraceptive use in rural Pakistan: an evaluation of the Lady Health Worker Programme." Health Policy Plan. 2005; 20(2):117-23.

41 Pereira C, Cumbi A, Malalane R, Vaz F, McCord C, et al. (2007). "Meeting the need for emergency obstetric care in Mozambique: Work performance and histories of medical doctors and assistant medical officers trained for surgery." BJOG 114: 1530–1533.

42 Vaz F, Bergstrom S, Vaz M, Langa J, Bugalho A. "Training medical assistants for surgery. Policy and practice." WHO Bull World Health Organ. 1999, 77(8):688-691

43 Basinga P, Gertler P, et al. "Paying Primary Health Care Centers for Performance in Rwanda." Policy Research Working Paper 5190. The World Bank. 2010. http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1543049 (accessed September 6th, 2010).

44 O'Neil M, Jarrah Z, Nkosi L, et al. "Evaluation of Malawi's Emergency Human Resources Programme." UK Department for International Development (2010). http://www.who.int/workforcealliance/media/news/2010/malawihrhplanstate/en/index.html (accessed September 6th, 2010).H

The production of this paper, adaptation and layout has been managed by The Partnership for Maternal, Newborn & Child Health.

The Partnership for Maternal, Newborn & Child Health