Will we achieve universal access to HIV/AIDS services with the health workforce we have?
A snapshot from five countries

Literature Review

Task Force on Human Resources for Universal Access, Global Health Workforce Alliance
Literature Review

Will we achieve universal access to HIV/AIDS services with the health workforce we have?

A snapshot from five countries


This piece of work has been commissioned by the Global Health Workforce Alliance (the Alliance), a partnership hosted by the World Health Organization (WHO), as part of its mandate to implement solutions to the health workforce crisis. In preparation of the report the Alliance is grateful to all the members of the Task Force on Human Resources for Universal Access.
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vi Will we achieve universal access to HIV/AIDS services with the health workforce we have?
**Acronyms**

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<tr>
<th>Acronym</th>
<th>Definition</th>
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<tr>
<td>AIDS</td>
<td>Acquired Immune Deficiency Syndrome</td>
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<td>ANC</td>
<td>Antenatal care</td>
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<td>ART</td>
<td>Antiretroviral Therapy</td>
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<td>ARV</td>
<td>Antiretroviral drugs</td>
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<tr>
<td>CBO</td>
<td>Community based organization</td>
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<td>CHW</td>
<td>Community health worker</td>
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<tr>
<td>CINAHL</td>
<td>Cumulative Index for Nursing and Allied Health Literature</td>
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<tr>
<td>CDRZ</td>
<td>Center for Infectious Disease Research, Zambia</td>
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<tr>
<td>CL</td>
<td>Compulsory Licensing</td>
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<tr>
<td>COP</td>
<td>Country Operational Plan (required for PEPFAR assistance)</td>
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<tr>
<td>DFID</td>
<td>UK’s Department for International Development</td>
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<tr>
<td>DHS</td>
<td>Demographic and Health Survey</td>
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<tr>
<td>FBO</td>
<td>Faith-based organization</td>
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<td>GFATM</td>
<td>Global Fund for AIDS, TB and Malaria</td>
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<td>HEP</td>
<td>Ethiopia’s Health Extension Program</td>
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<td>HEW</td>
<td>Health Extension Worker, the CHW of Ethiopia</td>
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<tr>
<td>HIV</td>
<td>Human immunodeficiency virus</td>
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<td>HR</td>
<td>Human resources</td>
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<td>HRH</td>
<td>Human resources for health</td>
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<tr>
<td>HRIS</td>
<td>Human resources information system</td>
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<td>HRM</td>
<td>Human resources management</td>
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<td>HRMS</td>
<td>Human resources management system</td>
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<td>HSP</td>
<td>Health Sector Plan</td>
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<td>HSS</td>
<td>Health Systems Strengthening (a type of program funding by donors such as GFATM)</td>
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<td>IMF</td>
<td>International Monetary Fund</td>
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<td>IST</td>
<td>In service training</td>
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<tr>
<td>MARP</td>
<td>Most At Risk Population (for potentially contracting HIV)</td>
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<tr>
<td>MCH</td>
<td>Maternal and Child Health</td>
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<td>MDG</td>
<td>Millennium Development Goal(s)</td>
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<tr>
<td>MoF</td>
<td>Ministry of Finance</td>
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<tr>
<td>MoH</td>
<td>Ministry of Health, sometimes called Ministry of Public Health</td>
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<tr>
<td>NGO</td>
<td>Non-government organization, usually referring to a non-profit service organization</td>
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<tr>
<td>OI</td>
<td>Opportunistic Infection</td>
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<td>PEP</td>
<td>Post-exposure prophylaxis</td>
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<tr>
<td>PEPFAR</td>
<td>U.S. President’s Emergency Plan for AIDS Relief</td>
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<tr>
<td>PLHIV</td>
<td>Person or People Living with HIV</td>
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<tr>
<td>PMTCT</td>
<td>Prevention of Mother to Child Transmission (of HIV)</td>
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<td>PPE</td>
<td>Positive Practice Environment</td>
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<td>PSE</td>
<td>Pre-Service Education</td>
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<tr>
<td>PUBMED</td>
<td>A free digital archive of biomedical and life sciences journal literature maintained by the U.S. National Institutes of Health</td>
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<tr>
<td>STI</td>
<td>Sexually transmitted infection</td>
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<td>TB</td>
<td>Tuberculosis</td>
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<tr>
<td>TIMS</td>
<td>Training Information Management System</td>
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<td>TWG</td>
<td>Technical Working Group</td>
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<td>UA</td>
<td>Universal Access to HIV treatment, care, support and prevention services</td>
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<td>UNAIDS</td>
<td>Joint United Nations Programme on HIV/AIDS</td>
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<td>USAID</td>
<td>US Agency for International Development</td>
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<td>UNGASS</td>
<td>United Nations General Assembly 26th Special Session, at which was adopted the Declaration of Commitment on HIV/AIDS</td>
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<td>WHO</td>
<td>World Health Organization</td>
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Will we achieve universal access to HIV/AIDS services with the health workforce we have?
Section 1: Literature Review: Scaling-up HIV/AIDS Services (October 2009)

Background

Health care systems cannot perform adequately without sufficient numbers of skilled, motivated, and supported health care workers (HCWs). Yet, a critical shortage of 4.3 million HCWs exists worldwide,1 hampering the delivery of important health interventions, including scaling up HIV/AIDS services toward universal access. In fact, limited human resources for health (HRH) is considered the single biggest obstacle to attaining universal antiretroviral therapy (ART coverage).2 Globally, there are approximately 33 million people living with HIV/AIDS (PLWHA) and two million die each year from the disease. Efforts to scale-up ART for HIV/AIDS are expanding access and 700,000 people received ART for the first time in 2006. However, although progress has been made, approximately seven million PLWHA who needed treatment in 2006 did not receive ART.3 As a result, efforts such as the President's Emergency Plan for AIDS Relief (PEPFAR), the Global Fund, the WHO 3 x 5 initiative, World Bank programs, and the Millennium Development Goals (MDGs) are directed toward expanding HIV/AIDS services. In addition, the General Assembly of the United Nations (U.N.) has committed itself to providing universal access to HIV/AIDS care by 2010.

In low and middle-income countries, it is estimated that two million PLWHA were receiving treatment by the end of 2006, representing 28% of the seven million in need. In spite of international initiatives to scale-up treatment, coverage of ART varies by region with a low of 6% in North Africa and the Middle East, 15% in Eastern Europe and Central Asia, 19% in Southeast Asia, 28% in sub-Saharan Africa (up from just 2% in 2003), to Latin America and the Caribbean at 72% overall.4 Sub-Saharan Africa has the highest HIV prevalence worldwide with 23 million PLWHA.5 Sixty-seven percent of all people on ART live in sub-Saharan Africa and almost 90% of the two million children under the age of 15 in this region are in need of treatment for HIV/AIDS.6

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**Purpose of this Document**

In June 2006, at the U.N. General Assembly High-Level Meeting on HIV/AIDS, member states agreed to work toward “universal access to comprehensive prevention programmes, treatment, care and support” by 2010. Five strategic directions were identified: 1) enabling people to know their HIV status, 2) maximizing the health sector’s contribution to HIV prevention, 3) accelerating the scale-up of HIV/AIDS treatment and care, 4) strengthening and expanding health systems, and 5) investing in strategic information to guide an effective response.

This document represents the outcomes of a literature review undertaken to identify and explore the HRH challenges associated with Strategy 3 – scaling up HIV/AIDS services toward universal access and achievement of the health MDGs. The literature review represents Phase 1 of a 3 Phase initiative intended to formulate a set of guidelines and framework for scaling up HRH toward universal access. The framework will include implementation guidelines for countries working to address their health system wide HRH needs and gaps and will form part of the GGWA strategy to address and guide the management and resolution of the HRH crisis.

**Document Organization**

The literature review is organized into the following sections:

**Section 2, Methods** – Lists the specific databases and information sources accessed and investigated as part of the literature review. It also lists the key terms and concepts used in the literature search.

**Section 3, Findings** – Presents the most relevant findings and studies resulting from the literature review around the topic of scaling up HRH toward delivery of HIV/AIDS services. This section also describes the results of a literature review and research undertaken for the 8 target countries in the scaling up HIV/AIDS services. These target countries include Cambodia, Ethiopia, Haiti, Kenya, Mali, Mozambique, Sierra Leone and Zambia. Please note that no relevant studies were found for Mali or Sierra Leone.

**Section 4, Discussion** – This section distills from the overall findings key themes from the literature review in terms of promising and best practices and recommendations related to scaling up HRH toward achieving universal access. It is intended that material in this section be used to help shape recommendations and implementations guidelines for countries working to address their health system wide HRH needs and gaps.

**Appendix A** – Provides the broad results of the initial literature search conducted for each of the target countries.
Section 2: Methods

Searches for relevant articles and reports for this review covered the period from 2000 to 2008 and included the following databases and sources:

- The Cochrane Library
- Google Scholar
- CINAHL
- PUBMED
- HRH Global Resource Center
- USAID Development Experience Clearinghouse
- World Health Organization
- Human Resources for Health Journal
- World Bank
- UNICEF

Key terms used in the literature review included the following:

- HRH, Human resources for health
- Health workers
- Universal access
- HIV
- HIV services
- AIDS
- AIDS services
- HIV / AIDS services
- Scaling up HIV / AIDS services
- Service scale up implications
- Ethiopia / Cambodia / Haiti / Kenya / Mozambique / Mali / Sierra Leone / Zambia

In terms of approach, citations were examined, titles and abstracts screened for eligibility, full text reviewed in greater detail if deemed relevant, and findings pertinent to this literature review presented. Criteria for inclusion included studies or detailed descriptions of the HRH implications of scaling up HIV/AIDS services. Articles and documents that only tangentially discussed the HRH implications or simply mentioned that there are HRH issues to scaling up HIV/AIDS services were not included.
Section 3: Findings

The WHO recommends the following strategies for strengthening and sustaining efforts to scaling-up HIV/AIDS care and treatment: Capitalizing on recent progress made in access to treatment, ensuring timely access to care and high levels of retention in treatment programs, reducing the cost of second-line regimens (costs have declined for first-line regimens), enhancing collaboration between HIV and tuberculosis (TB) programs, scaling-up access to care (including co-trimoxazole prophylaxis for HIV exposure) and developing comprehensive strategies to prevent, diagnose and treat viral hepatitis co-infection.8 In addition to these strategies, the Global HIV Prevention Working Group recommends that donors and national governments significantly increase funding for treatment and prevention of HIV.8

Researchers have offered other suggestions for scaling-up based on study findings. Gilks (2006) recommends implementing a public-health approach based on decentralized, integrated, equitable delivery of care that uses simplified and standardized operational approaches provided through district networks with treatment teams headed by doctors/medical officers, but primarily comprised of nurses, clinical officers, PLWHA and (trained and paid) lay/community health workers.9

Harries, Schouten, and Libamba (2006) also suggest that simplifying the system is essential to success. In addition, regular and secure supplies of drugs to the facilities, good adherence with therapy by patients and compliance with follow-up to lower the chance to develop resistance are needed.10 Additionally, Bautista-Arredondo, Mane and Bertozzi (2006) found that treating large numbers of patients at low adherence is far less effective than treating fewer numbers with high adherence. Also, non-adherence was found to be associated with ineffective rapid scale-up and poor prescribing practices.11 Binswanger (2000) suggests initial implementation of programs at the district level to refine processes, after which replication and scale-up to the national level can proceed quickly. Community participation and local coordination are needed and funding should be available locally and not allocated to predefined categories. Empowerment and accountability should also be promoted.12

Another strategy for scaling-up HIV/AIDS care involves task-shifting. Task-shifting expands the skills of less specialized cadres of health workers, enabling them to complement doctors and HIV specialists, which are often in short supply.

For example, nurses may be trained to deliver ART, or community health workers to provide outreach and follow-up care. This approach directly addresses one of the biggest problems in scaling-up HIV/AIDS prevention, treatment and care: the shortage of HCWs to deliver needed services.

Challenges

Many low and middle-income countries face numerous challenges in health care delivery including weak national health systems, poor infrastructure, civil war, corruption, and meager financial resources.

In addition to overall supply deficiencies, health workers are distributed unevenly. Countries with the lowest relative need actually have the greatest number of health workers. Conversely, the African region has the greatest burden of disease (24%) with only 3% of the world’s health workers and 1% of the financial resources. Uneven distribution also exists within countries through urban/rural and public/private imbalances.

Scaling-up ART is estimated to require between 20% and 50% of the available health workforce in many African nations. Specifically, it is projected that (at best) the supply of health workers would reach only 60% of the need in Tanzania and would be 300% greater than the available supply in Chad by 2015. Therefore, efforts to address HRH are essential to the successful scaling-up of HIV/AIDS interventions. Yet, such efforts require much planning and coordination.

HRH: Assessing and Planning

First, a comprehensive assessment of current HRH should be conducted in order to obtain national and regional level data. (Examining only national level data may obscure trends within the country.) The implementation of a Human Resources Information System (HRIS) in Uganda serves as an example of how such an assessment can be conducted. The Uganda Ministry of Health (MoH) and four health professional regulatory councils needed continuously updated and reliable information on how many health professions by cadre were licensed to work in the country, what training they have received and if they are leaving the workforce. The existing paper-based system could not aggregate or analyze information and even impeded users’ ability to readily locate or update individuals’ addresses and licensing information. A HRIS was developed which utilized open source (free) software, data was entered into the system from the paper records, all relevant personnel were trained on the system, data was then analyzed and plans to address problems identified in the assessment were developed and implemented.


Additionally, a needs assessment or projected estimation of future numbers and types of HCWs required to deliver HIV/AIDS services should be determined and compared to available HRH in order to identify shortfalls in specific regions and by specific cadres. Policy implications based upon one model used by Baringhausen, Bloom, and Humair (2007) of future HRH needs for HIV/AIDS include the need to account for the fact that there is a positive feedback effect of increasing HRH. As more HCWs become available, ART coverage will expand and more PLWHA will live longer, thereby increasing the number of people who need to receive ART and the number of HCWs needed to deliver services. Additionally, simply to maintain current levels of ART in developing countries, health policies must focus on increasing the number of HRH as well as implementing prevention efforts effective in reducing the incidence of HIV infection. Furthermore, the net inflow of HCWs into ART programs will need to increase substantially in order to achieve universal access. Policies that increase the inflow should be coupled with interventions to decrease emigration rates.

An example of estimating future HRH needs is outlined in a USAID paper on scaling-up HIV/AIDS services in Ethiopia. First, current human resources data was collected. The projected growth in the number of public sector doctors, nurses, pharmacists and laboratory technicians was compiled using current data and trends while assuming existing conditions would be unchanged. Next, projected population growth was factored in and it was determined that the low number of doctors represented a limiting factor to the maintenance and expansion of health services. Subsequently, the estimated number of ART/prevention of mother-to-child transmission (PMTCT) patients per doctor per year were determined using number of patients seen per workday (20) multiplied by 180 workdays per year (=3600) and divided by average number of visits per year (9). Thus it was determined that one doctor could provide ART/PMTCT services to 400 patients per year. Using projected numbers of patients needing care, the deficit in physicians became quantifiable and resources could be directed at addressing the issue.

Funding sources should also be identified. All of the data collected can then be used to create a national human resources strategic plan. Such plans should be targeted toward specific goals to achieve universal access, be comprehensive (include health workforce compensation, policy, education, partnership, leadership, and management factors), cover all cadres and sectors and link to a broader health strategy. Additionally, they should promote equity, safety, education, training, retention, and quality. Strategic plans must therefore consider both short-term and long-term solutions to HRH issues.

While antiretroviral drugs, medicines to prevent or treat opportunistic infections, laboratory equipment and health care facilities can be scaled-up relatively quickly if funding is available, HRH cannot be increased rapidly due to long education

and training times. It is estimated that 2912 HCWs are needed annually to achieve universal ART coverage in developing nations and that current education capacity falls short of meeting this goal. Although training facilities may be built quickly, scarcity of secondary school graduates qualified to enter the programs as well as lack of health care teachers compound the problem. A case study from Ghana demonstrates how a national HRH plan dealt with education challenges. A community-based health planning and services program places trained community health offices in rural and deprived areas to work with health aides from the community. Additionally, practicing health workers and new graduates from universities are being encouraged to take on teaching roles. New training sites are planned and in the long run, every hospital is expected to have training capacity. Furthermore, mid-level cadres are quickly being expanded, salaries are increasing, bonuses and bonding schemes are being rolled out and health management training programs are being implemented.

Countries facing severe HRH shortages must examine innovative means of extending resources as far as possible. Utilizing mentoring programs, strategic partnerships and staff exchange programs among institutions, as well as sharing technical expertise and experience with other countries may be beneficial. Donors should take measures to build and sustain national capacity, upgrade pay scales and aid in expanding the roles of all levels of health workers as well as PLWHA. All of these suggestions, guidelines and plans to scale-up HIV/AIDS prevention, treatment and care have costs associated with them. Determining the cost of scale-up is essential, yet difficult to do.

**Costs**

Defining the costs of scaling-up services for HIV/AIDS is challenging. Achieving the WHO/UNAIDS ART "3 x 5" goal of three million people on ART by 2005 was estimated to cost between US$ 5 billion and US$ 6 billion over two years for drugs, support programs, administrative and logistic costs. Support program estimates include training of existing clinical personnel, supervision of ART delivery, and remuneration of volunteers who provide ART adherence support. The U.N. estimates that US$ 8.3 billion was spent on HIV/AIDS programs in low and middle-income countries in 2005. However, the search for a global figure that can be consistently applied to a more meaningful national or local

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level remains elusive. One systematic review of the literature by Johns and Torres (2005) on the costs of scaling-up health interventions found that typical cost projections are difficult to determine due to the scarcity of cost data, varying staffing and infrastructure levels across countries, differences in purchasing power parity exchange rates, and inconsistencies in how fixed, semi-fixed, and variable costs are determined and measured. The costs of scaling-up an intervention are specific to both the type of intervention as well as its particular setting. Therefore, some experts advocate for moving away from specific global estimates to the use of simple costing methods using country-level or regional data based on local factors such as training costs, transportation expenses, use of various technologies, and availability and capacity of human resources.25,26 However, some studies have estimated annual costs per person per year for HIV/AIDS services. Bertozzi (2004) found the cost of testing, prophylaxis, treatment, drug costs and laboratory monitoring to be US$ 913 for low-income countries and US$ 4743 for middle-income countries (constant 2000 US$).27 A study in Mexico by Bautista-Arredondo, Mane, and Bertozzi (2006) found average annual drug costs per patient to be between US$ 2430 and US$ 4270 (prior to the availability of generic drugs).28 Binswager (2000) determined that in a district with 300,000 people and a HIV prevalence rate of 5-10%, a comprehensive HIV prevention program (controlling STDs, providing intensive health education, offering youth activities, promoting and distributing condoms, training HCWs, and maintaining a safe blood supply) would cost US$ 350,000 or US$ 1.16 per person.29 These extreme cost variations support the notion that costs reflect national and regional differences and are difficult to consistently measure.

Targeted Country-Specific Findings

HRH implications of scaling up HIV/AIDS services in the following eight countries were examined: Cambodia, Ethiopia, Haiti, Kenya, Mali, Mozambique, Sierra Leone, and Zambia.

In 2003, Cambodia unveiled its plan to meet the need for HIV/AIDS services, the comprehensive Continuum of Care (CoC) service delivery model, which includes integrated provision of treatment for PLWHA. By the end of 2005 the program was providing free ART to approximately 11,000 of the 19,000 people in need. The main principles of the CoC incorporate a strong and consistent


plan, participatory and local ownership and referral hospital/community links. The provision of services include: 1) voluntary and confidential counseling and testing, 2) community services such as home-based care, 3) health facility-based care and treatment, and 4) the Center for Friends Help Friends activities which provide education and a sense of solidarity and companionship. Positive spillover effects to the rest of the health system have been noted.30

**Ethiopia** faces the sixth highest rate of HIV infection in the world31 and a severe HRH shortage. The 2003 physician to patient ratio was five times lower than the sub-Saharan Africa average at 1:34,000. The nurse to patient ratio of 1:4,900 was four times lower. Recommendations to address these issues include: 1) that the government take a strong leadership role in addressing the human capacity issue – in collaboration with development partners, 2) that an alternative ART staffing pattern, using a “nurse-intensive” staffing scenario should be considered, 3) that supplementation of salaries for public health workers by development partners, to reduce attrition, should be evaluated, and 4) that measures be taken to reduce patient out-of-pocket expenditures for HIV/AIDS services.32 Additionally, other suggestions to maximize program impact while utilizing current resources involves the integration of HIV/AIDS programs into existing Family Planning services (and vice versa) which has been shown to be very cost effective and an excellent point of entry.33

**Haiti** is the poorest country in the western hemisphere, has an unemployment rate of 70%, a heavy HIV burden, and critical HRH shortages. Community-based care of AIDS has been highly effective in rural Haiti. A pilot program of HIV/AIDS services in Haiti involved the integration of such services with an existing TB-control program and infrastructure through the HIV Equity Initiative. Lessons learned from TB programs, including strict treatment guidelines and standards of care were successfully applied to HIV/AIDS care and treatment.34 Another study in Haiti determined the mean total cost of treatment per patient to be US$ 982 per year, with direct medical costs of US$ 846 (medications, hospitalizations, lab tests, nutrition, and referrals), overhead costs of US$ 114 and societal costs of US$ 22. It was also estimated that 1.5 doctors and 2.5 nurses were needed to treat 1,000 patients in the first year of ART and recommendations for rural areas included the...
use of community health worker and assistant medical officer staffing models.\textsuperscript{35} Another program to scale-up a successful HIV/AIDS treatment project and provide comprehensive care to an entire Département du Centre (population 550 000) in rural Haiti demonstrated that community-based treatment of HIV is feasible and highly effective in resource-limited settings, and serves as a successful model for others to replicate. ART was provided in the context of a comprehensive program of HIV, TB and sexually transmitted disease (STD) treatment and prevention, along with women's health services at four sites in the first year. At each site, the medical facility was renovated, additional staff was hired as needed, and a network of community health workers was established throughout the surrounding villages to serve as a link with the community and to provide directly observed treatment. In the first year of scale-up, over 8000 patients were followed for HIV and over 1050 were treated with ART. Adherence was very high, and clinical outcomes were excellent.\textsuperscript{36} In another effort to address the HRH shortage and increase the number of nurses trained in HIV/AIDS care, The Ministry of Health and Population collaborated with the International Training and Education Center on HIV over a period of 12 months to create a competency-based HIV/AIDS curriculum to be integrated into the 4-year baccalaureate program of the four national schools of nursing.\textsuperscript{37}

\textbf{Kenya} has a 9.4\% HIV prevalence with 525,000 PLWHA. One study found that HIV/AIDS has severely impacted the health workforce (with an estimated 3500 infected health workers) resulting in widespread attrition due to death, illness and absenteeism. In fact, death was the leading cause of attrition at 31.4\%, with nurses having the highest death rate of any cadre (10\%): fifty percent of these deaths were from AIDS. Additionally, the workload has increased drastically causing health workers to resign or move away from clinical work. Therefore, this study recommends that interventions to protect and treat health workers be implemented.\textsuperscript{38} One study examined specific HRH requirements for Kenya and found that in order to meet the PEPFAR targets for voluntary counseling and testing (VCT), ART, and PMTCT through 2008, the public sector needs to hire additional staff (55 doctors, 87 clinical officers, 137 nurses, and 158 VCT counselors) over the next two years. The number of additional lab specialists needed (262) indicates a 15 percent increase in this category over the total number of lab specialists in 2005. The requirements for pharmacy specialists are even higher: 219 additional staff must be hired in the public sector over the next two years, which is equivalent to a 50 percent increase in the total number of pharmacy specialists from the

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number available in the public sector in 2005.39 Addressing competency concerns, one study of nearly 2,000 HCWs looked at their preparedness to deliver HIV/AIDS services. Recommendations based on the findings of the study include assessing competency and providing health worker training, increasing HCW knowledge of national guidelines for treatment and awareness of post-exposure prophylaxis, addressing stigma, resources for coping with familial burdens of HIV, examining the incidence of substance abuse and promoting HIV testing among HCWs.40

Note – No relevant studies were found for Mali or Sierra Leone.

Section 4: Discussion

This section distills from the overall literature review findings, key themes in terms of promising and best practices and recommendations related to scaling up HRH toward achieving universal access. It is intended that material in this section be used to help shape recommendations and implementations guidelines for countries working to address their health system wide HRH needs and gaps.

Invest in HR strategies and initiatives to reduce HCW turnover and emigration rates

Policies and strategies to increase the inflow of HCWs to provide ART services need to be combined with initiatives to retain existing HCWs. The literature review concluded that the inflow of HCWs required to achieve universal ART coverage is substantially reduced if HCW retention rates are improved. HRH program options to address high turnover rates include conditional scholarship programs and training of health worker cadre who are not internationally recognized to deliver ART services, e.g. health officers. A number of relatively simple, low cost strategies that can be implemented at the workplace level can also be used to address situations of high turnover rates. These include the use of non-financial rewards to recognize staff performance, supervision and management training for district and facility level managers, etc. At a minimum, retention rates need to be tracked and monitored and the main reasons HCWs are choosing to leave the health system clearly understood.

Development and implementation of a computerized HRIS for the MoH in Uganda is a good example of a relatively low cost initiative that can be used to record, track and report on this type of critical HRH data.


An often overlooked but significant impediment to current efforts to scale up HIV services in many countries is the capability and configuration of the Human Resource Management (HRM) function. In many cases, government HRM policies, practices and procedures are found to be over-centralized, fragmented and bureaucratic, and in need of radical reform in order to permit available external funds or technical assistance to be spent or utilized to create any meaningful changes or results.41

Although governments, donors and non-governmental organizations spend a lot of resources on health workers and health systems, there is a general feeling that such investments could produce better benefits than they currently do, if the systems used to manage and support health workers are also improved and strengthened.

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The way health workers are recruited, managed and supported in the delivery of both ART and general health services is central to the quality of services that they are able to deliver. A modern and responsive HRM system that is managed by HR-qualified professionals can work to ensure that staff are treated fairly (salaries, benefits, promotion, training opportunities), receive orientation and know what they are supposed to do (job descriptions), get timely feedback (supervision and performance review), feel valued and respected, and have opportunities to learn and grow on the job.

The reality in most public health sector organizations in developing countries is that HRM is treated in a fragmented manner. For example, most MoH in sub-Saharan Africa have limited or no authority in key personnel areas such as setting salary levels, determining and implementing disciplinary procedures, recruitment and promotions and establishing an attractive and equitable career path that can help with retention. Moreover, the fracture of these key HRM functions is inherent in the government structures themselves. In Kenya, for instance, the Public Service Commission works closely with the Directorate of Personnel Management in the Office of the President (a different entity) to define jobs for all established positions within the civil service and determine qualifications and salary levels; the Ministry of Finance controls and determines the overall budget.

A review or assessment of how the human resource function is currently configured and organized to recruit, manage and support HCWs within a country is an important first step in working with a particular country to help scale up and sustain ART coverage.

**Challenges in Using Task Shifting as a Strategy to Overcome a Shortage of HCWs**

Task shifting is intended to improve the efficiency of the current health care workforce through a more rational division of tasks between various cadres of health workers. It does not always imply a simple transfer of tasks to a lesser-qualified health worker and can be used as a temporary or permanent solution to workforce shortages.

While task shifting can offer real benefits in scaling up HIV/AIDS coverage for universal access, the literature review highlights a number of significant implementation challenges or potential obstacles that need to be considered. These include:

- Support in the form of supervision and training for those health workers receiving the new tasks is often inadequate.
- New cadres, especially at the community level at not linked to the formal health care system.
- Inadequate buy in or support from the professional associations that represent the health care workers receiving the new or additional tasks.
- A failure to address key questions regarding the regulation of practice. For example whether the change in role between cadres is a short or long term change.
The approach taken by the Ministry of Health in Ethiopia offers examples of “better practices” when attempting to implement task shifting as part of scaling up HIV/AIDS programs. Firstly, task shifting was implemented as part of a larger reengineering of seven core processes in the health system, and therefore was not viewed as a stand-alone initiative. Secondly, the reintroduction of the mid level health officer position and movement of tasks to this cadre was supported by a well developed and comprehensive curriculum and accelerated program for nurses to upgrade to the new health officer cadre.

Maximize the Productivity of Existing HCWs

Many of the studies included in this literature review describe the binding constraint to increasing ART coverage as not drugs, adequate facilities or laboratory equipment, but a lack of HCWs. These studies also highlight the fact that the number of HCWs, unlike other inputs cannot be increased quickly because of the long educational and training requirements. Examining and maximizing the productivity or output of existing HCWs is therefore a critical step in any effort to scale up ART coverage.

For example, two recently conducted studies on mainland Tanzania and Zanzibar revealed that on aggregate, health workers spent only 55% – 60% of their time performing productive activities. These observational time and motion studies point to a potential productivity gain of approximately 20 – 25%, or stated differently, an extra day per week of output from existing health resources. It is important to note that productivity in these studies examined how health workers “utilized” their time between a predefined set of productive versus unproductive tasks. Examples of productive activities include providing direct patient care, preparing for a patient consultation, attending training, etc., while unproductive tasks included waiting for patients, unexplained absences, etc.

Clearly the findings from these and other similar studies point to a significant and exciting opportunity to improve the output and utilization of existing health workers and in doing so help reduce the current health worker deficit. While factors such as poor infrastructure, inadequate supplies and equipment directly impede health worker productivity and motivation, current development programs in mainland Tanzania and Zanzibar – as well as extensive literature research, reveal an array of other factors that directly impact health worker productivity and performance. Significantly, many of these “productivity factors” are small, inexpensive, district and facility level interventions that when “bundled” together and carefully implemented can positively impact health worker productivity, motivation and importantly retention – at a relatively low cost. These productivity factors can be broadly categorized as follows:

- Internal Factors – level of staff participation in decision making, work planning and allocation procedures, effective team work and quality of communication between staff.
- Patient Management & Community Mobilization – clearly displayed facility service hours, effective patient referral processes, quality of HCW – patient communication, effective patient flow management, ability of the facility to adjust to changes in the service delivery environment.
• HRM factors – use of non-monetary incentives, in-service training opportunities, clear job expectations, established mentoring/coaching programs, staff recognition, new staff orientation programs, quality of supervision between the facility and district levels, management skills of facility in-charge staff.

Any recommendations or guidelines for scaling up HRH toward increased ART coverage and for countries working toward addressing their HRH needs should include an assessment of how existing health workers are being utilized and how the health system in which they work can be strengthened to maximize their productivity. Many of the factors associated with improving health worker productivity are also associated with motivation, job satisfaction, and ultimately decisions to leave or remain in the health system.

Next Steps

This literature review represents Phase 1 of the Task Forces overall mission to explore and address the HRH challenges associated with universal access to HIV/AIDS services and its impact on national health plans. It is intended that the findings and recommendations resulting from the literature review be used as input by the Task Force toward accomplishing the following stated goals:

• Develop evidence based recommendations for a global strategic direction to guide the process and approaches needed to meet country level HRH requirements to achieve national targets for scaling up towards universal access that enhances other national health delivery systems

• Make strategic recommendations that will inform, contribute to and influence political and policy discussions and action at global, regional and country levels to address the HRH crisis to assist countries in implementing the recommendations.
Appendix A – Literature Search by Target Country

Ethiopia

Description: Ethiopia is currently one of the countries most seriously affected by HIV/AIDS, with the sixth highest number of infections in the world. This paper discusses how to combat this epidemic. As the country scales up HIV/AIDS services, increased attention is focused on identifying constraints to program expansion. One of the most important constraints is that of human resources. [from publisher’s abstract]


Description: To maximize program impact with current resources, integration of Family Planning into existing HIV/AIDS programs is a very cost effective and an excellent point of entry. This is a study of an intervention program focused on initiating and also strengthening existing integration of FP into functional VCT, ART and PMTCT sites. The intervention encompassed an orientation on integration benefits to heads of health facilities; identification of challenges of integration and drawing of plan of action on how to overcome the challenges and improve integration. Major challenges identified were related both to health workers, such as high workload, staff burnout and turnover, as well as to efforts in scaling up of facilities operations to adequately incorporate integration activities. [from abstract]

Cambodia

Description: This document evaluates the Continuum of Care service delivery model established to address the problem of proving care and ART treatment to those suffering with HIV. The study documents the elements of the service delivery model including the focus on linkages between clinicians and the community and details the district-based success of the program.

Description: This assessment evaluates the RACHA program in Cambodia which was intended to strengthen the capacity and sustainability of the public and private sectors to deliver quality reproductive health and child survival services. The five technical intervention areas were birth spacing, STD/HIV prevention, safe motherhood, childhood diarrheal diseases and micronutrient deficiencies. One of the key intermediate results identified within these areas was improved human resource capacity to address these issues. [adapted from author]

Haiti


Description: The Ministry of Health and Population collaborated with the International Training and Education Center on HIV over a period of 12 months to create a competency-based HIV/AIDS curriculum to be integrated into the 4-year baccalaureate programme of the four national schools of nursing. Using a review of the international health and education literature on HIV/AIDS competencies and various models of curriculum development, a Haiti-based curriculum committee developed expected HIV/AIDS competencies for graduating nurses and then drafted related learning objectives. The committee then mapped these learning objectives to current courses in the nursing curriculum and created an “HIV/AIDS Teaching Guide” for faculty on how to integrate and achieve these objectives within their current courses. The curriculum committee also created an “HIV/AIDS Reference Manual” that detailed the relevant HIV/AIDS content that should be taught for each course.


Description: OBJECTIVE: To scale-up a successful HIV/AIDS treatment project and provide comprehensive care to an entire Département du Centre (population 550 000) in rural Haiti, thereby demonstrating that community-based treatment of HIV is feasible and highly effective in resource-limited settings, and serving as a successful model for others to replicate. PARTICIPANTS: In the Département du Centre of rural Haiti comprehensive HIV and tuberculosis treatment is provided free of charge to anyone who presents for care. All those who meet clinical enrolment criteria are treated with highly active antiretroviral therapy (HAART). INTERVENTION: HAART was provided in the context of a comprehensive programme of HIV, tuberculosis (TB), sexually transmitted disease (STD) of the project, treatment and prevention, and women's health services at four sites in the first year. At each site, the medical facility was renovated, additional staff were hired as needed, and a network of accompagnateurs (community health workers) was established throughout the surrounding villages to serve as a link with the community, and to provide directly observed treatment (DOT).
RESULTS: In the first year of programme scale-up, over 8000 patients were followed for HIV, and over 1050 were treated with DOT HAART. Adherence to HAART was very high, and clinical outcomes were excellent: all patients responded with weight gain and improved functional capacity, and fewer than 5% required medication changes due to side effects. Viral load was tested among a subset of patients showing that 86% had undetectable viral loads.

CONCLUSION: Community-based care of AIDS has been highly effective in rural Haiti. With more international financial support for HIV/AIDS treatment in resource-limited settings, there should be no barriers to access to life-saving HAART for those who need it most.


Description: Initial ART treatment in Haiti costs approximately $US 1,000 per patient per year. With generic first-line antiretroviral drugs, only 36% of the cost is for medications. Patients who change regimens are significantly more expensive to treat, highlighting the need for less-expensive second-line drugs. There may be sufficient health care personnel to treat all HIV-infected patients in urban areas of Haiti, but not in rural areas. New models of HIV care are needed for rural areas using assistant medical officers and community health workers.


Description: The main objections to the use of antiretroviral therapies in less-developed countries have been their high cost and the lack of health infrastructure necessary to use them. We have shown that it is possible to carry out an HIV treatment programme in a poor community in rural Haiti, the poorest country in the western hemisphere. Relying on an already existing tuberculosis-control infrastructure, we have been able to provide directly observed therapy with highly-active antiretroviral therapy (HAART) to about 60 patients with advanced HIV disease. [author’s description]


Description: Fact sheet on status of Haiti in gaining universal access

Kenya


Presentation: http://www.hrhresourcecenter.org/node/1084

Description: This presentation is not the presentation necessarily given at the above conference. This presentation was given as part of the ECSA Regional Health Ministers’ Conference in 2003, but it describes the same study. It describes an HIV/AIDS impact assessment done in Kenya and gives the detailed findings of the study.

Description: This report presents a comprehensive analysis of the human resources for health (HRH) currently available and required to reach the targets set by the President’s Emergency Plan for AIDS Relief and the Millennium Development Goals (MDGs) in both the public sector and the faith-based organizations (FBOs) in Kenya. A stratified convenience sample of health facilities at all levels of care (primary, secondary, tertiary) in each of the eight provinces was selected for the assessment. Detailed information on human resources and provision of services related to HIV/AIDS, tuberculosis (TB), malaria, maternal health, and child health was collected.


Description: This survey is the first attempt to examine the preparedness of the health system to implement guidelines for HIV testing in clinical settings, and to provide comprehensive AIDS management. This includes availing HIV testing in clinical settings to both adult and pediatric patients, and providing treatment for HIV disease. The survey also examines the working environment in health care facilities, with an emphasis on HIV infection control and access to post-exposure prophylaxis for health workers themselves.

**Mozambique**


Description: This report focuses on the impact of human resource shortages witnessed by MSF teams in four southern African countries – Lesotho, Malawi, Mozambique, and South Africa. While the focus is largely on nurses in rural areas, it should be acknowledged that health staff is lacking across the spectrum – from doctors to laboratory technicians to pharmacists – at all levels of care. In all these cases the need for access to ART, as well as other health needs, is outstripping human resource capacity. [from introduction]


Description: One of the most significant challenges in fighting the AIDS epidemic in Southern Africa is securing the health care workforce to deliver care in settings where the manpower is already in short supply. The authors produced a demand-driven staffing model based on treatment protocols for HIV-positive patients that adhere to Mozambican guidelines. The model can be adjusted for the volumes of patients at differing stages of their disease, varying provider productivity, proportion who are pregnant, attrition rates, and other variables. The planning tool proposed could lead to more realistic and appropriate estimates of workforce levels required to provide high-quality HIV care in a low-resource settings.

Description: Drug Resources Enhancement against AIDS and Malnutrition (DREAM) was created by the Community of Sant’Egidio to fight AIDS in sub-Saharan Africa. The project takes a holistic approach, combining Highly Active Anti-Retroviral Therapy (HAART) with the treatment of malnutrition, tuberculosis, malaria, and sexually transmitted diseases. It also strongly emphasizes health education at all levels. DREAM aims to achieve its goals in line with the gold standard for HIV treatment and care.

Elements of the DREAM model for a health systems response to HIV:

- optimal use of personnel,
- intensive training,
- scaling-back investment in institutional development and investing instead in a stronger field presence,
- intensive use of technology and innovative methods in the fields of communication, informatics and diagnostics.


Description: This is not a study, but contains a lot of information about what Mozambique is doing to scale up HIV/AIDS services. Of particular interest is page 78 (79 of the PDF), where there is a brief summary of HR related challenges and progress made.

**Zambia**


Description: This study documents the contribution made by religion and religious entities to the struggle for health and wellbeing in Zambia and Lesotho, in a context dominated by poverty, stressed public health systems and the HIV/AIDS pandemic. By mapping and understanding these Religious Health Assets (RHAs), the study calls for a greater appreciation of the potential they have for the struggle against HIV/AIDS and for universal access and offers recommendations for action by both public health and religious leaders at all levels. Through respectful engagement these assets have the potential to increase in strength and value and become more effective in the long-term sustainability, recovery and resilience of individuals, families and communities. [Publisher's description]

Description: Fact sheet on status of Zambia in gaining universal access.

Other


Description: Despite recent international efforts to scale-up antiretroviral treatment (ART), more than 5 million people needing ART in low- and middle-income countries (LMIC) do not receive it. Limited human resources to treat HIV/AIDS (HRHA) are one of the main constraints to achieving universal ART coverage. We model the gap between needed and available HRHA to quantify the challenge of achieving and sustaining universal ART coverage by 2017. [from abstract]

Mali

Nothing found

Sierra Leone

Nothing found
Appendix B – Second Literature Review (July 2010) on HIV Prevention Workforce

Question: What has been written about the HIV Prevention Workforce?

Sites searched

- Development Experience Clearinghouse
- Google
- HRH Global Resource Center
- PubMed
- World Health Organization
- UNAIDS Website
- Human Resources for Health Journal

Terms searched

- HIV Prevention
- Human Resources for Health
- Health Workforce
- Health Manpower
- Health Workers
- Health Personnel
- PMTCT
- Counseling and Testing
- Male Circumcision
- Condom Promotion
- Task Shifting
- Community Health Workers
- Prevention vs Treatment/ART

Summary

Many authors and organizations have written about the need to balance available HIV/AIDS funding and resources between prevention and treatment efforts. In some countries, funds marked for prevention have remained flat, increased modestly or even decreased while those for treatment have risen drastically.
HIV prevention efforts have simply not kept pace with the large increases in the availability of ART to those already infected. For every one person who began ARV in 2006, six new infections occurred (Global HIV Prevention Working Group, 2007). Effective prevention efforts could prevent 28 million new infections over a ten year period, and several authors argue that while treatment should of course be provided, prevention efforts ultimately save more lives than focusing on the treatment of those already infected (Henderson et al., 2009).

The Global HIV Prevention Working Group lists the following prevention strategies as those proven to be effective at reducing the transmission of HIV (2007).

**Preventing Sexual Transmission**

- Behavior change programs (to increase condom use, delay initiation of sexual behavior in young people, and reduce the number of partners)
- Condom promotion
- HIV testing
- Diagnosis and treatment of sexually transmitted infections
- Adult male circumcision

**Preventing blood borne transmission**

- Provision of clean injection equipment to injection drug users
- Methadone or other substitution therapy for drug dependence
- Blood safety (including routine screening of donated blood)
- Infection control in health care settings (including injection safety, universal precautions, and antiretroviral prophylaxis following potential HIV exposure)

**Preventing mother-to-child transmission**

- Primary HIV prevention for women of childbearing age
- Antiretroviral drugs
- Prevention of unintended pregnancy in HIV-positive women
- Breastfeeding alternatives
- Caesarean delivery (in the case of high maternal viral load)

To be effective, these strategies require available, trained and supported human resources for health (HRH), and organizations such as UNAIDS have identified the limited human capacity to manage and deliver HIV programs as a barrier to effectively scaling up prevention efforts as well as treatment and care efforts (UNAIDS, 2005).
Much has been written on the human resources for health (HRH) issues and solutions for scaling up HIV treatment and care in developing countries, with a particular emphasis on ART and task shifting. A recent systematic review has shown task shifting to be an effective strategy for addressing shortages of HRH in treatment and care by shifting treatment and care to non-physician health workers (Callaghan et al., 2010). Reviewing the treatment literature, one gets a good sense of the cadres and roles of health workers involved in providing treatment and care, from hospital based physicians overseeing ART to nurses and clinical officers managing routine treatment and monitoring tasks to the laboratory workers needed for testing to community health workers who are performing a variety of roles ranging from adherence monitoring, palliative care, referral and in some cases even provision of ART. HRH issues related to support, supervision, clear scopes of work, recruitment, retention, policy and remuneration, to name a few, have also been documented within the context of HRH and HIV treatment (Callaghan et al., 2010; World Health Organization & UNAIDS, 2006; Hermann et al., 2009).

However, the same focus on HRH is not apparent in the HIV prevention literature. The cadres and roles of health workers involved with prevention is far more ranging than those for the more discreetly defined tasks of treatment and care. What constitutes HRH for HIV prevention? The Centers for Disease Control and Prevention, Division of HIV Prevention (CDC/DHAP), on a website, defines the HIV Prevention Workforce as “key staff from health departments, community-based organizations, public and private hospitals, clinics, social service centers and other sectors that contribute to reducing risks for either contracting or transmitting HIV and other sexually transmitted diseases.”

In the background section of an August 2009 RFP for an HIV Prevention Workforce Analysis and Mapping, UNAIDS states that “HIV prevention is complex and, therefore, is implemented by many medical and nonmedical players, ranging from individual citizens in their own right to highly trained HIV specialists. The workforce conducting HIV prevention activities comprises a range of vocations operating in different industry settings, such as counselors in VCT clinics, primary care nurses in medical wards, condom and other commodity procurement and logistics specialists, teachers in schools, and peer educators at the workplace. It also includes social, behavioral and political scientists, human rights campaigners, media broadcasters on the radio, community health workers in their regions, and health promotion and family planning practitioners who have added on HIV prevention over the years. Unlike the clinical workforce that is well defined with a clear accreditation system, the prevention workforce is not always well defined, and frequently not adequately scaled and trained. This affects the strategic positioning and accountability of HIV prevention at the country level, as well as the coordination, consistency and quality of HIV prevention services.”

In the RFP, UNAIDS was justifying the need for prevention workforce analysis and mapping, and a concentrated scan of the literature confirms this need. HRH issues and strategies are certainly included to some extent in the HIV prevention literature, but not analyzed or mapped within the broader HRH for HIV prevention context. For example, articles and studies describing HIV prevention training needs for a specific cadre of health worker (e.g. mental health workers, community health workers, counselors, nurses) about a specific aspect of HIV prevention (e.g. counseling and testing, PMTCT, etc.) abound (Collins et al., 2006; Hiner et al., 2009). The integration of HIV prevention with other health services has also been explored in specific contexts (Yoder and Amare, 2008).
As with treatment, task-shifting and the use of community health workers have been identified as promising strategies for extending specific prevention services such as voluntary counseling and testing, infant feeding counseling, syndromic treatment of STIs and condom distribution (Sanjana et al., 2009; Bunmi and O’Grady, 2001; Daniels et al., 2010; Ward et al., 2003). Some articles point out the need for Public Health Leaders in order to run effective large scale prevention initiatives (Jones et al., 2009). Reviewing these types of specific articles about narrow aspects of prevention, HRH issues similar to the ones in the treatment and care literature start to emerge – supervision, training, addressing commodity supply and health systems strengthening, trainee selection criteria, retention, etc. (Yoder and Amare, 2008). Noticeably absent, however, are studies describing the HRH needs, priorities and strategies for a comprehensive community, national or regional prevention strategy.
References


Launched in 2006, the **Global Health Workforce Alliance** is a partnership dedicated to identifying and coordinating solutions to the health workforce crisis. It brings together a variety of actors, including national governments, civil society, finance institutions, workers, international agencies, academic institutions and professional associations. The Alliance is hosted by the World Health Organization.

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