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Retention: health workforce issues and response actions in low-resource settings

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Retention: health workforce issues and response actions in low-resource settings

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Abstract: This paper seeks to provide a compelling evidence base to reveal the factors that lead to high turnover and to promote tested responses to retain health workers. The literature researched is presented to support country-level action.

Section 1 makes the connection between human resources and health system performance and provides insight on the relevance of this paper's focus. Section 2 reviews and analyzes the complexity of the evidence about worker shortages, especially the "push factors" that trigger turnover, with an emphasis on out-migration. Section 3 offers an in-depth examination of some country-led actions to address turnover and evidence on approaches to retain a dedicated and motivated workforce. Section 4 summarizes conclusions from the literature review and identifies areas for Capacity Project attention to support country-level retention initiatives.

Anecdotal findings suggest health care managers and organizations should examine three opportunity areas—monetary compensation, work environment and strategies to manage migration—in determining which approach or combination of approaches will deliver the greatest potential impact on maintaining a qualified workforce.

Keywords: Health workforce, shortage, turnover, vacancy rate, out-migration, actions to reduce turnover, emerging evidence on retention approaches, manage migration, monetary compensation, work environment, sub-Saharan Africa, resource-constrained countries, low-resource settings

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Contents

Glossary of terms (for further review and refinement)

Health worker shortage – A condition in which there is a significant gap between the number of health workers needed to deliver care and the number in post available to provide services (can be national or sub-national)

Job satisfaction – A term used to describe how content an individual is with his or her job; a variety of factors can influence a person's level of job satisfaction (e.g., level of pay and benefits, perceived fairness of the promotion system within an organization, quality of working conditions)

Leaver – A health care worker who makes a voluntary decision to leave his or her post to accept another post

Motivation – Having an incentive to initiate and sustain effort toward a goal

Out-migration – Outflow of health professionals to other countries, usually from poorer to richer countries

Retention – Maintaining personnel within the health system

Return on investment – The amount of value received relative to the amount of money or resources invested

Turnover – Records job moves, including transfers

Vacancy rate – The extent to which an organization is unable to recruit staff to fill open positions

Section 1: Introduction

1.1 The health workforce: a critical component for health system performance

For decades, governments in low- and middle-income countries have worked toward responding to national agendas that seek to improve health care services for poor people. Many have engaged in health sector reform programs that include decentralization to bring quality health care as close to the community as possible.

However, obstacles have often frustrated governments' efforts to implement priority health programs. Reforms have imposed additional stress on already fragile health systems characterized by weak infrastructure, inadequate management capacities, especially at the district level, perennial shortages of drugs and equipment and a lack of human resources required to deliver care.

Within this context of structural constraints, low- and middle-income countries have signed onto the Millennium Development Goals (MDG) and initiatives to tackle the resurgence of communicable diseases such as tuberculosis and malaria as well as the HIV/AIDS pandemic (*Dovlo, 2003*).

As governments reassess their reform programs against meeting the MDG by 2015, there is growing realization that health system performance is inextricably bound to the dedication and skill of the workers the system is able to attract and retain. Any reform program that will lead to achieving the MDG and initiatives must aim to have the right workers in the right numbers, in the right places and sufficiently motivated to deliver quality services.

Nearly all developing countries face the multi-faceted problem of worker shortage, linked to high turnover, skill mix imbalance and mal-distribution (*Chen et al, 2004*). In some countries the shortage situation has reached crisis level, due in part to weak training capacity, hiring freeze policies and out-migration of health workers. HIV/AIDS has compounded the human resources crisis from both the worker demand and supply perspectives. In generalized epidemic situations, the incoming supply of new health workers has decreased as workers themselves have become infected, fallen sick and died from AIDS. As mortality rates increase, staff remaining in post can become demoralized, leading to increased absence rates. Some may seek alternative career paths within and outside their countries, resulting in increased workload for those workers who remain in post *(Buchan and Calman, 2004).*

Many countries will soon be putting strategies in place to respond to the Abuja (2004) and Oslo (2005) global forums' call for action to tackle the human resources crisis in order to meet MDG. One major issue is out-migration. Health officials can no longer pay superficial attention to the increasing number of health workers acting on decisions to cross borders. Decision makers in the health sector are urged to apply on-target solutions to address the root causes for leaving so that valued and talented workers will opt to stay.

1.2 The focus of this paper

This paper draws from literature gathered through an intensive search of the World Wide Web and targeted websites and databases, including WHO, USAID, World Bank, FHI, Eldis Gateway to Development, Joint learning Initiative, MEDLINE and POPLINE and country-level websites.

The paper was prompted by the need for more in-depth synthesis of available literature to inform the evidence base from which retention interventions can be built. The specific aims of this paper are to 1) better understand the dynamic process leading to deficits in the health workforce by building on existing information about the magnitude of and causes for worker shortage and predictors of turnover due to out-migration, 2) examine country-led actions to retain a dedicated and motivated workforce, including emerging evidence on tested retention approaches and 3) use evidence generated from the literature review to propose a retention framework and other job aids (retention chart, case studies) as quick retention reference guides suitable for resource-constrained contexts.

Section 2: Reviewing the evidence

2.1 The magnitude of worker shortage

The combined number of health workers employed in the public, private, not-for-profit and for-profit sectors constitute a country's national health workforce. The number of health workers is an indicator of a country's ability to meet the health care needs of its people. Many resource-constrained countries admit to an increasing inability to meet the needs of the poor, who are typically the most difficult segment of the population to reach in a worker shortage situation.

There are various approaches for defining worker shortage in health care. One basic approach is to monitor trends of the available number of health workers over time, to find out whether numbers are increasing or decreasing. Tanzania reports a 42% decrease in workforce strength between 1998 and 2002. During this period the available number of health workers dropped from 67,642 to 39,402 (*Mliga, 2004)*. Shortage can also be described relative to norms such as the appropriate number of physicians for the general population *(Zurn et al, 2002*). In contrast to the WHO recommended standard of one doctor per 5,000 people, ten African countries have on average one doctor per 30,000 or more people (*Schrecker and Labonte, 2004)*.

Nurse and doctor to population ratios hide considerable variations among and within African countries. In South Africa there are 388 nurses and midwives to serve 100,000 people; there are 85 in Ghana and 26 in Malawi *(WHO, 2004).* Ghana has a doctor/population ratio of 1:17,489, compared to 1:300 for the United Kingdom *(Braine, 2005*). Concentration of health workers in urban areas also creates an imbalance in numbers and skill mix. In Angola, 85% of health care professionals work in areas where only 35% of the population lives (WHO, 2005, *HRH tool kit*). Kenya's capital, Nairobi, has one doctor per 500 people, while remote Turkana district has one doctor to 160,000 people *(Huddart, 2003)*.

Experts make use of other indicators such as turnover and vacancy rates to further understand the magnitude of the worker shortfall so that appropriate recruitment and retention strategies can be identified and tried. *Turnover* records job moves, including transfers. *Vacancy rate* is the extent to which an organization is unable to recruit staff to fill open positions (*Buchan and Calman, 2004*).

Reported vacancy rates

- South Africa: One third of all public health posts in South Africa unfilled *(Lehmann and Sanders, 2004*)
- Zimbabwe: Out of the 1,530 established positions for medical doctors, only 687 are filled (vacancy rate of 55%)
- Malawi: Vacancy rates of 36% for doctors in the public health service (*Schrecker and Labonte, 2004*)
- Ghana: Vacancy rates reached 42% for public-sector physicians and 72.8% for specialists *(WHO, 2003, International migration)*

Increasing vacancy rates over time almost certainly reflect high turnover. For example, in Ghana, the vacancy rate for nurses doubled from 28% to 57% between 1998 and 2002 (*Buchan and Dovlo, 2004).* To address turnover it is essential to understand the factors associated with job

moves. Selected source-country data sets are now providing insights into the cadre, age, sex, and years of experience of those who are leaving. In Malawi, the highest rates of resignation are found among medical officers (5.4%), lab technicians (5.1%) and clinical officers (3.6%) (*Malawi National Health Plan, 1999-2004*). Data show a high dropout rate for female nurses in Zimbabwe with more than 15 years of experience (*Standing and Baume, 2000*). The majority of nurses who left South Africa in the mid 1990s were young, registered nurses in their early- to mid-twenties *(Naidoo, 2000).*

2.2 Causes for worker shortage – weaknesses in the health system linked to training and education, recruitment and retention

Human resources experts argue that shortages are a symptom of inadequate policies related to the availability of new entrants to the health workforce (the supply system) and to recruitment and retention of health workers *(Braine, 2005).*

2.2.1 Training and education – the supply system factor

Education and training institutions in the health sector are expected to meet the supply needs for health systems by producing health workers in adequate numbers and with the right training levels and skill mix. The relevant literature on sub-Saharan Africa discusses several aspects of the education and training systems that contribute to the shortfall in meeting this expectation. Typically, training systems in resource-constrained countries generate higher-level providers rather than middle- or lower-level providers who are more suitable for delivering services in primary care settings. There are 64 medical schools in Africa but only 38 nursing schools *(WHO, 2003, World Health Report).* Moreover, most undergraduate training takes place in tertiary care settings and does not expose students to conditions in rural health facilities adequately to enable them to meet the challenges of practicing in primary care settings *(Habte et al, 2004).*

Habte, Dussault and Dovlo underscore the de-link between training curricula content and the realities of service delivery. The experts are of the view that continuing education programs are poorly developed for quick response to emerging conditions. For example, the response to HIV/AIDS has been a series of uncoordinated and poorly planned in-service courses not linked with pre-service programs. From Dovlo's perspective, inappropriate curricula content may also contribute to job dissatisfaction. In Ghana, in the mid-1990s, the teaching of diseases and conditions as applicable to developed countries was debated as a likely contributing factor for out-migration *(Dovlo, 2003).*

Insufficient and poorly funded pre-service education facilities compound efforts to increase production of workers. While Swaziland needs to improve the supply of current and new cadres to respond to the HIV/AIDS pandemic, the country has no medical school and the Institute of Health Sciences, which trains most health professionals, requires substantial improvements in infrastructure, equipment, instructional resources, curricula review and capacity building for faculty (*Capacity Project, 2005*).

Concern has also been expressed about the shortage of teachers in health training institutions and the qualitative and quantitative imbalances that occur as a result of teacher shortages. Out of an annual average of 2,400 clinical officers in Tanzania who attempt the upgrade selection

exams to become Assistant Medical Officers, only 160 (7%) are successful because there are too few teachers available for course instruction (*Mliga, 2004*).

2.2.2 Recruitment – the civil service regulation factor

In many situations, high vacancy rates reflect inability rather than unwillingness to fill posts, largely due to International Monetary Fund conditionality to improve on the efficiency of the civil service. The combined effect of accelerated retrenchment, voluntary separation and hiring freezes has led to downsizing of workforces without achievement of the right balance of skilled workers as was the original intent. The granting of separation rights led to a loss of 1,400 professional workers in Zambia *(Huddart, 2003).* Malawi reports a high level of nursing vacancies but is not able to recruit 1,200 unemployed nurses because of hiring freeze policies (*Bulletin of the WHO, 2004).*

2.2.3 Retention – the out-migration factor

Imbalances are created when health workers switch between sectors (public, private, NGO, faith-based) in the same country, but at least the health sector has not lost these workers. It is of far greater concern when workers choose to emigrate, leading to wastage and shortage. This section examines in detail the out-migration aspect of worker movement.

Out-migration is a central element in the current debate regarding the causes and consequences of excessive turnover in the health workforce. In spite of the heightened interest in the subject, a serious lack of data on migrant flow makes measurement of the extent of out-migration difficult and creates a problem in determining the magnitude of wastage. Typically, migration data sets are incomplete, inaccurate and do not compare well across countries because of inconsistencies in health worker categories. Flaws in the available data limit governments' ability to manage health worker migration correctly and restrict international comparisons of the phenomenon (*Buchan et al, 2003).* Health officials often tend to act when the numbers leaving are perceived to be high. However, it is also a problem when the numbers leaving the system are too few, as low turnover causes career blockages, particularly in tight labor market situations *(Bevan, 1990).*

Existing data from source and receiving countries nonetheless reveal that out-migration is on the rise. Of over 600 medical graduates trained in Zambia since independence only 50 remain *(Huddart, 2003)*. The February 2005 edition of the *Bulletin of the WHO* reports that there are more Ghanaian doctors working outside Ghana than in the country itself. The situation is not very different for South Africa. A total of 52,949 doctors and nurses were working in the public sector in South Africa in 2001. In that same year, another 23,407 South African-born workers were practicing a medical profession in an Organisation for Economic Co-operation and Development country (*Lehmann and Sanders, 2004)*. Out of 5,334 Africans practicing in the US as physicians, 4,587 (86%) originate from only three countries: Nigeria, Ghana and South Africa *(Hagopian et al, 2004).*

A pattern is also emerging in which out-migration occurs not only due to migration from poor to rich countries but also migration from poor countries to less poor countries within regions. For example, there is now a steady flow of health workers from Ghana, Kenya, Malawi and Zambia to South Africa and Botswana (*Schrecker and Labonte, 2004*).

2.3 Consequences of turnover

There have been attempts to analyze the consequences of out-migration, including the loss of investments for governments already struggling with budget constraints. According to the World Bank, countries stand to benefit from remittances by migrant workers to family and friends. Remittances wired by migrant workers through the banking system alone amounted to approximately $90 billion in 2003, $88 billion in 2002 and $72.3 billion in 2001 (*Bulletin of the WHO, 2004)*. The remittance value of $72.3 million for 2001 is reported to be considerably higher than the value of official development assistance (*Schrecker and Labonte, 2004)*. Dovlo and Martineau argue that remittances by health professionals are limited and do not necessarily offset the lost investment in their education. On the other hand, the lost investment in training for source countries may well translate to gains for destination countries. The US saved 3.86 billion as a result of importing 21,000 Nigerian doctors (*EQUINET, 2004).*

A number of studies based in the developed world context have also reviewed the major consequences of turnover, to argue the case for strategic planning for retention. In the health care industry in the United States, centers with high turnover had 36% higher patient costs than low turnover centers *(Finnigan, 2005).* Table 1 summarizes some developing country experiences of the consequences of turnover, including turnover due to out-migration.

Table 1 – Negative impact of turnover on an organization

Consequences (*Phillips and Connell, 2003*)	**Evidence**
High financial cost – Turnover has a huge economic impact on the organization, both in direct and indirect costs. Cost components include separation costs, temporary replacement costs and recruitment and selection costs.	Analyses done by Schrecker and Labonte reveal that a single recruitment effort by the Canadian province of Alberta led to the emigration of doctors from South Africa whose training cost the South African government $12.6 million. Ghana has lost around $60 million in investment in the training of health professionals *(Dovlo and Martineau, 2004)*.
Threatens organizational survival – Recruiting and retaining the appropriate talent can determine the success and failure of the organization.	In Zimbabwe, high vacancy rates resulted in the closure of or reduced access to clinics and wards *(Buchan and Calman, 2004)*.
Productivity losses and workflow interruptions – A person who exits leaves a productivity gap.	Of 190 registered nurses at a tertiary hospital in Malawi, 114 (60%) left between 1999 and 2001 *(Martineau et al, 2002)*.
Service quality may be compromised – Turnover of frontline workers is often regarded as the most serious threat to providing excellent client service.	In Ghana, focus group respondents told of instances in which a single professional nurse was required to oversee a full ward of some 20 to 30 beds with a couple of enrolled and untrained nurses *(Buchan and Dovlo, 2004)*. In Malawi, only two nurses were available to staff a maternity ward of 40 births a day *(Buchan and Calman, 2004)*.
Loss of expertise – Sometimes an entire product/service delivery line may suffer because of a worker departure.	The center for spinal injuries in Boxburg,, South Africa was the referral center for the entire region. On the same day in 2000 the center's two anesthetists were recruited by a new spinal injuries unit in Canada causing a closure of the Boxburg facility *(Martineau et al, 2002)*.
Poor job satisfaction – Remaining employees are forced to assume the workload of departing employees.	The workload for nurses in sub-Saharan Africa has increased significantly because of HIV/AIDS. One study of nurses in Zaire in the 1990s reported a doubling of effort to care for AIDS patients. Another study in rural South Africa reported a significant increase in nurses' absenteeism from work due to burnout from excessive workload related to HIV/AIDS *(Buchan and Calman, 2004)*. A nurse who left South Africa for the US in 2000 cited working conditions as a push factor. "I never thought I would be one of the nurses leaving. I criticized many of my colleagues when they left. Then I found that, as nurses were leaving, those of us who were left had to carry the load. In my hospital we had one nurse to 18 beds; there were about 500 outpatients a day and only 14 to 15 nurses allocated to this section. How can we give good care in these conditions? On top of all this nurses are constantly criticized and picked on." *(Naidoo, 2000).*

2.4 Predictors of turnover and out-migration

For health managers to feel empowered to take steps to reduce uncontrolled turnover, and in particular turnover due to out-migration, it is important to understand why people make a decision to cross borders. Careful analysis of the causes of out-migration will prevent a waste of time and scarce resources in trying out interventions with minimal chance for success. The literature distinguishes between factors that push workers from their home countries and factors that pull them into a new country *(Martineau and Dovlo, 2004; Buchan et al, 2003)*.

Experts agree that the interplay between push and pull factors is complex. Dovlo and Martineau cite findings from a 1981 WHO study that conclude that "no matter how strong the pull factors are of the recipient countries, migration only seems to result if there are strong push factors from the donor country." What is emerging from the literature is that poor monetary incentive schemes and unsatisfactory working conditions are likely the push factors causing workers to act on leave decisions. The push occurring because of dissatisfaction about pay is easier to understand, but the push because of dissatisfaction with the working environment is much more complex. Health workers might be dissatisfied with one or more attributes of the work environment. For example: working in rural locations with limited access to basic facilities, poor relationships between workers and their supervisors, inadequate equipment and supplies, lack of recognition for good work, stress due to heavy workload, gender-related issues, poor career development opportunities, safety and security concerns and HIV/AIDS protection, care and risk concerns (*Buchan and Calman, 2004*). Supporting evidence linking concerns related to monetary incentives and unsatisfactory working conditions with turnover is summarized in sections 2.4.1 and 2.4.2.

2*.4.1 Poor monetary incentive schemes*

Health workers are often willing to leave their posts because of higher pay incentives elsewhere. Junior doctors from Ghana and Zambia can expect to earn five times more if they emigrate to Lesotho, Botswana or South Africa. When a sample of health workers was asked what would make them remain in their home country, the majority in Cameroon (68%), Ghana (81%), South Africa (78%) and Uganda (84%) implied that an improvement in salary structures would be a good reason to stay (*Vujicic et al, 2004).* In Ghana, perceived fairness in monetary compensation schemes made a difference in stay/leave decisions. Disparities in the Additional Duty Hours Allowance (ADHA) levels for professionals appeared to have fueled nurse emigration. Nurses felt the disparity between ADHA for doctors and other health professionals was too high and this meant their efforts were not appreciated (*Dovlo, 2003*).

2.4.2 Unsatisfactory working and living conditions

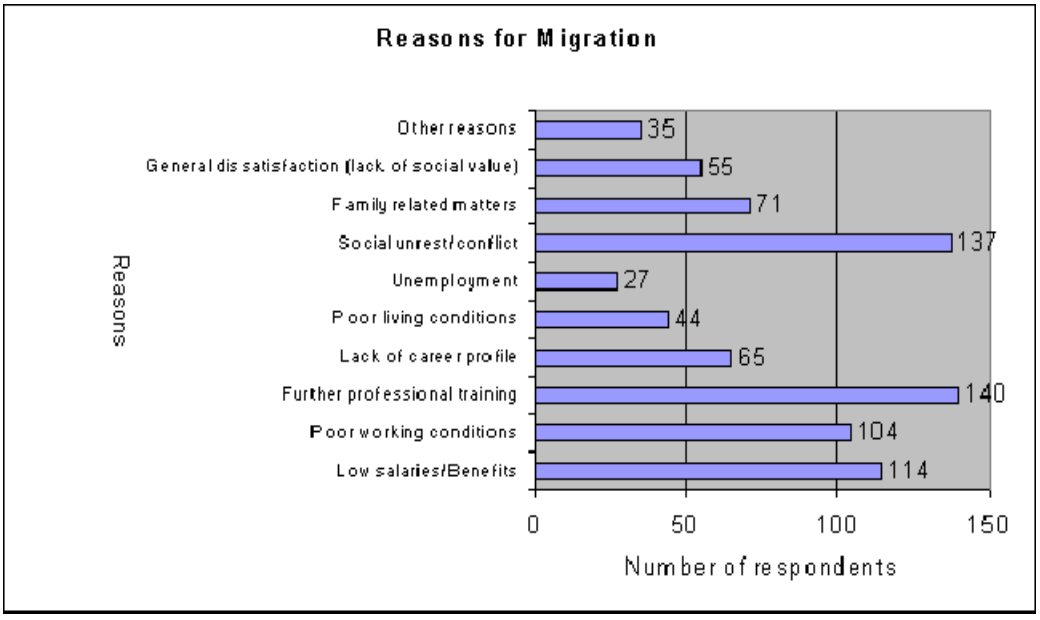
Many studies have shown that monetary compensation alone does not explain migration choices *(Buchan and Calman, 2004; Lehmann and Sanders, 2004; Schrecker and Labonte, 2004*). Very significant raises in allowances for nurses in Botswana seem to have had little effect in curbing migration (*Dovlo, 2003*). South African health professionals are more likely to cross borders when compared to Ugandan professionals, even though pay is lower in Uganda (*Lehmann and Sanders, 2004*). Unsatisfactory working and living conditions are increasingly recognized as important factors for health professionals moving within and between countries.

Generalized concerns about working conditions

Lehmann and Sanders suggest that deteriorating working conditions in the public sector are to blame for out-migration from South Africa, but do not indicate the specific conditions. Their conclusion nevertheless is consistent with a WHO study of six African countries that points to working and living conditions as a prominent cause for employee departure (Figure 1). In Ghana, 71% of health workers interviewed in destination countries mentioned living conditions and economic decline as the reasons for leaving their home country *(Vujicic et al, 2004).*

A 28-year-old African doctor working in the public sector who participated in a 2003 GTZ multi-country study lamented, "The lack of equipment and lack of drugs is very frustrating and depressing. You cannot do quality work. I have not yet lived up to my own ideal. It is hard under given external conditions to achieve one's goal."

Figure 1– Reasons for out-migration: WHO study of six sub-Saharan countries



Source: Lehmann U, Sanders D. Human Resources for Health in South Africa. Background and overview paper for JLI National Consultation; 3-4 Sep 2004; Cape Town, South Africa.

Weak performance management and leadership structures

Strong performance management systems that allow for open performance appraisals linked to performance objectives, supportive supervision and constructive feedback have been shown to contribute to improved productivity, worker satisfaction and improved quality of services. Performance appraisal systems in the public sector are generally weak (*Huddart, 2003*). For example, public sector employees in Guinea lack job descriptions, while those in Guinea Bissau are reported to be poorly supervised (*WHO 2005, HRH toolkit*).

Performance management systems for the public sector in Malawi are reported to have many weak aspects: the system is not transparent; invariably, the assessment of quality and quantity of performance is not linked to performance objectives; some staff lack job descriptions while others receive limited guidance at the work site because of weak supervisory systems *(MOH Malawi, 1999).*

Poor career prospects

Career prospects, or the lack thereof, are a major concern for nurses and doctors in Ghana. According to doctor discussants, career opportunities are limited and do not match the number of years invested for specialized training. Nurses "saw no future in working here" as no opportunities existed for professional upgrade *(Buchan and Dovlo, 2004).*

Gender-related concerns

The existence of sexual harassment and other forms of abuse and violence in the workplace has been acknowledged as a widespread problem since the 1980s. Sexual harassment and other forms of workplace violence against women have been documented in the health, agricultural, textile manufacturing and commercial/industrial sectors of various countries, including Bangladesh, Bulgaria, the Dominican Republic, Kenya, Mexico, Tanzania, Thailand, the UK and Ireland. Sexual harassment by a supervisor, colleague or union representative (including verbal abuse, touching, docking pay or demotion for refusal of sexual demands and rape) has been cited in studies as a reason for workers leaving jobs in the Dominican Republic, Kenya and Thailand. Those who "voluntarily" left jobs said they did so to escape continued pressure, though some left jobs through forced resignation or being fired by a harassing supervisor *(International Labour Rights Fund, 2002*). Gender-based discrimination and its effect on workforce attrition are clearly demonstrated in a case from the Sudan, where a requirement for overseas training for medical career progression created an obstacle for female doctors. The overseas training requirement was not attainable for two reasons: 1) cultural expectations that married women be accompanied by husbands during overseas training and 2) delay in completion of hospital experience—a pre condition for overseas training—because of competing family responsibilities *(Standing, 2000*).

HIV/AIDS protection, care and risk concerns

Health workers interviewed in Kenya cited fear of HIV infection and related opportunistic infections as underlying reasons for attrition. Forty percent of health worker absenteeism in Kenya and 60% in Malawi is related to illness *(CRHCS, 2004*). The majority of registered nurses in Malawi (69%) cite risky work environment as the most pressing issue in nursing today *(Standing and Baume, 2000)*. In South Africa, although health care professionals report satisfaction with protective measures against HIV, they experience stress and worry about the risk of HIV infection. The government of South Africa reported that between 1997 and 2001, 14% of its staff—mostly nurses—died of AIDS (*Buchan and Calman, 2004*). In Zambia, the death rate among nurses quadrupled between 1986 and 1991, reaching 3% per year. HIV/AIDS prevalence in midwives and nurses in Lusaka was 40% in 1991, with an estimated death rate of between 5% and 9%. Without treatment, up to half of the nursing workforce may die by 2008. By 2010, Botswana is estimated to lose 40% of its health workforce to AIDS if left untreated *(Cohen, 2002).*

Stress due to heavy workload

While the HIV/AIDS epidemic has increased the burden of work for providers, in some countries fewer workers are recruited due to government-wide hiring freezes. Care of terminally ill patients is emotionally draining and may result in burnout, increased absenteeism and departure from the profession. Health workers interviewed in Kenya cited increased workloads due to HIV/AIDS and occupational stress as among the underlying reasons for attrition (*CRHCS, 2004*). Over 10% of South African nurses were absent on sick leave between 1997 and 2001, due to stress on the job (*Buchan and Calman, 2004*). As a 32-year-old government clinic nurse participating in the GTZ multi-country study recounted, "With the given workload due to understaffing, even easy tasks get difficult."

Safety and security concerns

The International Labour Organisation cites a study in Bangladesh showing that more than 50 women were raped while traveling to and from work in a six-month time period to illustrate that in some societies individuals believe they are justified in attacking women who work outside the home (*ILO HIV/AIDS Module*). Similarly, Goetz found that at BRAC, the Bangladeshi development organization, there is a widely held belief that female staff leave because they are reluctant to ride bicycles in public, fearing for their safety from harassment. Clayton (1995) describes the case of a woman in India who experienced criticism and censure after seeking permission from her husband and father to stop wearing the *bourka* to her job with an Indian NGO. Standing mentions a study in Sudan that identifies adequate housing and security, rather than salary incentives, as a primary concern for women doctors moving to rural areas (*Standing, 2000*).

Repressive government leadership, associated conflicts and war situations are causing changes in the asylum seeker and refugee profiles. WHO findings from six countries (Figure 1) show social unrest and civil conflict as the single most important reason for out-migration of health professionals. A workforce distribution profile shows countries that faced war and conflict situations in recent times to be among those with the lowest physician to population ratios. Liberia, Uganda, Sierra Leone, Eritrea, Ethiopia, Rwanda and Burundi all have physician/ population ratios below 8/100,000, compared to the 12.5/100,000 average for 49 sub-Saharan African countries (*Hagopian et al, 2004*).

Section 3: Actions to address turnover, including emerging evidence from tested retention approaches

The in-depth analysis of the potential causes for turnover—including out-migration—supports the view that the factors influencing workers' decisions to leave are complex. Habte, Dussault and Dovlo take into account this complexity of factors and conclude that workers plan and act on the intent to move because of felt dissatisfaction about unmet needs at the individual level (e.g., poor monetary incentives), at the workplace level (e.g., lack of supportive environment) and at the broader policy, social and political levels. Logically, retention interventions must therefore consider the interplay of factors at all three levels to stem or manage outflow.

This review found a reasonable amount of literature containing suggestions for retention approaches and examples of retention approaches under implementation. However, few of these approaches have been evaluated. In this section, retention experiences from sub-Saharan African countries are analyzed along with lessons from other contexts. The evidence generated from the review informs the retention framework presented as Figure 4 and an accompanying chart mapping country-led retention examples (Table 2). In the annex is a more detailed description of selected country-led retention examples.

3.1 Monetary incentives

Monetary incentives in the form of salary increases or allowances are often considered in response to the link between pay, worker satisfaction and performance. However, strategies for monetary compensation are different depending on the income level of the country. In higher-income countries, monetary compensation strategies are more likely to address concerns about pay inequities, slow pay raises and favoritism in giving raises and bonuses (*Branham, 2005*). For low-resource countries, monetary compensation packages must explore ways to increase wages substantially to motivate the workforce for rapid response to new health priorities.

The South Africa Department of Health introduced the "rural and scarce skill" allowance in 2003 to help curb the alarming number of health workers opting to work in other countries (*Lehmann and Sanders, 2004*). In Jamaica, health insurance, paid vacation and transportation allowances are among the common financial incentives offered to nurses (*WHO 2005, Nurse retention*). Zambia's successful proposal to the Global Fund to Fight AIDS, Tuberculosis and Malaria, Round 4, allowed the government to subsidize salaries by about 50% for 972 doctors and clinical officers and 4,292 nurses as a form of motivation for workers so that ARV scale-up targets will be achieved. The United States Government (USG) will provide $450,000 to the Zambia Government to support an additional 30 to 35 physicians to serve in rural areas through the Ministry of Health Physicians Retention Scheme. The USG will support two parts of the retention package: a monthly hardship allowance of $200 to $250 (the amount depends on the hardship rating of the district) and a one-time grant of up to $3,000 made directly to the district to be used to provide and upgrade adequate housing for physicians. It is estimated that this USG support will result in an additional 5,000 persons receiving ART services who would otherwise have faced prohibitive travel distances to receive this service *(Informal communication).*

Anecdotal evidence and preliminary findings point to positive outcomes from monetary incentive schemes, although few have been systematically monitored to assess their effect on job satisfaction.

Preliminary findings from the South Africa rural and scarce skill allowance suggest that as a result of the scheme, more health professionals will likely change their short-term career plans in favor of staying in post (*Lehmann and Sanders, 2004)*. Dovlo is of the opinion that the Additional Duty Hours Allowance (ADHA) introduced in Ghana in 2000 has slowed out-migration of doctors. Basing their argument on anecdotal evidence, Buchan and Dovlo also suggest that ADHA allowances have resulted in the shift of doctors from the private to the public sectors. In Uganda there is a belief that private not-for-profit organizations are losing providers to the public sector because of increased compensation in the public sector (*Capacity Project Strategy Development Team*). A convincing case showing a link between monetary incentives, motivation and retention is drawn from a study targeting lower-level health workers in Gongola state, Nigeria, where male community health workers (CHWs) with relatively higher remuneration stayed on average for 3.25 years compared to 2 years for male CHWs with lower pay (*Bhattacharyya et al, 2001*).

3.2 *Work environment (including non-monetary incentives)*

Global evidence demonstrates that considerations other than financial incentives help to make employees more satisfied at work. In the developed world, research shows a mismatch between what employees value and want and what organizations tend to offer as incentives. Employees in the developed world are more likely to join and stay with an organization that demonstrates fair treatment for all, shows care and concern for employees and has proven to be trustworthy. Still, organizations continue to entice employees with financial incentives such as tuition reimbursement, vacation and pay (*Finnegan, 2005*). A mega study conducted by HumanR in the US identifies four retention factors linked to the working environment:

- Employees feel they are connected to the business and can make a difference
- Managers are effective in providing feedback and recognition
- Opportunities exist for employees to build skills that will further their careers
- The leadership team is effective.

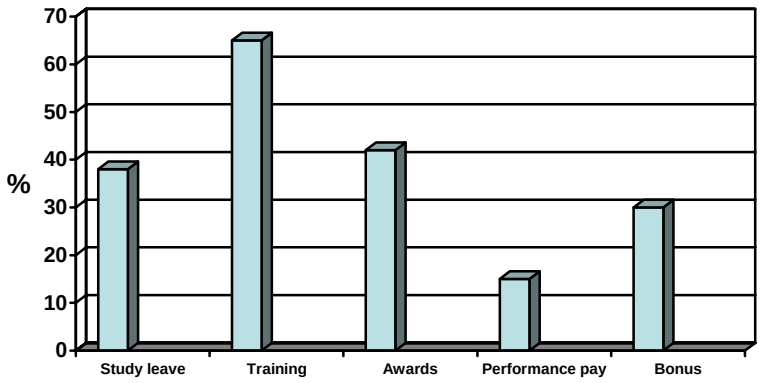
In resource-constrained countries, there has also been a gradual realization of the value of non-monetary incentives for increasing staff motivation and retention. Non-monetary incentives targeting the working environment that are being used in some developing countries to engage employees to stay include non-monetary compensation, career opportunities, good performance management practices and HIV/AIDS safety initiatives.

3.2.1 Non-monetary incentives

Many governments in resource-constrained countries find it difficult to provide monetary and non-monetary incentives for health workers either to lure workers to serve in rural areas or to minimize out-migration. Malawi is among few sub-Saharan countries that provide housing facilities (*Huddart, 2003)*. Ghana distributed cars but gave priority to doctors who are members of the medical association (*Buchan and Dovlo, 2004)*. The 2003 GTZ multi-country study identified a mix of non-monetary incentives applied in 18 sub-Saharan African countries. The incentives included training opportunities, study leave, award schemes, housing benefits,

transportation allowances and clear career structures. The study findings suggest that in Zambia refresher training opportunities led to high retention, while in Ethiopia a mix of continuing education, provision of housing and establishment of clear career structures led to improved job satisfaction and retention. Overall, the study concluded that the expressed preference of doctors and nurses was for combined monetary and non-monetary incentive packages.

Figure 2 – Non-monetary and monetary incentive practices in 18 African countries



Source: Mathauer I, Imhoff I. Staff motivation in Africa: the impact of non-financial incentives and quality management tools: a way to retain staff. Eschborn, Germany: GTZ, 2003.

3.2.2 Good performance management practices

Good management practices contribute to increased productivity, worker satisfaction and improved quality of services. US-based research has shown that the greatest driver of employee stay/leave decisions is relationship with the immediate supervisor (*Finnegan, 2005)* and calls for organizational policies that hold supervisors and leaders accountable for retention results.

A few sub-Saharan countries are beginning to notice the hidden benefits of good management practices. The introduction of two-way radios at selected health facilities in Tanzania led to a marked improvement in productivity. Enhanced communications through the use of the radios not only cut back on time lost to travel but helped ensure timely allocation of pharmaceutical, material and human resources. Another finding was that structured capacity building activities for clinic and district supervisors led to an increase in the efficiency of clinic management, improved client safety and provider satisfaction. Improved supervisory training in priority skill areas such as data management processes to inform human resources planning and forecasting, employee supervision and performance evaluation also led to measured improvement in productivity (*De Savigny et al, 2004)*.

3.2.3 Career opportunities

Swaziland and Malawi responded to complaints about career opportunities being biased in favor of doctors by revising career structures to improve progression opportunities for all cadres (*Dovlo and Martineau, 2004*). Under the new reforms, nurses, clinical officers and environmental health technicians are now eligible to apply for the district director of health position *(Huddart, 2003).* Ghana Medical Association is spearheading proposals for shorter, locally-based post-graduate medical training to provide career advancement and foster retention.

3.2.4 Workplace safety and HIV/AIDS prevention and care

Namibia has developed a comprehensive policy and legislative framework to address workplace discrimination against people living with HIV/AIDS, as outlined in the National Code on HIV/AIDS and Employment. A Family Health International (FHI)-supported workplace "fee-for-service" program focuses on building the capacity of local NGOs and institutions to provide a comprehensive workplace package for private, public, state and local government sectors in support of employees infected with or directly affected by HIV/AIDS. With partners, FHI/Namibia has developed, field-tested and published a participatory peer education training manual and companion practical guide (*FHI, 2005*).

Kahama Mining Cooperation Limited (KMCL) Tanzania has introduced initiatives to deal with issues of HIV/AIDS in the workplace. Workplace HIV/AIDS prevention schemes involve the development of a home ownership scheme for mine employees to allow them to live close to the workplace. One aim of this program is to decrease at-risk sexual behavior resulting from separation from families (*WHO, International Migration Health and Human Rights, 2003*).

3.3 Strategies to manage out-migration

It makes sense for resource-constrained countries to operate under the assumption that international migration is inevitable. Professional health workers will continue to look for posts outside their native countries as long as the push factors remain strong, job opportunities exist, barriers such as obtaining work permits can be overcome and immediate travel and accommodation costs can be met. Many governments call for ethical recruitment practices but do not have adequate structures to support policies that will buffer the effect of out-migration. Human resources experts urge governments to consider policies and strategies that will lessen the effects of out-migration. Governments are urged to 1) explore alternative staffing strategies, including expanding the skill mix of existing cadres or introducing new cadres so as to reduce overdependence on cadres more likely to migrate, 2) initiate and sustain well managed compulsory community service and bonding schemes and 3) explore creative contracting arrangements that will convert to financial gain for valued employees *(Martineau and Dovlo, 2004; Buchan and Dovlo, 2004; Dovlo, 2003).*

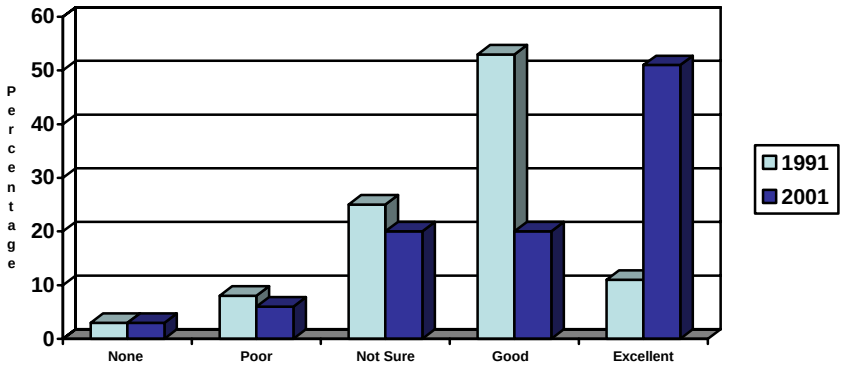
3.3.1 Alternative staffing strategies

An amendment to the Zambian medical practice act allows clinical officers and nurses to perform procedures and functions previously restricted to doctors. Nurses and midwives can now carry out detailed physical examinations, insertion and removal of intrauterine resuscitation and manual vacuum aspiration. In Malawi, Mozambique and Tanzania, clinical officers can now undertake extensive scopes of practice. A clinical officer who successfully upgrades to Assistant Medical Officer in Tanzania can expect to perform emergency obstetric surgery and general surgery *(Dovlo, 2004)*.

3.3.2 Compulsory community service

South Africa has enforced a community service initiative since 1998. Despite frustrations associated with supervision, most health professionals exposed to one year of service in underserved areas express positive feelings about the experience. The majority feel they have made a difference in meeting the health care needs of the disadvantaged and have undergone professional growth *(Reid, 2003*). Annually, more than 200 (20%) are willing to work in rural or underserved areas at the end of their community service. Given the right incentives and training, the probability is high that the cohort of health professionals willing to work in rural areas in their home countries can increase. Scientific studies from high-income countries suggest that physicians are more likely to consent to rural postings if their formal training incorporates curricula and field experiences that will prepare them to succeed in primary care settings (*Brooks et al, 2002*).

Figure 3 – Doctors' assessment of their professional development during year of community service – South Africa



Source: Reid S. Community Service for Health Professionals. In: Ijumba P, Ntuli A, Barron P, eds. *South Africa Health Review 2002.* Durban, South Africa: Health Systems Trust (HST), 2003.

3.3.3 Bonding schemes

As a retention strategy, the Ministry of Health in Ghana is seeking to re-introduce bonding schemes for a period of three to five years for all health professionals. The Nurses and Midwives

Council has taken steps to implement this policy. Nurses can obtain verification of their certificates only after proof of two to three years of service in Ghana. According to Dovlo, a successful bonding scheme for Ghana's health sector will depend on strengthened MOH structures to enforce bonding, a broader application of the scheme across all sectors and linkage with an incentive scheme (*Dovlo, 2003*).

3.3.4 Creative contracting arrangements

A number of contracting options have been explored with the aim of increasing worker satisfaction and ultimately curbing out-migration. The options include partnership arrangements between the public and private sector, de-linking health commissions from the civil service and bilateral arrangements with destination countries.

Partnership arrangements between the public and private sectors
A few countries are removing barriers to allow public sector health workers to offer services in the private sector. These arrangements aim to increase the monetary remuneration for public health employees. In Ghana, allowing public sector pharmacists to work for the private sector is reported to be a contributing factor in retaining pharmacists in the country. The MOH has plans to allow public sector physicians to practice in private fee-for-service wings in public sector hospitals (*Dovlo and Martineau, 2004*).

De-linking health commissions from the civil service
In the mid-1990s, Zambia abandoned a plan to de-link health commissions from the civil service for lack of a strong funding base. If funding had allowed, the function of hiring and firing would have been transferred from the public service commission to health boards. Staff would be hired on a three-year renewable contract allowing for higher salaries to compensate for the loss of job security *(Huddart, 2003*).

Bilateral arrangements with destination countries
A 2003 paper on international migration, health and human rights cites a WHO case example of an interesting creative contracting policy option. A hospital in an industrialized country is working to conclude a bilateral agreement to recruit nurses for a limited period of time. The contract obligates nurses to spend three years of the five-year contracting period in the country of origin. This type of contracting allows the recruiting country to subsidize the human resources component of the health sector in the country of origin while at the same time providing an opportunity for nurses to work overseas *(WHO, 2003, International migration)*.

A memorandum of understanding between the United Kingdom and South Africa provides for exchange programs to allow South African health professionals to gain experience by working for a specified period in organizations providing National Health Service and for UK clinical staff to work in rural parts of South Africa *(Braine, 2005)*.

Figure 4 – A proposed framework of promising opportunity areas to retain a qualified workforce

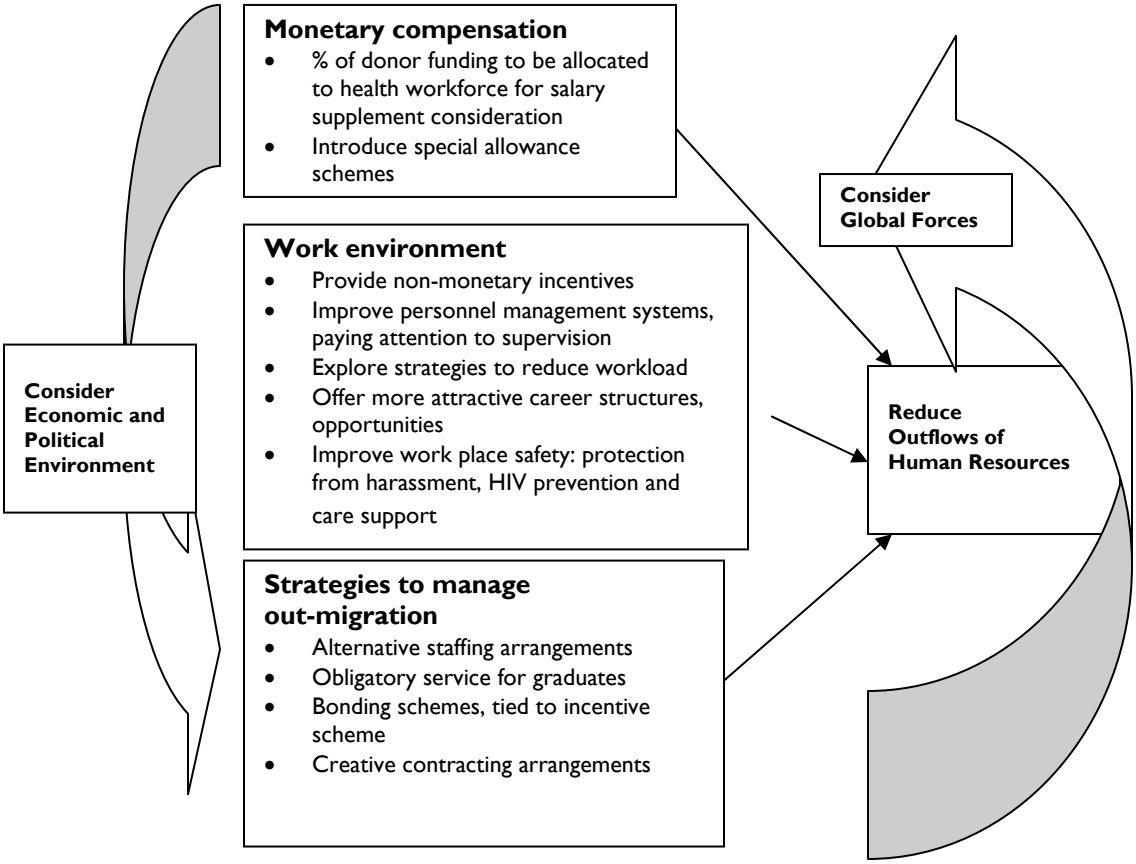


Table 2 – Retention approaches and approaches to manage migration—sub-Saharan Africa case examples

Retention approaches		Approaches to manage migration		
Improve financial incentives	**Improve working conditions**	**Alternative staffing arrangements**	**Community service and/ or bonding schemes for graduates**	**Creative contracts**
Zambia – Increased salaries for doctors, laboratory technicians and nurses to enhance ARV scale-up (GFATM Round 4)	**Non-financial incentives** **Zambia –** Refresher training led to high retention **Ethiopia –** A mix of continuing education, provision of housing and establishment of clear career structures led to improved job satisfaction and retention	**Tanzania –** Clinical officers are deployed at all levels and are trained to perform voluntary surgical contraception (VSC), which was previously done exclusively by doctors	**Ghana –** A proposal is under discussion to re-introduce three to five year bonding schemes for doctors	Through MOU between South Africa and UK, South African professionals work in NHS and UK staff serve in rural parts of South Africa
Ethiopia – Successfully proposed to the GFATM Round 4 to reduce attrition of health workers by increasing per-diem	**Senegal –** Provides nurses with bicycles to increase access to supplies and reduce isolation **Tanzania –** Improved facility-related communication and transportation (through TEHIP), leading to improved staff morale and increased productivity **Botswana –** Established set of benefits for nurses, including housing, car loans and medical allowance **Ghana –** Car and housing loan schemes under negotiation for rural-based professionals	**Kenya –** Clinical officers are deployed at all levels, including dispensary levels	**South Africa –** Implements a one-year period of compulsory community service for doctors and dentists on completion of training	
Namibia – Introduced a 30% overtime allowance for nurses	**Career advancement opportunities** **Ghana –** Proposal for more opportunities for two-year post-graduate training program **Swaziland, Malawi –** Improved progression opportunities for all cadres	**South Africa –**Task team commissioned to develop guidelines for Doctor Assistant Program		
Ghana – Introduced Additional Duty Hours Allowance, especially for physicians	**Workplace safety: HIV/AIDS care** **Namibia –** The workplace program targets the workforce at large by building the capacity of local non-governmental organizations and institutions to provide a comprehensive HIV/AIDS workplace package to the private, public, state and local government sectors	**South Africa –** Suggestion for increase in the proportion of black medical students who are less likely to emigrate		
South Africa – Introduced rural and scarce skill allowance to curtail out-migration				

Section 4: Conclusion

While the literature review presented in this paper produced rich evidence-based examples of the magnitude and causes for worker shortage and turnover, there is a recognized scarcity of information on tested approaches to improve retention. The literature provides descriptions of varying depth about incentive schemes introduced to improve worker satisfaction in the short-term and retention in the long-term. The literature also provides examples of alternative staffing deployment strategies countries are trying out to address worker shortage. Few of these retention approaches have been set up to track or report on the results and none have been thoroughly evaluated. For this reason it is difficult to offer hard evidence about which retention approaches or mix of approaches will work most effectively in developing countries.

Notwithstanding this limitation, anecdotal impressions from developing country-led retention examples suggest health care organizations should examine the following three opportunity areas to determine which combination would have the greatest impact for maintaining their qualified workforce.

Compensation
The literature review suggests that retention solutions for low-resource countries should consider addressing the challenge of low wages if health goals are to be achieved. Skeptics may ask "What else is new?" or "What about sustainability?" As witnessed in Zambia, what is new is the emerging shift among donors toward providing funding support to cover wages in addition to training and technical activities. In consideration of the sustainability issue, WHO has proposed that a proportion of all donor funding to be allocated to health workforce with no stipulation about the way the funds are to be spent (*WHO, 2004, Report for 114th Session)*. Countries will then have a choice as to whether to spend part of the funds for salary supplements.

Work environment
Retention solutions must also seek to improve the work environment, which is often a significant push factor and cause of job dissatisfaction. The literature suggests that health workers are more likely to remain with organizations that offer a combination of benefits to boost job satisfaction. These may include:

- Non-monetary incentives (e.g., housing, opportunities for training)
- Opportunities for career advancement
- A supportive environment, including supportive supervision
- Strategies to address gender-related issues and safety concerns related to HIV/AIDS infection.

Given resource limitations, many health care managers and organizations will need to choose which areas of the work environment to address first in order to yield quick and sustainable results. In developed countries, more emphasis is increasingly placed on retention approaches that make employees feel valued and supported. For example, employees surveyed from 240 US-based organizations indicate that "trust, concern and support from [the] supervisor" is a key driver of stay or leave decisions (*Levin, Thornton, 2003).*The Sunderland UK national health flexible organizational policy, which provides for special leave, career breaks and flex-time, is said to have resulted in reduced absenteeism and an increased number of nurses choosing to return to work after having children (*Standing and Baume, 2000*).

Strategies to manage out-migration

Governments are urged to combine policies for worker retention with policies that will buffer the effect of turnover, especially turnover due to out-migration. Such policies include: 1) alternative staffing strategies to reduce the overdependence on cadres more likely to migrate, 2) compulsory and well-managed community service and bonding schemes tied to an incentive scheme and 3) innovative contracting arrangements that will convert to financial gain for valued employees (*Martineau and Dovlo, 2004; Buchan and Dovlo, 2004; Dovlo, 2003)*.

4.1 Recommendations for the Capacity Project

1. Disseminate findings from this resource paper, especially at the country level, to facilitate consideration and assist in the selection of retention approaches.

2. Use the content of this paper as a reference to develop a two-to-four-page technical brief and to support country-level retention efforts. Use identified content areas of the paper as references and tools, such as the examples of country-specific retention approaches and strategies to manage out-migration (Table 2) and the framework of promising opportunity areas to retain a qualified workforce (Figure 4).

3. Design pilot efforts at the country level based on promising practices from this review, including the proposed eight-step retention system model (Figure 5).

4. Assist countries introducing or strengthening worker retention systems to:
    - Assess what will keep workers in their jobs by gathering data from existing workers as well as from workers who have moved between sectors or left the health sector
    - Design retention approaches based on the data gathered
    - Track which retention approaches work best through a sound monitoring and evaluation system.

Figure 5 – Steps toward improved workforce retention

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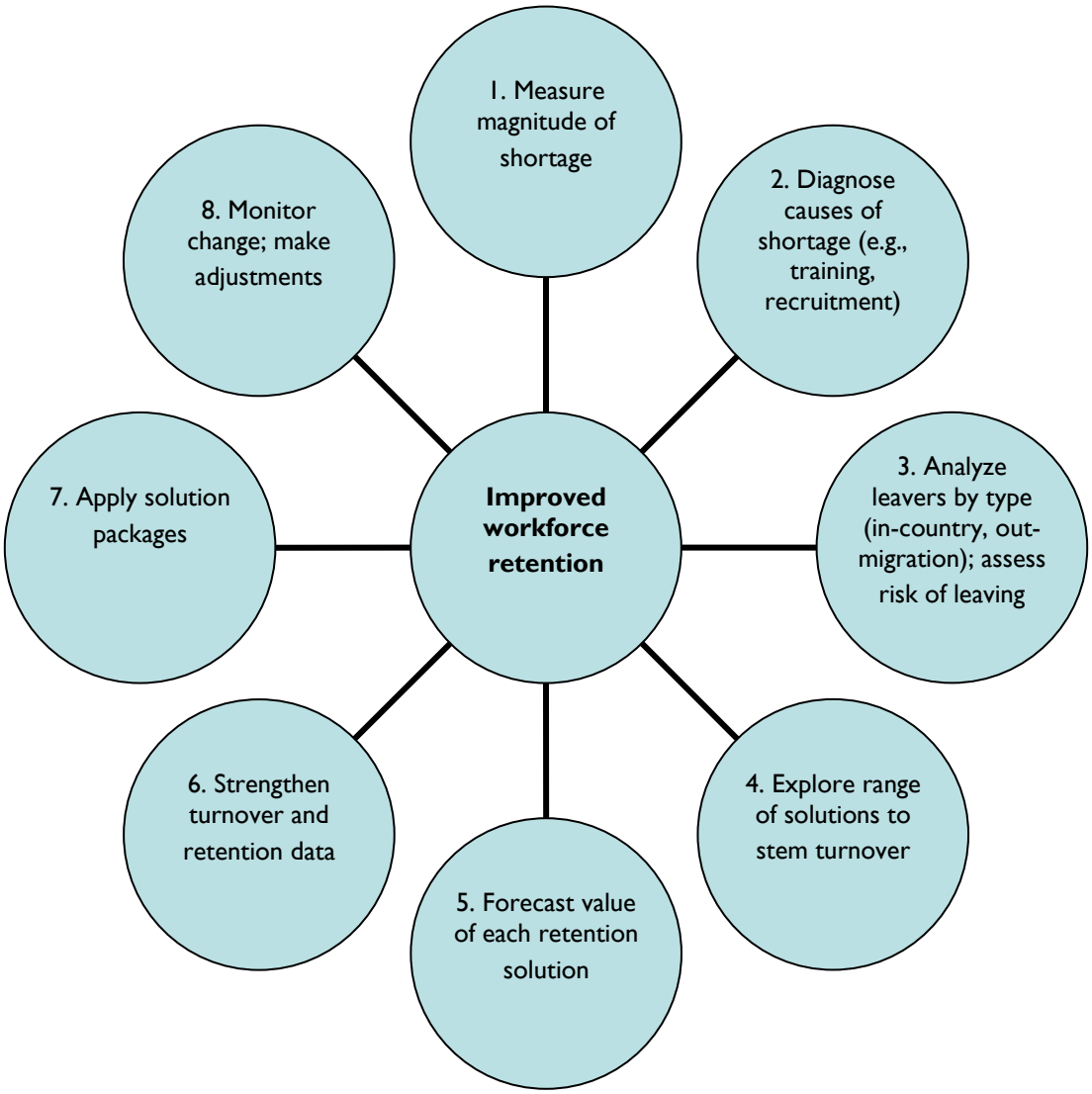

Adapted from: Phillips JJ, Connell AO. Managing employee retention: a strategic accountability approach. Burlington, MA: Elsevier Butterworth-Heinemann, 2003.

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Annex: Selected case examples of promising approaches to improve worker satisfaction and retention

A. Improve monetary incentives

Global Fund support for ARV service providers – Zambia
As a contribution to the WHO/UNAIDS "3 by 5" initiative to improve access to antiretroviral treatment (ART), the Zambian government is using its own resources to provide ART to 10,000 people living with HIV/AIDS (PLWHA). Zambia will also use funding support from the US Government (USG)'s President's Emergency Plan for AIDS Relief to provide ART to an additional 100,000 PLWHA. Zambia is hoping to make a connection between monetary incentives for health workers and the capacity to meet ART scale-up targets. To reduce attrition of health workers, Zambia applied for and received funding from the Global Fund to Fight AIDS, Tuberculosis and Malaria, Round 4, to provide significant salary increases to doctors, nurses and laboratory technicians who have been trained and are providing ART services. Incentives phased in over two years will increase salaries by about 50% for 972 doctors and clinical officers and 4,292 nurses. The intent of the monetary incentives is not solely to create a vertical benefit for ART service providers. The health workers receiving the benefits will provide both ART and other health services at the facilities in which they work.

USG support to the physicians' rural retention scheme – Zambia
The Zambian MOH has in place a rural retention scheme for physicians. Under the scheme, a package of allowances and incentives is offered to physicians who serve a three-year contract in a hardship district (54 of the country's 72 rural and underserved districts). While a number of physicians have been placed through the scheme, the existing support from other donors and the government is not sufficient to meet the need for physicians in these districts.

The USG will provide $450,000 to support an additional 30 to 35 physicians to serve in rural areas through the Ministry of Health Physicians Retention Scheme. The USG will support two parts of the retention package: a monthly hardship allowance of $200 to $250 (amount depends on hardship rating of district) and a one-time grant of up to $3,000 made directly to the district to be used to provide/upgrade adequate housing for the physician. Selection of candidates, decisions on district placement and levels of allowances and monitoring of participants will all be done by the MOH according to the approved procedures of the scheme. Funding from the government and other donors will be used for additional components of the retention package. It is estimated that this will result in an additional 5,000 persons receiving ART services who would otherwise have faced prohibitive travel distances. As part of the USG Zambia Monitoring and Evaluation System, the USG will develop a physician retention scheme module that will track the assignment of physicians funded through this mechanism, establish baselines for service statistics and monitor increases in the number of patients receiving ART services.

B. Improve working conditions

Provide non-monetary incentives – GTZ multi-country study
GTZ conducted an in-depth study in 29 countries, including 18 African countries, to assess the role and effects of non-financial incentives on motivation for nurses and doctors. Although the study was not designed to assess the direct effects of non-monetary incentive schemes on out-migration, the results reveal promising practices to improve retention. In Zambia, the introduction of refresher training for medical staff is reported to have led to a very high retention rate. In Ethiopia, a mix of continued medical education, provision of housing and establishment of a clear career structure led to improved staff satisfaction. In Ghana, an award scheme, closer supervision and team-building efforts resulted in improved prenatal care and EPI coverage and fewer applications for transfers. The study also documented in-kind benefits like free housing or subsidized transport in some countries; other countries offered incentives in the form of further training and better opportunities for promotion.

Improve performance management systems – Tanzania
The Tanzania Essential Health Interventions Project (TEHIP) responded to the need for putting supervisors and workers in close contact by supporting innovative means of communication and transportation in two districts where four or five centrally-located managers were unable to meet the expectation of visiting 50 to 100 facilities three times a year. Districts used their "top up" funding from TEHIP to equip each health center with a robust and easy-to-operate solar powered radio and to purchase a motorcycle. One district invested in high-speed boats to facilitate travel between villages. These modest investments improved the ability of workers and supervisors to communicate and led to a more efficient cascading supervisory system with visible results, including timely delivery of drugs, equipment and supplies; timely arrival and payment of staff salaries; and improved staff morale. An "in-charge" at a dispensary noted the value of improved communication: "We can now inform each other when there is an epidemic and it is a lot easier to learn of any problems anywhere within my area of operation."

Create more attractive career structures – Ghana
Current physician "fellowship" programs in Ghana, which follow an apprenticeship system, take a minimum of five years and an average of eight years of training to complete. Proposals to the Ghana Medical Association call for the institution and recognition of shorter, specialized diploma or master's degree programs focused on practical clinical skills, with structured training lasting from 24 months (for diplomas) to 48 months (for a master's). These programs are designed to fill in gaps in clinical skills at the district level as well as to encourage and reward graduates. The new proposals could provide more opportunities for career advancement locally and encourage retention (*Dovlo and Nyontor, 1999)*. Another proposal would link master's degree graduates with opportunities for upgrades through international fellowship training programs. The risk would be that doctors might choose not to return to Ghana after completing their international training.

Reduce bureaucratic bottlenecks for promotions – Ghana
As part of health service reform, health service management will be de-linked from the civil service in Ghana to reduce the rigid bureaucracy that has frustrated health workers' professional growth. Other complementary reforms, such as a decentralized personnel management system, are expected to result in a more transparent promotion and rewards system *(Dovlo and Nyontor, 1999)*.

C. Strategies to help manage migration

Make use of middle-level cadres – Tanzania, Kenya and South Africa
For many years Tanzania has been training assistant medical officers and clinical officers who are skilled in the basic health sciences and can diagnose, treat and prescribe. Assistant medical officers and clinical officers are also trained in obstetrics and surgery (*Huddart and Picazo, 2003*). To mitigate the high attrition rate of doctors, policy changes have allowed for an expansion of clinical officers' skill mix to include voluntary surgical contraception services. In Kenya, good performance and retention of clinical officers resulted in a decision that clinical officers could work at all levels of the health system, including dispensary-level facilities. The availability of clinical officers at the dispensary level means improved quality of and access to services for the rural poor. Pharmacy assistants have been introduced in South Africa as mid-level health workers and a task team is in the process of developing recommendations and guidelines for a doctor assistant/clinical officer program.

Obligatory government/community service for graduates – South Africa
South Africa has implemented one year of compulsory community service (CS) for health professionals, with doctors, dentists and pharmacists now routinely allocated to serve in public institutions on completion of their training. The primary aim of CS is to ensure improved provision of health services, but the scheme also provides opportunities for professional growth. Since its inception in 1998, the scheme has ensured the availability of a cohort of over 1,000 junior medical doctors annually, with 25% serving in rural sites. A few provinces have attempted to improve the distribution of CS by arranging for three- or six-month rotations of CS professionals between urban sites and rural sites. Exit interviews show that the majority of respondents were satisfied with the orientation received and the professional growth experienced. The CS scheme may delay out-migration plans by at least a year for a substantial number of junior doctors.

Bonding – Ghana
The Ghana Medical Services has proposed to re-introduce the bonding system to promote retention for at least three to five years after graduation. Among the suggestions are retaining and awarding the university's certificates and academic transcripts only after the bonding period, making the bonding period reasonably short and attaching clear incentives at the end of the bonding period (for example, scholarships and opportunities for further training). The threats include:

- The inability of the government and the MOH to enforce bonds
- Selective bonding for doctors that will be assessed as unfair
- The enforcement of student loan collections, including problems in tracing beneficiaries and their guarantors
- The depreciation in value of the currency, resulting in reduced value of the original amounts spent by governments for training.