BRAIN DRAIN
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A case of poor-working conditions?
- A critical review of the causes and effects -

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Africa loses, on a daily basis, her best academicians, scientists, doctors, nurses, accountants, and other sought after professionals, through brain drain, into other richer countries. The question is: Why? The impact of the problem is detrimental to the development of the African continent. It also seems to be a continuous issue without any trend of ceasing. This paper explores the nature, effects and reason for the brain drain in Kenya. In particular, this paper aims at exploring the nature and effects of brain drain on Kenya’s health sector and ultimately pinpoint possible positive perspectives of brain gain from the drained brains. It will also elaborate on some already identified possible solutions to the problem. Trained human resources are fundamental for well-functioning health systems, and the lack of health workers undermines public sector capacity to meet population health needs. Existing research on human capital migration has focused on documenting the extent of external migration, often through licensed health professional registration systems in middle and high-income countries. Other past attempts included estimating the cost of migration and were limited to education costs only and did not include the lost returns from investment. This study documents the factors that contribute to brain drain among health professionals in Kenya. Internal and external health worker migration from both the public and private sector is reviewed. The objectives of this study were: to identify the contributors of emigration of Kenyan health professionals both internally and externally; to describe other losses from brain drain to recommend possible solutions to curb brain drain. This is an exploratory study, which is based on conceptual analysis, literature reviewing, theory building and the emic perspective. The approach is to review relevant literature using electronic search and what other authors have said about the subject. The results can then provide a policy framework to advice on how to stem the trends or how to best gain from the same for health service efficiency and economic development.

Key word: Brain drain, health professionals, health sector, emigration, immigration, causes and effects.

INTRODUCTION

According to the Free Merriam-Webster Dictionary (2010), brain drain can be defined as loss of skilled intellectual and technical labour through the movement of such labour to more favorable geographic, economic, or professional environments. It implies a depletion or loss of intellectual and technical personnel. Brain drain is usually regarded as an economic cost, since emigrants usually take with them the fraction of value of their training sponsored by the government or other organizations. It is a parallel of capital flight, which refers to the same movement of financial capital. Brain drain is often associated with de-skilling of emigrants in their country of destination, while their country of emigration experiences the draining of skilled individuals. Simply put, brain drain happens when skilled professionals from a country (mostly poor countries) migrate into other countries (mostly richer countries) to practice their profession and benefit these
countries economically. Different factors contribute to brain drain; different strategies have also been experimented to curb this trend (Benedict and Ukpere, 2012).

The medical "brain drain" has been described as rich countries "looting" doctors and nurses from developing countries undermining their health systems and public health. However this "brain-drain" might also be seen as a success in the training and "export" of health professionals and the benefits this provides. This paper illustrates the arguments and possible policy options by focusing on the situation in Kenya.

The shortage of health workers in resource-limited settings is a well-established constraint to building sustainable, quality public sector health systems, and achieving improved health outcomes (World Health Organization, 2006). Numerous factors contributing to the health crisis have been identified, including lack of sustained funding for production of new health workers (Crisp, Gawanasi and Sharp, 2008) and macro-economic policies that cap the absorption of health workers into the public sector and hinder efforts to retain skilled health workers through limiting salaries and worsening working conditions (Schoepf, 2008).

External "brain drain", or migration of trained health workers to work in wealthier countries for higher salaries, continues to plague resource-limited settings (Chu, 2004; Siringi, 2001). However, internal migration, or the movement of health workers from the public sector to work for other entities within the same country including non-governmental organizations (NGOs), the private sector, and multi-lateral and bi-lateral donor agencies, has received less attention though it has an important impact on public sector capacity.

Most countries in the African Region continue to experience the loss of a sizeable number of highly skilled health professionals (physicians, nurses, dentists, and pharmacists) by their migration to developed countries. There are three categories of emigrants:

- Scientific trainees (Master's and PhD level) who go overseas for training but fail to return upon completion of their studies;
- Health professionals who obtain advanced training in developed countries, return upon completion of their studies and then emigrate after working for some duration; and
- Health professionals who train in local institutions but emigrate upon completion of their studies and/or after working for some period of time (WHO, 2006).

Emigration results from a combination of push factors (in source countries) and pull factors (in recipient countries). The reasons for scientific researchers failing to return to their home countries after training abroad include:

1) Lack of research funding; poor research facilities;
2) Limited career structures;
3) Poor intellectual stimulation; threats of violence;
4) Lack of good education for children in home country (Pang et al., 2002); and
5) Lack of the evidence-based decision-making culture, leading to lack of recognition of potential contribution of researchers to national health development (Kuper et al., 2004).

The key push factors driving out health workers include: weak health systems; insecurity including violence at the workplace; poor living conditions; low remunerations; lack of professional development opportunities (for example continuing education or training); lack of clear career development paths (Stilwel, Stilwell, Diallo, Zurn, Vujicic, Adams and Dal 2005); and risk of HIV infection due to lack of appropriate protective gear when handling specimens, blood and blood products; nepotism in recruitment and promotion; political unrest/civil wars; widespread poverty; poor governance; and case overload.

Some of the factors that pull professionals to developed countries may include: availability of information, easy access to communication and technology, making it easy to find jobs or complete visa applications and process; aggressive targeted recruitment to fill vacancies in richer countries; availability of employment opportunities; better remunerations and working conditions (Stilwel et al., 2004); secure and conducive living conditions; and opportunities for intellectual growth (for example refresher courses, access to Internet and modern library facilities). The push and pull factors in tandem have led to brain drain of health professionals from African countries. This has exacerbated the already weak national and district health systems, making it extremely difficult for countries in the Region to achieve the United Nations Millennium Development Goals (MDGs) (United Nations: Millennium Development Declaration. 2000).

Over the last two decades international NGOs have played an increasingly important role in supporting public sector health systems in low and middle-income countries, fuelled largely by shifts in funding away from support for state health systems to NGOs as well as other private sector providers. In recent years, the substantial increase in funding for health activities outside the public sector through vertical initiatives, such as PEPFAR and the Global Fund to Fight HIV, TB, and Malaria, has led to a rapid rise in NGO-directed funding, which has created conditions leading to accelerated internal migration (Dovlo, 2003) (Paragraph needs citation).

Existing research on human capital migration has focused on documenting the extent of external
migration, often through licensed health professional registration systems in middle and high-income countries. Research on internal migration remains limited. One study found that over half of the 52 graduates from Uganda's Makerere University 1984 graduating class worked outside the public sector. A study of 200 medical school graduates from South Africa showed high attrition from the public sector to the private sector. Given the limited research in this area, the current emphasis on strengthening health systems to meet HIV/AIDS and Millennium Development Goals in poor countries, and the increased availability of external assistance to the health sector largely through NGOs, systematic research on internal brain drain is urgently needed (Dovlo, 2007).

Different authors have cited push and pull factors affecting decisions to remain in the public sector. Among important push factors are:

1) low salaries, especially for those outside of the capital city who have fewer opportunities to pursue part-time clinical work in the private sector and those with public health training who (with the exception of those with doctoral-level training in public health or a related discipline) are not eligible for an increase in base salary compared with physicians with post graduate clinical specialization;
2) lack of clear career advancement opportunities, particularly among health system managers; and
3) challenging working conditions in a health system with limited resources and great need.

Push factors are home country conditions that make out-migration an attractive option. They are often described as barriers to workforce retention. Key push factors that influence nurse migration include low wages (Kingma, 2006, 2007; Dovlo, 2007), the unemployment of trained workers (Dovlo, 2007; Kingma, 2007), limited career development opportunities (Kingma, 2006, 2007; World Health Organization, 2006), increased workloads (Joint Learning Initiative 2004; Dussault and Franceschini, 2006), a high prevalence of HIV/AIDS (Ross, Polsky, and Sochalski, 2005; Dovlo, 2007), increased risk of occupational exposure (Dussault and Franceschini, 2006; Kingma, 2006; World Health Organization 2006; Dovlo, 2007), political violence (Blanchet, Keith, and Shackleton, 2006), and social instability (World Health Organization, 2006; Kingma, 2007; Nguyen et al., 2008), among other factors.

Pull factors—which often directly mirror push factors—are destination country conditions that motivate health workforce to out-migrate. Common pull factors include enhanced compensation (Ross, Polsky, and Sochalski, 2005; Dussault and Franceschini, 2006), the nursing shortage in destination countries (Stilwell et al., 2004; Dussault and Franceschini, 2006; Troy, Wyness, and McAuliffe, 2007; Arudo, 2008), active recruitment (Ross, Polsky, and Sochalski 2005; Dussault and Franceschini, 2006; Kingma 2007; Riley et al., 2007), educational opportunities (Blanchet, Keith, and Shackleton, 2006; Dussault and Franceschini 2006; Troy, Wyness, and McAuliffe 2007), career advancement (Blanchet, Keith, and Shackleton 2006), and lower patient-to-nurse ratios (Stilwell et al., 2004; World Health Organization, 2006). Key push and pull factors affecting Kenya include the unemployment of trained nurses (Arudo, 2008) and destination countries' recruitment policies (Riley et al., 2007), among other factors.

The benefits in remuneration to the individual nurse migrant, as well as the economic costs to the home country, are substantial. The gap in nurse remuneration between low-income and high-income countries is expansive. While the true disparity is somewhat smaller when cost of living is taken into consideration (McCoy et al., 2008), a newly qualified nurse in the United Kingdom making approximately U.S. $33,290 earns about 10 times the annual compensation of a newly qualified nurse in Kenya (Arudo, 2008). From 1999 to 2007, 728 Kenyan nurses out-migrated to the United Kingdom alone (2009). For every nurse that out-migrates, Kenya loses U.S. $43,180 in educational costs and an estimated U.S. $338,868 return on that educational investment (Kirigia et al., 2006). While the WHO recommends countries allocate U.S. $136 million annually to scale-up training by 2015, training alone will not solve Kenya's HRH issues (World Health Organization, 2006).

This review is based on an analysis of the factors influencing the brain drain of health professionals in Africa. It undertakes a qualitative evaluation of various pieces of evidence on the status of the brain drain, especially the strategies that various countries have adopted to mitigate the effects of brain drain. It attempts to elicit what roles the education of health professionals can play in these strategies. Whilst health professionals encompass a wide range of people with skills working in health, the main focus of literature covers nurses and doctors.

The problem

In a world where the level of unemployment is high, the health sector in Kenya seems to have perennial shortage of human resources. In sub-Saharan Africa, human resources remain in short supply and, even where available, are poorly motivated and are increasingly attracted into the wider international labour market. Statistical information from the World Health Organization (2003b) shows wide global variations in health professional availability, ranging for doctors from 2.3 to 664 per 100,000 populations; but of the lowest fifth of countries in this range, twenty-eight of thirty-seven are
that more than 800 Kenyan nurses leave the country every year to seek employment abroad especially in the United States of America. Most of them are women aged between 30 to 46 years working in the public health sector and are highly qualified, statistics at the Nursing Council of Kenya show.

Statistics from the Nursing Council of Kenya indicate that on average 840 nurses apply for verification of their certificates with an intention to migrate. “Countries of destination are the USA accounting for 59 per cent of applications and the UK with 27 per cent. In Africa, the impact of dwindling health care resources is experienced at all levels: continental, regional, national, and local. Kenya officially reports 7,830 certified medical doctors; however, 51% of them (3,975) are currently working abroad (Clemens, 2006). Taking into account the cumulative financial effects of lost returns from investments, one study concluded that for every medical doctor who emigrates from Kenya, an economic loss of 517,931 USD is incurred upon the nation (Kiriglia et al., 2006). These startling figures indicate a major threat to positive development in Kenya and the region. Despite efforts to retain health workers through increased salaries, improved working conditions, health reform and decentralization, there is a continued loss of qualified health professionals to other occupations and internal migration, as well as migration abroad.

Developed countries continue to deprive Kenya of "millions of dollars" worth of investments embodied in her human resources for health. If the current trend of poaching of scarce human resources for health (and other professionals) from Kenya is not curtailed, the chances of achieving the Millennium Development Goals would remain bleak. Such continued plunder of investments embodied in human resources contributes to further underdevelopment of Kenya and to keeping a majority of her people in the vicious circle of ill-health and poverty. Therefore, both developed and developing countries need to urgently develop and implement strategies for addressing the health human resource crisis.

Kenya has attempted to develop new standards to improve the working conditions in the health sector through salary increases; introduce health reform initiatives such as decentralization of health services, opportunities to engage in private practice and training as retention strategies. There is continued loss of many qualified health professionals to other occupations and to international migration. Furthermore, both public and private sectors major constraint in delivery of quality health services; and this inexorably impedes national effort to achieve health-related Millennium Development Goals (MDGs).

The out-migration of nurses contributes to the HRH crisis in low-income countries, like Kenya, as they struggle to progress toward the MDGs. HRH policies are needed to enhance the management of nursing resources, including the out-migration of nurses. Using data from the Kenya Health Workforce Informatics System (KHWIS) (Riley et al., 2007), which collects information on all nurses registered in Kenya, and quoting from literature from other African countries, this study aims to provide descriptive and quantitative information on:

1. Kenya’s health workforce;
2. Trends in intent to out-migrate;
3. The impact of out-migration on the workforce; and
4. The socio-political context in which out-migration occurs.

In 2010, Kenya passed a new constitution through a national referendum, the first since Kenya’s independence in 1963, redefining the health and social priorities and presenting an opportunity to shift the focus towards the health system. In chapter four, under economic and social rights, Article 43, health is given prominence as a basic right and an obligation of government. The new constitution, also, permits dual citizenship, a potential gateway for diaspora engagement with migrated health professionals.

With the recent Presidential directive decreeing that all public hospitals provide free maternity services to pregnant mothers, the public health sector is already feeling the strain, with patients, nurses and doctors bearing the brunt of the increased number of expectant women seeking attention.

Why the study and scope

The study aimed to conduct a literature review to obtain information on the causal factors attributed to brain drain among health workers in Kenya. The study specifically aimed to; establish the context for, and trends in, the migration and retention of health workers; describe other losses from brain drain; identify how to stem the brain drain and ultimately reverse the trends and assess their sustainability; and identify lessons learned and appropriate guidelines to inform policy. This study focused on the various categories of health professionals. However existing literature mostly covers nurses and doctors who form the bulk of the professionals in health.

LITERATURE REVIEW

Brain drain is described by Lowell and Findlay (2001), as the emigration abroad of tertiary-educated persons at such levels and for such lengthy durations that their losses are not offset by their remittances home, by transfer of technology, or by investment or trade from the recipient country. This description however skirts the
issue of permanent versus temporary migration and reinforces the fact that it is difficult to discern the true intentions of migrant professionals.

In this paper, brain drain is considered to have occurred once a professional is not in the employ of the home or source country. Return may occur when conditions change at home, but such movement in and of itself does not give clear-cut indications of migrants' intentions.

The term “health professional” in this paper refers to mostly tertiary-trained (meaning training at the post-secondary university level) persons and generally includes doctors, pharmacists and graduate nurses.

**Push/Pull factors**

"Push" factors were used by Meeus (2003) and Dovlo (1999) in some studies on the brain-drain phenomenon to describe factors within source countries that compel professionals to emigrate whilst “pull” factors arise within recipient countries and attract intellectuals into their own systems. Padarath (2003), however, describe a system of push factors that exist in both source and recipient countries but which are mitigated in recipient countries by what they described as “stay” factors and in source countries by “stick” factors. Most health professional education in Africa is provided and subsidised by governments, and professionals are produced for the health sector by publicly funded universities and colleges managed by the education sector. It was suggested at the World Health Organization/World Bank (2002) conference on “Building Strategic Partnerships in Education and Health in Africa” that a disconnect existed between health reforms and policy formulation on one hand and the education of the health workforce on the other, which may well influence matching the professional to the community’s needs.

Such a situation would exert a push factor. Stalker (2001) recently defined the influencing factors in terms of individual and structural approaches to migration. The structural approach refers to factors outside the control of the individual professional such as the political and social problems within a country. The individual or “human capital” approach emphasizes those factors that constitute personal motivation and incentives to migrate. Dzvimbo (2003) analysed the push pull factors. The push factors refer to the unfavourable conditions in Africa that drives people to leave. They include, among other factors, job scarcity, low wages, and the second world conditions in Africa. He posed this question: how can public institutions retain professionals, researchers, and scientists, in the face of such sharp declines in average real wages?

Dovlo (1999), Martineau, Decker, et al., (2002), Meeus (2003), Padarath (2003) and others have discussed the reasons underlying the brain drain in various papers. A number of push and pull factors, have been cited as influencing the decisions of health professionals to leave their countries of origin. Push factors refer to events in the country of origin that motivate professionals to leave whilst pull factors are the deliberate and/or unintended actions from recipient countries that attract health professionals to their health services. Examples of push factors include low remuneration, poor working conditions, low job satisfaction, lack of professional development and career opportunities and political and ethnic problems including civil strife and poor security.

Poor governance of health services and the lack of technology and equipment to perform professional tasks are also important factors. Pull factors are caused by increased demand for health professionals in developed countries and include attractive remuneration, new career and personal development prospects and active recruitment by those countries. The common use of a professional language such as English and similarities in professional training and systems arising from the colonial experience of African countries are also thought to enhance the pull factors. Numerous factors contributing to the human resources for health crisis have been identified, including lack of sustained funding for production of new health workers (Stilwel, 2005) and macro-economic policies that cap the absorption of health workers into the public sector and hinder efforts to retain skilled health workers through limiting salaries and worsening working conditions (Stilwell, 2004). External “brain drain”, or migration of trained health workers to work in wealthier countries for higher salaries, continues to plague resource-limited settings (United Nations: Millennium Development Declaration. 2000. However, internal migration, or the movement of health workers from the public sector to work for other entities within the same country including non-governmental organizations (NGOs), the private sector, and multi-lateral and bi-lateral donor agencies, has received less attention though it has an important impact on public sector capacity (World Health Organization, 2006).

An especially worrisome finding of this study is the increased frequency of internal migration observed alongside the explosion of the NGO sector in Kenya, fuelled by the dramatic increase in external assistance from global health initiatives relying on NGOs as the primary channel for aid to meet ambitious targets. There are likely multiple push and pull factors that shape decisions to remain within the public sector or pursue outside opportunities. Among important push factors are: 1) low salaries, especially for those outside of the capital city who have fewer opportunities to pursue part-time clinical work in the private sector; 2) lack of clear career
advancement opportunities, particularly among health system managers; and 3) challenging working conditions in a health system with limited resources and great need. Budget ceilings have been highlighted as a factor that contributes to resource constraints in the public sector, which may partially explain the rationale for channeling increased external aid through the NGO sector.

Some Africans migrate to former colonial powers because they can easily identify with the language and culture. Thus, immigrants from Angola, Cape Verde, and Guinea- Bissau are found in Portugal. Those from Algeria, Morocco, and Tunisia usually settle in France (OECD, 2001). Other destinations of emigration are based on the strength of such economies and the employment availability. El-Khawas (2004) identified the United States as the largest recipient of new immigrants that are talented and educated. In fact, Africans, having more African scientists and engineers working in the United States than there are in Africa, are said to be the most educated ethnic group in the United States. African immigration to the United States doubled between the decades of the 1980s and 1990s. Nigeria, Ethiopia, Egypt, Ghana, and South Africa dominated immigration flows to the United States during that period (El-Khawas, 2004). Over the last three decades, Kenya and many other countries in Sub-Saharan Africa have experienced rapid emigration to the developed world. Kenya is one of the African countries that has so much been affected by brain drain.

In Kenya, students move every year to go and study abroad but they never return back after attaining the appropriate education. They get jobs there and fail to return. Professions also move in search of jobs that pay well as compared to Kenyan jobs. More than a million Kenyan professionals live and work abroad, making the country one of the most heavily drained in Africa. Statistics released by the Government show that between 500,000 and 1.8 million Kenyans work overseas, although their skills are much needed locally (Siringi and Kimani, 2005).

Although more than 30,000 Kenyans leave for higher studies overseas, less than 9,000 of them return home on completing their learning. According to Kirui (2005) when highly skilled people leave the country, or those who have acquired high skills do not return, it poses serious brain drain, robbing the country of essential human capacity to help in socio-economic development.

Statistics also show that 37,724 African students were enrolled in colleges and universities in the United States in 2001/2002. Some 18.8% of these students were Kenyan students. Of the 15,331 East African students from 19 countries enrolled during that same period (Kaba, 2005). So many Kenyans have moved from their homeland to other countries. In fact, one can find Kenyans today in all parts of the developed world or rich nations, from Australia to Canada. As of 2001, there were 47,000 Kenyans in the United States, 20,600 in Canada, 15,000 in the United Kingdom, 6,900 in Australia, 5,200 in Germany and 1,300 in Sweden (Okoth, 2003). The primary cause of Brain Drain in Kenya is the difference among countries in economic and professional opportunities, hence the imperative to move from one area to another to improve their social and economic status. Brain drain has a direct relationship to levels of education attained, and access to training and employment opportunities abroad.

Operating within the difficult milieu described is the health worker, a critical part of the health system and perhaps the most essential of the health sector's resources, whose motivation and effective utilization enhances the efficiency and effectiveness with which all the other resources are used. The numbers of health professionals joining the brain drain has reached a peak in recent years in apparent response to huge demands emanating from the developed countries. These demands were occasioned by demographic changes, aging populations as well as a reduction in attracting recruits into the health workforce. Changes in working hours and conditions have also meant that an increase in requirements of doctors and nurses. The brain drain of professionals, combined with the health crisis described earlier together threatens the entire development process on our continent.

Brain drain is not uniquely an African affair. Experts in research and development from developing countries migrate to developed countries on a regular basis. About 80% of Indian computer programmers migrate to the USA, depriving the Indian economy about US $2 billion a year in innovations (Oduba, 2000). China, Haiti, Portugal, just to mention a few, in the other continents is also affected. In the African continent, countries like Nigeria, Ghana, Kenya, and South Africa are affected by brain drain. This phenomenon leaves these countries in a state of acute shortage of skilled professionals despite their investment in human capital (Imran et al., 2011).

For example in Ghana, vacancy rates in the public health services have shot up in the past 5 years. In 10 years between 1986 and 1995, 61% of the output of one medical school in Ghana had left the country (Dovlo, 1999). Other recent data from unpublished communication5 indicates some aspects of the problem at the brain drain recipient's end. Trends in new registration of overseas doctors by the UK General Medical Council shows an increase of 38% in 2002 as compared to 1993. It has been estimated that England alone will need 25,000 doctors more than it did in 1997 by 2008 (Buchan, 2003). The situation is worse with professional nurses. England estimates some 250,000
nurses will be needed above their 1997 levels by 2008 and current new registration of nurses* show that some 45% of all new registrants come from international sources compared with about 12-15% in 1996/97.

One recent study in Ghana indicates a number of push and pull factors. “Push” are those factors that occur within the county of origin, motivating professionals to leave. “Pull” factors on the other hand are the deliberate and/or unintended actions that attract health professionals originating from the recipient country’s policies and actions.

Examples of “Push” factors include low remuneration, poor working conditions and low job satisfaction, political and ethnic problems as well as civil strife and poor security (Dovlo, 2002). Poor governance (or perceived poor governance) is an important issue for professionals to work elsewhere. The lack of technology and equipment to perform professional tasks for which staffs are trained for will reduce job satisfaction. “Pull” factors on the other hand may arise because of increased demand for health professionals in developed countries, (for example aging populations requiring more care) and economic changes that make the health professions such as nursing unattractive to job market entrants. The use of a common language such as English and similarities in professional systems are also factors. A complex combination of both "push" and "pull" factors lead to a threshold decision to migrate.

These combined “push-pull” ingredients is described in terms of the gradients (Dovlo, 2003) between situations in the county of origin of the health worker and in the receiving country:

- The income gradient: The differential in salaries and living conditions between the home and recipient countries.
- The job satisfaction gradient: The perception of good professional working environment, skills utilization at professional and technical proficiency that allows for international recognition with one’s peers.
- The organizational environment/career opportunity gradient: Health professionals are acutely aware if opportunities for advancement in careers and in specialization are fair and accessible. A fair, well-governed environment for HR management will help attract and retain staff.
- Governance gradient: This is linked to the organizational environment discussed above as well as to the level of administrative bureaucracy and the differences in efficiency with which services are managed.
- The protection/risk gradient: There is some indication that the lack of protective gear and a perception of increased occupational risk from HIV/AIDS when working in Africa, compared to that in receiving countries, plays a role in the decision to leave and work abroad.
- Social security and benefits gradient: Health professionals are concerned with basic comforts during their working life, but also with security after retirement. Retirement and Pension benefits are thus important motivation factors. In Ghana, one of the main reasons (given by all but especially 50 year+ emigrants) is to save money for housing and sustenance for retirement.

A “feedback loop” phenomenon means that the increasing demand on health professionals, increased workload and loss of teachers and future development opportunity arising from the brain drain further fuels departure of even more professionals.

**BRAIN DRAIN LOSSES**

**Effects of loss of health professionals**

Some of the effects of the loss of health professionals include declines in quality of care, cause by increased workloads as well as loss of support and supervision from experienced supervisors. Leadership and morale may suffer which may also affect the ethics of the profession. The costs of the loss of health workers, who are most likely trained at public cost is horrendous for poor countries. Nayak (1996) estimated that India alone must have lost US$3.6-5.0 billion in terms of the costs invested in the training of an estimated 83,000 doctors who have emigrated since 1951. The USA with its estimated total of 130,000 Foreign Medical Graduates must have gained some $26 billion in training costs saved. Ghana, between 1986 and 1995 lost an estimated US$5,960,000 in tuition costs alone from the 61% of medical graduates who emigrated from just one Medical school. Much more detailed work is required on the costs to African countries but these include costs of training (from primary to tertiary education) lost contributions to GDP and taxes, the costs of illness/ morbidity caused or aggravated by staff shortages, and costs arising from substituting less qualified staff or importing expatriates to fill the vacant posts.

**Cost of brain drain**

The data on the cost of non-boarding primary and secondary education were obtained from one non-profit religious mission school in Nairobi, Kenya. The public primary and secondary schools are heavily subsidized. For example, in 2003, Kenya decided to implement a free primary education policy in the entire country. Thus, use of fees charged in public schools would grossly underestimate the value of investment made by governments and society in general. The religious mission schools levy fees just enough to cover fixed and variable costs, earning neither a profit nor making a loss. At the other extreme are the private-for-profit schools that aim at making super-normal profits. The latter schools
distort the resource allocation process because they reflect the overpricing of education production process. Therefore, among the three categories of schools, the fees charged by religious schools in Kenya were thought to be a closer reflection of the cost of primary and secondary education.

The primary school period is for eight years; and the secondary school is for four years. Their cost consists of tuition, lunch, transport, textbooks, stationery and uniforms. The tuition, lunch and transport fees levied by the mission schools aimed at covering the cost, not making a profit (Troy, 2007). The data used to estimate the cost of training nurses and doctors were obtained from the University of Nairobi (the oldest national university in Kenya) medical school and its college of health sciences self-sponsored (unsubsidised) programmes. The other public university in Kenya that trains medical doctors and nurses is the Moi University. The two universities charge equal fees for training of doctors and nurses. The fees for government-sponsored students are heavily subsidized, whereas the self-sponsored students pay fees that are equal to the cost of education. Although the private universities do not train medical doctors, some of them (for example Methodist University and University of Eastern Africa) do train nurses. We used the fees for self-sponsored medical and nursing students in public universities as a proxy for the unsubsidised cost of tertiary education (Ross et al., 2005).

The nursing programme is made up of four years of training and one year of internship. The medical doctor programme consists of five years of training and one year of internship. The cost estimates were made up of unsubsidised tuition fees, accommodation and living expenses. The statistics on the number of Kenyan nurses working in OECD countries were obtained from the World Health Report (2006). The numbers of Kenyan doctors immigrating to various developed countries were obtained from Stilwell et al., (2006).

To obtain the average total cost of producing a doctor (nurse) we summed up the average cost of medical school (and nursing school) and the average costs of primary and secondary schools. That gave us an approximation of the total cost of training a medical doctor and a nurse. To obtain the returns from investment foregone by society when a doctor or a nurse emigrates, we multiplied the average total cost of educating a health professional by a compounding factor (OECD, 2001). In algebraic terms, the lost return from education investment into an ith doctor or nurse (ILOSS i = Doctor, nurse) who decides to emigrate would be:

\[ ILOSS = ATC_i \times (1 + r) \]

where \( ATC_i \) = average total cost of educating a ith health professional, for example doctor, nurse; \((1 + r)^t\) is the compounding factor; ‘r’ is the interest rate; and ‘t’ is the difference between the average retirement age and the average age at emigration. The above formula gives the accumulated value or future value of the investment made into producing a doctor or nurse in ‘t’ years.

Past studies have attempted to estimate the cost of brain drain by taking into account only the tertiary cost and disregarding the primary and secondary school investments. We believe that this leads to underestimation of the loss of returns from investments into human resources for health that emigrate. This study takes into account the total cost of educating a health professional to be the sum of the cost of primary, secondary and tertiary education. In order to get the total future value of this investment that is lost due to brain drain, we applied the above-mentioned compounding formula to estimate the cumulative loss of future returns. According to the World Health Report 2006, about 1,213 nurses and midwives trained in Kenya work in seven OECD countries, that is, 3.3% (1213/37113) of total number of nurses and midwives working in Kenya.

The tertiary cost of training one nurse in a Kenyan school of health sciences is about US$ 25,352. Since the cost of secondary education is US$ 6,865 and that for primary education is US$ 10,963, the total cost of educating one nurse is US$ 43,180, that is, US$ 25,352 + US$ 6,865 + US$ 10,963.

Let us assume that the average age of emigrating nurses is 30 years; the average statutory pensionable age for Europe and Americas is 62 years (Kirigia, 2006); an emigrant nurse would work for 32 years before retirement; and the current average interest rate on fixed deposits in Kenya is 6.65%. If the amount of US$ 43,180 (that is, cost of educating one nurse) were put into a commercial bank for a period of 32 years, at a fixed deposit interest rate of 6.65% per annum, the investment will grow to US$ 338,868, that is, [US$ 43,180 × (1+0.0665)32]. Therefore, on average, for every nurse that emigrates, a country loses about US$ 338,868. Applying that figure to all the 1,213 Kenyan nurses working in the seven OECD countries results in an economic loss of US$ 411,046,884, that is, 1213 nurses × US$ 338,868 each.

Other losses from brain drain
When health professionals emigrate, Kenya loses far more than the cost incurred by society to educate them. This is because there are several other losses that are not captured in the education-costing methodology. Some of those losses are (World Health Organization, 2006).

Loss of health services
Health professionals (especially doctors and nurses)
contribute to health promotion, disease prevention, diagnosis, treatment and rehabilitation. The ratios of doctors and nurses to the population in Kenya are very low, and, as a result, medical practitioners and nurses are usually overloaded with work. Thus, the emigration of doctors and nurses (and other health professionals) exacerbates the human resource shortage within the national and district health systems and reduces their capability to perform their functions (of stewardship, health financing, resource/input creation and health service production and provision) and achieve their goals of health improvement, responsiveness to client’s legitimate expectations and fairness in financial contributions.

**Loss of supervisors**
Practising doctors and senior nurses normally play major roles in supervising staff in peripheral facilities (for example health centres, dispensaries and health posts) that serve the majority of populations. Thus, when such doctors and nurses emigrate, the supervisory capability is lost (or diminished), contributing to further weakening of the capacities of such health facilities to provide quality services to patients. This compels the staff left behind to assume greater responsibilities than they had been trained for, invariably leading to a decline in the quality of health services.

**Loss of mentors for health sciences trainees**
Practising doctors (and senior nurses) train and counsel new employees and students doing their internship. The emigration of either cadre has negative inter-generational effect on the process of health-related human capital creation in the country.

**Loss in functionality of referral systems**
The hierarchical national referral system consists of tertiary hospitals (apex), provincial hospitals, district hospitals, health centres, dispensaries, health posts and community services. It permits movement of patients from the base of the national health system to the apex and vice versa. Although the movement of patients should, in principle, be initiated by health professionals, in practice, patients move themselves up and down this system. Patients bypass the cheapest health units (health centres, dispensaries and health posts) mainly due to lack of doctors and diagnostic services (McCoy, 2008). Those two factors create adverse incentives for patients to bypass the cost-effective health units and to seek care in more expensive hospitals. Thus, emigration of doctors contributes to inefficiency and weakening of the referral system.

**Loss of role models**
Children often view doctors and nurses practising in communities as examples to be imitated and emulated. Thus, external migration not only robs such children of positive role models, it also negatively affects their dreams and aspirations and hence the number of children aspiring to become health professionals.

**Loss of public health researchers**
Many of the specialized doctors who emigrate are often among the very few active/published researchers that the country has. Emigration of such people stifles innovation and invention in persistent local public health problems, for example HIV/AIDS, tuberculosis and malaria.

**Loss of custodian of human rights, especially in rural areas**
A recent study on the status of national health research bioethics committees in the WHO African Region found that many countries did not have functional ethical review systems that protected the dignity, integrity and safety of citizens who participated in research Stiwell et al.. (2003). Authors argued that health professionals who were posted in rural areas, by virtue of being the most educated, often bore the burden of assuring that the human rights of their actual and potential clients were respected and protected in the course of their clinical work and research carried out by others.

**Loss of savings (investment capital)**
In Kenya, health professionals are among the relatively better-paid persons, and thus they contribute to accumulation of national savings. Those savings are eventually loaned to entrepreneurs for investment. Thus, emigration may lead to loss of such savings, except where persons who emigrate remit their savings back to the country for investment.

**Loss of entrepreneurs**
The health practitioners, by virtue of their education and earnings, quite often set up health-related (for example private clinics, hospitals, pharmacies) and non-health-related businesses (for example retail and wholesale shops). Thus, emigration reduces the growth of entrepreneurship in affected countries and the prospects for economic growth.

**Loss of employment opportunities**
Doctors and nurses usually provide job opportunities for housekeepers, gardeners and security guards at their places of residence. Thus, emigration of practising health professionals usually results in loss of employment opportunities and income for those poor workers and their families (Kirigia et al., 2000).

**Loss of tax revenue to government**
Given the fact that health professionals are among the
relatively well-paid persons in Kenya, they are also major contributors to the country's income-tax collection. Since the incomes of emigrants are not liable to tax administration systems of Kenya, emigration leads to a net loss in tax revenues.

Disruption of families
In some instances, due to immigration restrictions, the emigrating health professionals are not allowed to take along their families. Due to spatial distance and loneliness, some of those emigrants may choose to get new marriage partners in their countries of work. This may bring psychological and economic suffering to family members left behind in Kenya.

'Internal' brain drain
The brain drain, broadly construed, not merely reduces the supply of vital health professionals in Kenya; even more seriously, it diverts the attention of those who remain from important local problems and goals (Kingma, 2006). These include provision of primary health care services (including health promotion and primary and secondary prevention of diseases) and promotion of problem-oriented training and research on important domestic public health issues. Such needs are often neglected as training and research get dominated by rich-country ideas as to what represents true professional excellence. Those highly educated and skilled Kenyan health professionals who do not physically migrate to developed countries ‘migrate intellectually’ in terms of the orientation of their activities.

Loss of an important element of the middle class
Arguably, physicians comprise an important segment in the social and economic make-up of the middle class. They are generally respected as being above corruption, they advocate for quality public schools, they provide a market for consumer goods, and they contribute to political, social and economic stability. Furthermore, they create demand for democratic institutions (Troy et al., 2005).

ALLEGED REDEEMING FEATURES OF MOVEMENT OF HEALTH WORKERS ABROAD
Some middle-income countries like the Philippines train health workers for international export. The World Health Report (2006) states that: “The government of the Philippines has encouraged temporary migration by its professionals in recent years and taken measures to turn remittances into an effective tool for national development by encouraging migrants to send remittances via official channels. In 2004, the Central Bank of the Philippines reported total remittances of US$8.5 billion, representing 10% of the country's gross domestic product (GDP).”

Unlike the case of the Philippines, where the government strategically encourages temporary emigration of health workers for remittances and for acquisition of skills and expertise, the Kenyan government does not encourage health professionals to emigrate due to the large unmet need for their services, especially in rural areas where about 80% of the population lives. The relatively meagre remittances by the Kenyan health professionals working abroad are sent directly to family members and not through official treasury channels (Blannchet et al., 2006). Those resources are not available for strengthening of medical (and nursing) schools and national health systems. Furthermore, although remittances are beneficial to the emigrants' family members, they may contribute to widening the gap between the rich and poor.

It has also been argued that if health workers return home, they bring significant skills and expertise back to their home countries. There is no evidence that Kenyan health professionals may choose to get back home after working for a few years to share the knowledge and skills acquired abroad.

The 'fiscal space' (budgetary room) (Blannchet et al., 2006). in low-income countries, like Kenya, has often constrained them from employing all the available human resources for health. This has often resulted in the paradoxical scenario of unemployment of some cadres of health professionals amidst the large unmet need for their services. For example, around 4,000 unemployed nurses in Kenya do not constitute a real surplus since there is a large unmet need for their services (Chankova et al., 2009).

Heller (2005) indicates that countries like Kenya can potentially increase their "fiscal space", for example to employ the unemployed nurses, in four ways: (i) Generation of additional revenues through increased taxes or strengthened tax administration; (ii) Efficiency savings or reduction in unproductive expenditures, for example spending on defence, foreign travel or embassy expenses; (iii) Domestic and/or external borrowing, for example sustained and predictable external grants; and (iv) Printing money to finance additional government spending, which is an undesirable option since it might fuel inflation.

Even assuming that 'fiscal space' was not an issue, that there was a real surplus of nurses, and that Kenya decided to export them to developed countries, the government should try to negotiate for reimbursement of not just the training cost of US$43,180 per nurse but the lost returns from investment of between US$205,750 and US$4,515,869 per nurse. Those resources can be used
to strengthen the tertiary institutions that produce human resources for health.

ADDRESSING BRAIN DRAIN-RETURN FACTORS
Returned doctors and nurses interviewed confirmed a number of factors that influenced their decision to return, such as, weather conditions, visa problems, family reasons, lack of recognition of credentials in the destination country, bonding for scholarship, (Chen et al., 2004) challenging work schedule that did not promote a work-life balance, expensive cost of living in the UK compared to Kenya and discrimination (Daily Nation, 2007a). Discrimination experiences ranged from heavier workload than other colleagues, racism from patients, lack of professional protection, lack of promotion opportunities, racism from colleagues to feelings of treatment as a second-class citizen (Chen et al., 2004).

The perspectives of the health professionals post-return may be both positive and negative. Some health professionals experienced jealousy and envy from colleagues due to their work abroad: this was particularly noted by nurse. Doctor mostly had positive reactions from colleagues who were eager to learn new practices and technologies. Socially, professionals had higher expectations from family members upon their return but at the same time they were able to afford new status that they could not have in the UK or even prior to their departure, such as a maid (Diallo et al., 2003).

METHODOLOGY
This study is a critical literature review of qualitative and quantitative evidence of the direct and indirect impacts of different reasons for immigration, using the country’s health management information system (HMIS). Secondary data was collected from websites that include materials on human resources in health (HRH), such as EQUINET, the WHO HRH database, Medline, USAID, IOM and the Global Health Worker Alliance, as well as from internet search engines (Medline/PubMed and Google) and government ministries, health institutions and peer-reviewed journals. Information was also obtained from published documents by medical service institutions on their terms and conditions of service, government policy documents and the English language newspapers in the country. These sources were reviewed to give some insight into the search for primary information from sampled health service institutions.

RESULTS, DISCUSSION, AND CONCLUSION
Brain drain is a serious impediment in Kenya’s health development agenda. The causal factors are mostly related to poor working conditions which are far beyond issues of pay. The strain on the health professional makes immigration an appealing alternative and policy makers must stem this trend.

A World Bank study estimated the economic loss incurred by Kenya as a result of emigration of one doctor to be about US$ 517,931 and one nurse to be US$338,868. However, we suspect that the magnitude of the socioeconomic loss due to brain drain is likely to be even larger than our estimates. Therefore, there is need for more precision in the measurement of the magnitude of the socioeconomic loss due to brain drain, for use in advocacy and policy. We propose the use of Contingent Valuation to measure the benefits from investments into specific categories of human resources for health. Those benefits would be a more accurate indicator of the losses incurred by Kenya due to brain drain.

Developed countries continue to deprive Kenya of millions of dollars worth of invaluable investments made in the production of health workers. If the current trend of poaching of the scarce human resources for health (and other forms of human resources) from Kenya is not curtailed, the chances of achieving the Millennium Development Goals would remain dismal. Since the limited human resources for health are the head, heart and hands of the national and district health systems (World Health Organization, 2006) the continued plunder of investments embodied in human resources contributes to: 1) the growing double burden of communicable and non-communicable diseases (by weakening health promotion and primary and secondary prevention); 2) further underdevelopment of Kenya; and 3) keeping a large proportion of the Kenyan population in the vicious circle of poverty and ill-health.

Economic arguments notwithstanding, ultimately the price of emigration of human resources for health from Kenya to developed nations is paid in unnecessary debility, morbidity, human suffering and premature death among Kenyan people. This unacceptable situation should be urgently reversed through joint action by both developing and developed countries. in rural areas, in lower-income districts and at lower levels of the health system to ensure that all areas reach minimum standards with regard to numbers of personnel per population (such as the WHO recommended minimum standard of 20 doctors per 100,000 patients). According to a report by The International organization for migration (2011), the health care sector in Kenya is governed by the national policy framework and the health sector policies. There is no formal policy framework to address the migration of health professionals. Migration is acknowledged as a problem but not a priority and as such there is no specific policy framework to address international migration of health professionals.

There is a need to explore policy options that encourage return or circular migration of health professionals from the destination countries back into
Kenya and how to transform the 'stay' factors into 'return' factors. This area of research should be carried on in collaboration between source and destination countries, to ensure that the implementation of recommendations is a shared venture within the goals of the World Health organisation (WHO) code for international recruitment of health professionals. The government has been willing to address the challenges by prioritising health and education in the Vision 2030 presenting a window of opportunity for interventions to reduce the effects of the current HRH crisis. Migration needs to be explicitly explored as a research and policy area to ensure that the gains being made in the health system are not lost if and when health professionals leave. (Pillay, 2007).

In a study titled incentives for health worker retention in Kenya: An assessment of current practice, Ndetei, Khasakhala and Omolo (2008) stressed that incentives are not only financial. According to the feedback we received from health workers, a number of non-financial incentives are highly value viz: improved working conditions; training and supervision; and Good living conditions, communications, health care and educational opportunities for themselves and their families.

The government needs to invest not only in its health workers but in its facilities, by ensuring regular medical supplies, upgrading facilities and improving working conditions in rural and poorer areas. Continuous medical education in specific areas is required, depending on service needs, in response to areas of increasing public health burden, such as antiretroviral therapy (ART), voluntary counselling and testing (VCT), and services for tuberculosis, epilepsy, mental health, diabetes and hypertension.

Management practices also appear to be important. However, the strategic information needed for effective management was often missing in the facilities that needed it most. We set out to assess the impact of incentives, but were not able to access the sort of routine information needed to make this assessment. This information gap puts human resource managers at a disadvantage for their own strategic planning, and makes it harder for them to argue for further resources needed for retention incentives. The reasons why health workers resign or leave facilities should be routinely documented to assist policy makers to address the causes of internal and external migration. Health information management systems should be used to track the flows of health workers and inform the planning and distribution of health workers. Particularly in the public sector, health worker records are necessary to be able to monitor implementation and assess the impact of incentives.

A lot of attention in the research field is currently being given to the international migration of health workers and not enough to internal migration from rural to urban areas. In Kenya, internal migration is just as serious a problem as international migration. This situation not only calls for investment in incentives to recruit and retain personnel in poorer, rural areas, but also for wider investment in the quality of health services to provide the kind of working environment that allows health workers to perform their jobs effectively and service the communities that need them most (Buchan, 2007).

Suggestions for further research

The following aspects are in need of further research:
- Monitor the trends of the effects of loss of health services as a result of external migration of key cadres of human resources for health, such as specialist doctors and nurses, pharmacists and lecturers of medical and nursing schools.
- Establish a database of cost of primary, secondary and tertiary education of various categories of human resources for health, and cost of alternative strategies for stemming the tide of brain drain.
- Establish a programme for systematic monitoring of international migration of different cadres of human resources for health and tracking of remittances of income.
- Application of the contingent WTP approach in the valuation of the socioeconomic loss incurred by Kenya due to brain drain of different categories of human resources for health.
- Identify the determinants of health staff motivation, including their health-related quality of life and retention through regression analysis.

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