SHORTAGE OF HEALTHCARE WORKERS IN DEVELOPING COUNTRIES—AFRICA

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The already inadequate health systems of Africa, especially sub-Saharan Africa, have been badly damaged by the migration of their health professionals. There are 57 countries with a critical shortage of healthcare workers, a deficit of 2.4 million doctors and nurses. Africa has 2.3 healthcare workers per 1000 population, compared with the Americas, which have 24.8 healthcare workers per 1000 population. Only 1.3% of the world's health workers care for people who experience 25% of the global disease burden. The consequences for some countries resulting from loss of health workers are increasingly recognized and are now being widely aired in the public media. The health services of a continent already facing daunting challenges to the delivery of minimum standards of health care are now also being potentially overwhelmed by HIV/AIDS. There is a need for concerted political will and funding support that will allow them to do what is necessary. It may well be asked why special measures should be necessary to influence the migration of health professionals rather than engineers or football players or any other category. The answer must surely be that no other category of worker is so essential to the well-being of the population of every nation. (*Ethn Dis*. 2009;19[Suppl 1]:S1-60–S1-64)

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INTRODUCTION

The health systems of sub-Saharan Africa have been badly damaged by the migration of their health professionals. The consequences for some countries of losing health workers are becoming increasingly recognized and aired widely in the public media; 1.3% of the world's health workers care for people who experience 25% of the global disease burden. There are 57 countries with a critical shortage of healthcare workers, a deficit of 2.4 million doctors and nurses and midwives. Africa has 2.3 health workers per 1000 population, compared with the Americas, where there are 24.8 healthcare workers per 1000 population (Table 1).[1] The estimated shortage of health workers for Africa is 817,992; correction of the deficit requires an increase in health workers of >130%.[1] The distribution of doctors in Africa is shown in Table 2.[2]

The English-speaking countries (United Kingdom, United States, Canada, Australia, and New Zealand) have a special role in both the genesis of the problem of health worker migration and in its solution, as the migrating health workers preferentially choose to move to these countries. One obvious issue is the vacuum of job vacancies resulting from the inadequate supply of home-trained doctors and nurses. There is also the magnet of well-structured training programs, as well as enhanced financial security.

Migration of doctors to the United Kingdom (UK) reached a peak in 2003 when 18,701 doctors were newly registered with the General Medical Council; 13,967 (74.7%) were from outside the United Kingdom. By 2007 the numbers of international medical graduates (IMGs) registering with the General Medical Council was down to 5055 (45.2%) of the 11,188 new registrations.[3] Interestingly, 1039 of the 5055 were from mainland Europe, and fewer were from Africa and elsewhere. The pattern is similar for nurses. In 2003, UK work permits were approved for 5880 health and medical personnel from South Africa, 2825 from Zimbabwe, 1510 from Nigeria, and 850 from Ghana, despite the fact that these countries were included among those proscribed for National Health Service recruitment.[4,5] An unexpected development was that in March 2006, the UK Department of Health announced retrospectively the withdrawal of the visa category of "permit-free training" for IMGs in the United Kingdom. This change in policy meant that any overseas doctor offered a post in the National Health Service would only be able to take it up if there were no UK or European Economic Area (EEA) appli-

Table 1. Global Health Workforce by World Health Organization Region

Region	Total Number (Millions)	Density per 1000 Population
Africa	1.64	2.3
Eastern Mediterranean	2.10	4.0
Southeast Asia	7.04	4.3
Western Pacific	10.07	5.8
Europe	16.63	18.9
Americas	21.74	24.8
World	59.22	9.3

Source: World Health Organization Report 2006. Available at www.who.int/whr/2006/en/. Accessed 2 February 2009.

Table 2. Doctors in Africa

Country	Total	Per 10,000
Egypt	179900	24
Seychelles	121	15
Liberia	7070	13
Togo	13330	13
Algeria	35368	11
Morocco	1303	11
South Africa	34829	8
Cape Verde	231	5
Mauritius	15991	5
Sao Tome and Principe	81	5
Botswana	715	4
Equatorial Guinea	153	3
Madagascar	5201	3
Namibia	598	3
Nigeria	34923	3
Sudan	11083	3
Cameroon	3124	2
Comoros	115	2
Congo	756	2
Djibouti	140	2
Ghana	3240	2
Swaziland	171	2
Zimbabwe	2086	2
Cote d'Ivoire	2081	1
Democratic Republic of the Congo	5827	1
Gambia	156	1
Guinea	987	1
Guinea-Bissau	188	1
Kenya	4506	1
Mauritania	313	1
Zambia	1264	1
Angola	1165	<1
Benin	311	<1
Burkina Faso	708	<1
Burundi	200	<1
Central African Republic	331	<1
Chad	345	<1
Eritrea	215	<1
Ethiopia	1936	<1
Lesotho	89	<1
Libyan Arab Jamahiriya	103	<1
Malawi	266	<1
Mali	1053	<1
Mozambique	514	<1
Niger	296	<1
Rwanda	432	<1
Senegal	594	<1
Sierra Leone	168	<1
Somalia	310	<1
Togo	225	<1
Tunisia	2245	<1
Uganda	2209	<1
United Republic of Tanzania	822	<1

Source: World Health Organization Report. Part 2: Global Health Indicators. Available at: http://www.who.int/whosis/whostat/EN_WHS08_Full.pdf. Accessed February 2, 2009.

Table 3. Healthcare workers in South Africa in 2004

Indicator	Value
Physicians (number)	34,829
Physicians (density per 1 000 population)	0.77
Nurses (number)	184,459
Nurses (density per 1 000 population)	4.08

Source: World Health Organization Report. 2006. Available at www.who.int/whr/2006/en/ Accessed February 2, 2009.

cant. The result was that all IMGs not having leave to remain would have to return to their country of origin even though only partially through their training.[6] On appeal a judicial review held on April 30, 2008 found that the Secretary of State had acted unlawfully in that the guidance had led to a depressing effect on the expectations of non-UK or non-EEA medical graduates who, before the guidance, would have been able to compete on an equal footing with UK-trained doctors.[7] This meant that doctors already in training would be able to stay in the United Kingdom. New applicants would only be able to apply for service posts, not training posts. The effect—noticeable in Ghana as well as in other African countries—is that far fewer doctors are migrating to the United Kingdom. Whether or not potential migrants will simply choose an alternative destination remains to be seen.

Since 1996, 37% of South African doctors and 7% of nurses have migrated to Australia, Canada, Finland, France, Germany, Portugal, United Kingdom, and United States compared with 34% of educators, 29% of engineers, and 24% of accountants. It is estimated that 23,407 South African doctors are in Australia, New Zealand, Canada, United Kingdom, and the United States (8,999 in the United Kingdom alone); there are also in excess of 10,000 South African nurses in the United Kingdom, with large numbers in New Zealand, Australia, Canada and United States. The World Health Report of 2006 (Table 3) provides data on the number of medical and nursing personnel in South Africa in 2004.[1] Of the 33,347 registered medical practitioners in South Africa in 2004, 5277 (16%) were graduates from Zambia, Zimbabwe, Kenya, Ghana, Nigeria, the Indian subcontinent, and Eastern Europe, illustrating that South Africa is the foremost destination for migrating health workers within Africa.

The greatest challenges to health stem from the global liberalization of trade, with its resultant movement of goods and services (including health workers) within the world economy.[7] With the exception of a few countries, such as the Philippines and South Africa,[1] which have had collaborative health worker migration schemes for some years, migration is seriously affecting the sustainability of health systems of many developing countries. The Organisation of Economic Cooperation and Development (OECD) has estimated that 18% of all doctors and 11% of all nurses working in OECD countries are foreign born. Furthermore, in some European countries the average annual growth rate in the number of foreign-trained doctors in the past 25 years is ≈10%.

The health services of a continent already facing daunting challenges to the delivery of minimum standards of health care continue to be potentially overwhelmed by HIV/AIDS. Initiatives to tackle HIV/AIDS, such as the World Health Organization (WHO) ''3 by 5'' target—to provide lifelong antiretroviral treatment for 3 million people living with HIV/AIDS in poor countries by the end of 2005—required additional health workers;[8] such targets, therefore, were likely to be seriously threatened by the current continuing losses. It is

estimated that, in order to achieve the Millennium Development Goals in sub-Saharan Africa by 2015, an additional 1 million health workers will be required.[9]

THE PROBLEM FOR SUB-SAHARAN AFRICA

WHO recommends a minimum of 2 physicians per 10,000 population; 29 of the 46 sub-Saharan countries are below this level, and an additional 7 are at this bare minimum; only 10 are above. Interestingly, 4 of the 5 North African countries are well above the WHO minimum (Table 2).

In sub-Saharan African countries, the rate of loss of doctors, nurses, and other health professionals by migration has exacerbated the severe shortage; usually migration is to a country better provided with health workers. The problem is that the rate of loss often outstrips production, and production itself is often inadequate to meet the countries' needs. Indeed, in sub-Saharan Africa, two-thirds of countries have only 1 medical school; some have none.[10]

Effect on Source Country

Doctors and nurses are the linchpins of any healthcare system. In countries already severely deprived of health professionals, the loss of each one has serious implications for the health of the citizens. Senior officials in Ethiopia, Nigeria, and Uganda have cited lack of health personnel as the main constraint to mobilizing responses to health challenges.[11]

The United Nations Conference on Trade and Development has estimated that each migrating African professional represents a loss of $184,000 to Africa,[12] and the financial cost to South Africa is estimated at $37 million.[13] Moreover, Africa spends $4 billion a year on the salaries of foreign experts.[14]

The migrating doctor leaves a vacuum. Medical students and young doctors in training need motivated, well-educated, articulate champions of both the health service and their specialty. Loss of well-trained, experienced personnel is perhaps the most serious aspect for the future in many countries and one that monetary compensation cannot replace.

Benefits for Destination Countries

The migration of health professionals from developing countries provides a substantial financial benefit to the economy of developed countries. In the United Kingdom, for example, each qualifying doctor costs £200,000–£250,000 and 5–6 years to train, so in economic terms, every doctor arriving in the United Kingdom is appropriating human capital at zero cost for the use of the UK health services. And the effect is immediate rather than in 5 years' time. In many countries, health professionals from overseas constitute a substantial proportion of the total workforce.[15]

REASONS FOR MIGRATION OF HEALTH PROFESSIONALS

Push and Pull Factors

Published literature on the migration of health professionals documents the "push" and "pull" factors influencing decisions to migrate.[16] A wide range of factors are at work, affecting both temporary and permanent migration. Push factors include: lack of opportunities for postgraduate training; underfunding of health service facilities; lack of established posts and career opportunities; poor remuneration and conditions of service, including retirement provision; governance and health service management shortcomings; and civil unrest and personal security. Pull factors include: opportunities for further training and career advancement; the attraction of centers of medical and educational excellence; greater financial rewards and improved working conditions; and availability of posts, now often combined with active recruitment by prospective employing countries.

In addition to the above factors involved in the decision to migrate, national policies and international agreements such as General Agreement in Trade and Services Mode 4 can also be an influence. Countries such as India and the Philippines have made country-to-country agreements with the United Kingdom, facilitating the employment of their nationals as health professionals; US visa programs target highly skilled persons and offer temporary visas that can become permanent without much difficulty.

MEASURES TO PREVENT THE BRAIN DRAIN

Existing Measures/Codes of Practice

The Commonwealth Secretariat's Code of Practice for the International Recruitment of Health Workers represents a wider international effort in tackling the same issue,[17] raising the possibility of compensation for source countries; the United Kingdom, Canada, and Australia have not signed the agreement. The revised Code of Practice of the United Kingdom published in December 2004 proscribes recruitment of healthcare workers from sub-Saharan Africa.

More Radical Options

Financial Compensation

There is a compelling case for direct financial compensation for those developing countries whose health professionals (usually trained at public expense) have migrated to developed countries. There would be the cost of 5 years' undergraduate medical training as well as compensation for the loss of a fully trained health professional who would be a potential role model and teacher. However, financial compensation cannot be a satisfactory answer;

there is little immediate prospect of developed countries agreeing to direct compensation.

Restrictions on Freedom of Movement

Practically and ethically, it is always difficult to restrict freedom of movement of persons and to try to limit their wish to gain experience in other parts of the world.

The Role of Developed Countries

Developed countries should do the following:

1. Train more doctors and other health professionals to meet the needs of developed countries; norms need to be established for doctors, nurses, and other health professionals.[18]
2. End active recruitment from developing countries.
3. Increase development aid and technical assistance.
4. Match visa to duration of training.

They may also consider compensating the country of origin. Such funds could be directed toward specific measures agreed with each country to assist in recruiting and retaining health professionals, particularly in rural areas (eg assistance with imaginative housing and transport incentives), and to improve in-country postgraduate training programs, including investment in better training and higher salaries for doctors, nurses, and other health workers. If this initiative can be made effective and is replicated elsewhere in sub-Saharan Africa by Britain and other donors, it could make a real contribution to reducing the rate of migration of health workers.

The Role of Developing Countries

Three important roles should be embraced by developing countries:

1) Recruit and train by:

- Selecting medical students unlikely to migrate.
- Encouraging role models to foster enthusiasm and commitment for provision of health care needs of the population.
- Providing appropriate training for needs of the country.
- Offering bonding schemes to delay migration.
- Conducting in-country training.
- Require return to native country after foreign training.
- Training increased numbers

2) Retain healthcare professionals by providing incentives, improved pay and tax incentives, career opportunities, quality of life elements, research budgets and laboratory facilities.
3) Regain healthcare professionals by offering return of talent programs to encourage a permanent return to the native country and in-country postgraduate and specialist training.

An important step for developing countries is to establish their own postgraduate training programs, both to strengthen the morale of local health workers and because lack of such programs is an important factor in migration. Often the process is facilitated by links with established training programs. For example, the University of Bristol, in collaboration with the Tropical Health and Education Trust, runs annual teaching modules for undergraduate and Masters programs in Uganda.[19] A number of UK hospitals and teaching centers have found mutual advantage in establishing working links with similar institutions in Africa,[20] and there can be major benefits for trainees in both countries. In the longer term, college-based training programs should ensure sustainability. For example, the Ghana College of Physicians and Surgeons, inaugurated in 2003, is now well on the way to meeting the training needs of its specialist trainees.

An additional sometimes forgotten element is the uneven distribution of doctors within developing countries.

Table 4. Variation in number of doctors in Ghana

Region	Number of Doctors	Number per 10,000 Population
Greater Accra*	1238	4.25
Ashanti*	502	1.57
Eastern	127	.60
Volta	91	.56
Western	99	.54
Central	76	.48
Brong-Ahafo	86	.47
Upper East	37	.40
Upper West	15	.26
Northern	32	.17

* Regions with an established medical school.

Data derived from the Ghana Medical Association show enormous disparities between regions with a tendency of doctors to congregate in the vicinity of University Hospitals (Table 4).

GLOBAL PERSPECTIVE

The international community can support developed and developing countries in their wish to achieve adequate numbers of health professionals and their fair distribution. There have been a number of initiatives.

In 2002, the International Organisation for Migration, working with WHO, through its program of "Migration for Development in Africa" is attempting to quantify the size of the African health diaspora both within and outside Africa with a view to facilitating the return of health professionals to their own country.

More recently, the First Global Forum on Human Resources for Health (Health Workers for All and All for Health Workers) held in March 2008 has given rise to the Kampala Declaration and Agenda for Global Action, whose 12 points cover what needs to be done.[21] This appeal was taken up at the meeting of the G8 in July 2008, an initiative welcomed by the Global Health Workforce Alliance.[22]

CONCLUSION

During the past 3 years, and since our summary of the problems at that time[18] there have been a number of very recent initiatives. Ghana and Malawi, under the Global Health Workforce Alliance,[22] have produced "country case studies," indicating how they are dealing with the difficulties that face them. Meanwhile, those developed countries most likely to attract migrant health workers, working in collaboration with WHO, need to provide much greater clarity as to the human resources required to maintain their health sectors, both public and private, so that they no longer depend on the flow of health workers from developing countries.

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