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**SOUTH AFRICA'S MEDICAL BRAIN DRAIN:
MYTHS, FACTS AND WHAT (NOT) TO DO**

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Abstract

A global shortage of health professionals makes it relatively easy for doctors and nurses from poor countries to emigrate to rich countries. This has raised fears of a medical brain drain from poor to rich countries and has been the subject of much – impassioned – debate. This paper questions the underlying rationale behind South Africa's current policies toward the medical brain drain. In doing so, it also challenges the dominating view on the medical brain drain: that out-migration of health workers from developing countries has damaging consequences and curbing that migration is pivotal in safeguarding developing countries' health systems. A view which is rooted in a perhaps intuitively convincing assumption that out-migration and low levels of health workers are tightly correlated – that outward migration causes low levels of health workers in South Africa and elsewhere.

This paper will argue that this is specious assumption. Consequently, it will question the calls for restraints on the recruitment of health workers from poor countries. Although such calls may occur to be morally superior, they have been largely ineffective and may be counterproductive in increasing the number of health workers in developing countries. The paper will argue that there is a need for a paradigm shift in the perspective on migration of health workers. The current paradigm is built on questionable theoretical assumptions and hypothesis. It overestimates the effectiveness of its policy recommendations and systematically ignores important negative side-effects of these. Further, it completely ignores positive impacts from out-migration and focuses solely on the negative; its conclusions are, thus, not surprising. Instead a perspective is needed which factors in the positive effects from migration of health workers, such as remittances, diaspora linkages, and so-called brain gain effects – and which provides realistic policy recommendations without counterproductive side effects. The paper will show that such a perspective – or rather a handful of several mutually reinforcing perspectives – is indeed emerging. It will formulate a number of policy recommendations specifically targeted at South Africa's shortage of health workers and how migration can play a role in meeting this challenge.

Introduction

Some nations will grasp this reality [of international migration as inevitable] and creatively work with migrants and migration. Others will lag behind, still seeking restrictive measures to control and cut the level of migration. The future certainly belongs to the former.

-- Jagdish Bhagwati¹

A global shortage of health workers² makes it relatively easy for doctors and nurses from poor countries to emigrate to rich countries. This has raised fears of a medical brain drain from poor to rich countries and has been the subject of much – impassioned – debate. South Africa is argued to play a central role of ‘victim’ as well as ‘executer’ in this process. Victim because the country ‘exports’ doctors and nurses to richer countries and executer because it, in return, ‘imports’ doctors and nurses from poorer countries (Chen and Boufford 2005, JLI 2004, Padarath et al 2003). The South African government frequently points to health worker migration as an exacerbating factor in the country’s health crisis. In 2002, the South African Minister of Health claimed that ‘if there is a single major threat to our overall health effort, it is the continued outward migration of key health professionals, particularly nurses’.³ The South African has consequently implemented policies to curb emigration.

Likewise, South Africa has imposed a moratorium on the recruitment of health workers from other African countries (unless a bilateral agreement exists) in order not to ‘to wipe out [other African countries] health care systems by taking away their health professionals’.⁴

This paper questions the underlying rationale behind these policies. In doing so, it also challenges the dominating view on the medical brain drain: that out-migration of health workers from developing countries has damaging consequences and curbing that migration is pivotal in safeguarding developing countries’ health systems. A view which is rooted in a perhaps intuitively convincing assumption that out-migration and low levels of health workers are closely correlated – that outward migration causes low levels of health workers in South Africa and elsewhere. This paper will argue that this is a specious assumption. Consequently, it will question the calls for restraints on the recruitment of health workers from poor countries. Although such calls may appear to

¹ Borders Beyond Control, *Foreign Affairs*, 2003, 82(1).

² In this paper, the term health workers refers to doctors and nurses.

³ Cited in Clemens and Pettersson (2008: 1)

⁴ Health-Director General Thami Mseleko cited in The Pretoria News, April 10, 2006.

occupy the moral 'high ground', they have been largely ineffective and are counterproductive in increasing the number of health workers in poor countries.

The paper calls for a paradigm shift in perspectives on migration of health workers as the current one is built on questionable theoretical assumptions and hypothesis. It overestimates the effectiveness of its policy recommendations and systematically ignores important negative side-effects of these. Further, it completely ignores positive impacts from out-migration and focuses solely on the negative; its conclusions are, thus, not surprising.

Instead a perspective is needed which factors in the positive effects from migration of health workers, such as remittances, diaspora linkages, and so-called brain gain effects – and which provides realistic policy recommendations without counterproductive side effects. The paper will show that such a perspective – or rather a handful of several mutually reinforcing perspectives – is indeed emerging. These perspectives highlight the need for new policy directions toward international migration of health workers. The paper provides examples of different approaches and argues that South Africa has a potential role as a regional leader in the implementation of these policies.

Brain Drain or Brain Gain?

The term *brain drain* inevitably gives negative associations. It was coined by the UK Royal Society to describe the outflow of scientists from the UK to Canada and the United States in the early 1950s. Then, as now, the dominating view was to regard out-migration of skilled people as negative and stopping that migration as positive. The view is theoretically underpinned by so-called nationalist models, which, based on neoclassical models of economic development, contend that brain drain has adverse effects for sending countries (Bhagwati and Hamada 1974, Bhagwati and Rodriguez 1975).⁵ Brain drain is argued to slow economic growth and adversely affects those who remain, in particular low skilled workers. As a consequence poverty and inequality are likely to increase. The nationalist models point to three types of unfavourable transfers from poor to

⁵ The early literature on brain drain issues also based on neoclassical economics found little reason for concern: global welfare was said to be raised by the rational choice of highly skilled migrants to seek improved incomes abroad (Johnson 1965; Berry and Soligo 1969).

rich countries (Robinson 2007):

- returns on the investment in human capital (education and training) made by sending countries are enjoyed by receiving countries.
- additional jobs that skilled people generate through saving, spending and innovation.
- scale economies arising from the positive impacts skilled people have on their peers such as increased knowledge stimulus, collegial competition and specialisation through division of labour.

According to these nationalist models, brain drain clearly reduces economic growth. Further, it reduces the wages of the unskilled population, probably increases the wages of remaining skilled workers, and hence increases inequality.

Essentially, nationalist models see migration of skilled people as a zero-sum game, with the rich countries getting richer and the poor countries getting poorer. The models are based on specific assumptions: (i) migrants are self-selected out of the general population, (ii) free international mobility of the highly-skilled insures certainty of future migration possibilities, (iii) there is a complete disconnection between the migrant and the sending country and (iv) the migrants were or would have been fully employed in their profession in the country of origin (Docquier and Rapoport 2007, Robinson 2007). Recently, approaches to the brain drain debate have, by relaxing these assumptions, shown that some factors mitigate the negative impact and may even result in an overall positive impact on the sending country from outmigration of skilled people.

By questioning the first two assumptions, a series of studies (for example Mountford 1997, Stark et al 1997, Beine et al 2001, Vidal 1998) suggest that since returns to education is higher in rich countries than in poor ones and the possibility of emigration to rich countries is higher for skilled workers than for unskilled, more people in poor countries invest in education when the prospect of migration is high. But even in the most 'immigrant-friendly' rich countries, immigration is associated with a host of barriers for the skilled would-be migrant, such as visa requirements, quota-restrictions and point systems to evaluate the specific skills of the would-be migrant against the needs of the destination country. Being skilled is not a *carte-blanche* to emigration. Throughout the migration process, the would-be migrant faces the possibility that the migration project must be abandoned. In other words, not all would-be migrants succeed, creating the possibility of a net gain – a brain *gain* – for the would-be sending country from migration.

In some of the first empirical work on brain gain effects, Beine et al (2001) find that emigration of skilled people positively and significantly induces additional investment in human capital, and

that this in turn has a positive effect on economic growth. However, Faini (2003) and Schiff (2005) find that these claims are exaggerated, a position apparently supported by Kangasniemi et al (2007). They argue that a necessary criterion for the brain gain effect to occur within the medical profession is that the person on the margin of taking medical education in the absence of migration has a subjective probability of migration. On the other hand:

‘if this person believed that foreign employers could screen for migrants ability and choose only the better ones, she would also believe that, as a marginal candidate, even after acquiring an education her probability of migrating would still be zero (p. 916)’

Based on a survey of overseas doctors in the UK they conclude that the necessary criterion referred to is not likely to be fulfilled as the UK imposes tight screening of foreign doctors and consequently the link between migration and human capital formation is weak and the brain gain hypothesis, therefore, is unlikely to carry much relevance in practise the medical profession. However, the authors seem to assume that a person who would not have been educated in the absence of migration possibilities is also on the margin in terms of academic ability; they provide no evidence for such a relationship. (They are also reluctant to conclude that brain drain is harmful citing other benefits for sending countries such as remittances and return migration).

Overall however, there is growing empirical evidence in support of the brain gain hypothesis. Beine et al (2008), in the perhaps most comprehensive empirical study to date, find a positive and significant effect from migration prospects on human capital formation in a study of 127 developing countries. The positive effect is, however, at the aggregate level, country by country the study showed more losers than winners, with small, poor countries losing the most and larger countries (for example, India, China, Brazil and South Africa) gaining the most.⁶ Batista et al (2007), however, show a positive and significant effect in the case of Cape Verde, a small, poor country with a high brain drain rate. The authors find that emigration contributes almost 40% to the magnitude of the population of university graduates in the Cape Verde. In other words, a ban on migration from Cape Verde would cause fewer Cape Verdeans to invest in education.

Similarly, Connell et al (2007) assert that people in poor countries increasingly choose health careers because they offer migration prospects. In the Philippines the number of nursing colleges rose from 170 in 1999 to 460 in 2005 with the majority of new colleges being privately financed

⁶ Of course, these large countries represent some 80% of the population in the developing world.

with curricula specifically tailored to foreign health systems (COMPAS not dated, Lorenzo et al 2007). In India migration opportunities are also said to have made the nursing profession more attractive and to have generated an increase in the production of nurses which has raised domestic availability (Calí 2008). Finally, Clemens (2007), using a dataset covering African countries, finds a positive correlation between the number of health workers (doctors and nurses) at home and the number of health workers abroad, each expressed in per capita terms. In other words, a high number of health workers abroad is associated with a high number of health workers at home. Clemens concludes that ‘emigration has caused a greater production of health workers in Africa’ (Clemens 2007: 1).

Turning to the third assumption of the national models – that there is a complete disconnection between the migrant and the sending country – perspectives which highlight diaspora networks have shown that skilled migrants and their various network forms represent important resources for poor countries’ development process. Skilled migrants are conceptualised not as a loss to developing countries, but as an important non-market channel for trade, investment, project finance, and transfer of knowledge and technology (Robinson 2007). Diaspora networks have been described as the actual and digital infrastructures migrants create to actively participate in the developing their countries of origin (Turner 2003). The networks allow for information and knowledge exchange between migrants and between them and their country of origin, and give migrants the opportunity to transfer their expertise and skills to the country of origin, without necessarily returning home permanently. In this way, the country of origin has access to the knowledge and expertise of the migrant, as well as the networks that the migrant forms part of in the host country.

The empirical evidence for the developmental value of diaspora networks is growing (for example, Kuznetsov 2006, Biao 2005, Saxenian 2002, Van Hear et al 2004). Some evidence demonstrating network effects particularly pertaining to the health sector is also emerging. Teferra (2005) highlights the role of the Ethiopian North American Health Professionals Association (ENAHPA) in facilitating knowledge transfer between several U.S. universities and Addis Ababa University and the training of Ethiopian health workers via cross-Atlantic videoconferences in the use of Antiretroviral drugs in resource limited settings. Van Hear et al (2004) reports that Ghanaian diaspora networks in the UK, including the Ghanaian Nurses Association, have supported the construction of medical laboratories and purchase of medical equipment in Ghana. Devane (2006) reports that the large Indian-American medical diaspora are increasing taking-up sabbatical residencies in India and are participating in the creation of an Indian medical testing industry.

Remittances, another link between migrants and the country of origin which may generate positive effects, are a major source of income for many developing countries. Compared to the flow of official development assistance (ODA), remittances are nearly three times higher and only slightly smaller than the flow of foreign direct investments (FDI) to developing countries (World Bank 2007). Kugler (2005) show that in Colombia remittance receiving households spend more on education than non-remittance receiving households, creating the potential for brain gain effects. It is impossible to say how much health workers remit and whether they remit more or less than other migrants. Faini (2007) finds that skilled migrants remit less than unskilled migrants as they tend to migrate with their families and on a permanent basis. This, however, does not mean that health workers' remittances are negligible. WHO (2006) sees remittances as a redeeming feature of international health worker migration which is associated with a decline in poverty in poor countries. Kangasniemi et al. (2004) show that 45% of Indian doctors working in the UK remit income to their home country and that remitters transfer on average 16% of their income, while Connell and Brown (2004) find that Tongan and Samoan nurses in Australia remit on average USD 2,688 per annum and that this amount exceeds the initial investment in their training and remains constant over time.

Stillwell et al (2003) and Labonte et al (2006a) argue that although remittances from health workers provide some compensation for sending countries, they are consumed rather than invested back into the health system and are thus do not contribute directly to health systems in sending countries. An obvious counter argument to this logic is that if consumption leads to improved nutritional intake and access to healthcare (including pharmaceuticals), better housing, more education and other forms of consumption then this should improve the overall health of individuals, positively impact the public health situation and contribute to the overall welfare of the sending country – an essential purpose of training health workers in the first place.

Return migration - or brain circulation - is another channel in which migration can benefit countries of origin. Dos Santos and Postel-Vinay (2003) argue that a beneficial brain drain can emerge from return of skilled migrants even in a situation where the share of skilled people decreases in the sending country as a result of migration. This happens if returnees have gained knowledge and experience while away and contribute to the diffusion of this in the sending country after return.

However, there is limited evidence that return migration is significant among skilled migrants. Borjas and Bratsberg (1996) show that, in general, the less competent return first and return migration for skilled migrants is low unless preceded by sustained economic growth in the sending country. Thus, return migration is more a result than a trigger of development (Docquier

and Rapoport 2007). This implies that many poor countries have a potential pool of skilled workers – within health and other professions – living overseas which they will be able to tap into as (or if) their economies grow.

The validity of the fourth assumption of the national models – that the migrants were or would have been fully employed in their profession in the country of origin – is doubtful as well. In Kenya, for example, the number of health workers who work outside the public sector or entirely outside the health sector exceeds the number of health workers abroad (Clemens 2007). WHO (2006) estimates that 5,000 Kenyan nurses are not currently working in their field and points to the paradox that health worker shortages and large numbers of unemployed health professionals often coexist. Chaudhury et al (2006) show that during unannounced visits to government-run primary health facilities in Bangladesh, Ecuador, India, Indonesia, Peru, and Uganda on average 35% of health workers (ranging from 25% in Peru to 40% in India and Indonesia) were absent without explanation even though they were formally employed and on the pay roll – so called ‘ghost workers’.

In most countries – rich as well as poor – health workers prefer to work in urban areas making it difficult for rural areas to fill vacancies. Dussault and Franceschini (2006) argue that urban, wealthy areas often have too many staff, particularly doctors, as in Côte d’Ivoire, where doctors remain unemployed in Abidjan despite vacant posts in rural areas. Maniple (2004) reports that in Uganda the ratio of health workers to filled positions is 40% in some districts, while other districts have a ratio of 265%. In Ethiopia, Serneels et al (2005) show that 67% of nursing students and 92% of medical students would prefer to work in an urban setting. In Ghana, in 1997, 87.2% of all doctors worked in urban areas. According to WHO (2006) such rural-urban imbalances are common place in poor countries. Skeldon (2005: 22) argues that:

‘the origins of health professionals in developing countries are rarely to be found in the places of greatest deprivation, the rural areas. They come, hardly surprisingly, from the urban areas, and are likely to be from elite or at least wealthy families. It is often difficult to encourage medical personnel to serve in rural areas. (...) Hence, the emigration of doctors is unlikely to be responsible for any reduction in services in those areas of greatest need.’

Summing up, Clemens (2007) finds, based on data from Clemens and Pettersson (2008), that no negative effects of emigration on domestic stocks of health workers in African countries can be observed. He concludes that African countries’ generally low staffing levels are not related to international migration of health workers. Additionally, migration is a vital part of and sometimes

a necessary precondition for quality of training for health workers, particularly in developing countries: Sub-Saharan African countries each have only 1.8 internationally recognised medical schools on average and 11 are without such schools (Clemens and Pettersson 2008, Hagopian et al 2004). This is a significant issue: 60-70% of foreign doctors coming to the UK for training are believed to have stayed on and worked beyond their training periods (Kangasniemi et al 2007). The high emigration rates of many small African countries may well be explained by this. Lastly, according to OECD (2007), the number of health workers from poor countries working in rich countries represents only a fraction of health sectors needs for human resources as estimated by the WHO (12% in the case of Africa, for example). Thus, stopping migration would far from solve the shortages of health workers in poor countries and as shown above there is a real possibility that it may actually worsen the situation.

Policy Directions: Toward a Paradigm Shift

Despite the mounting evidence that the national model for understanding international migration is based on specious assumptions, the dominating view on the medical brain drain completely ignores alternative perspectives that show positive outcomes from international migration without examining the latter's theoretical consistency, empirical evidence or policy implications. Instead it insists that the case for restraining the recruitment of doctors and nurses from poor countries is 'obvious' (Kapur and McHale 2005) as the medical brain drain is a 'perverse and obscene reversal of aid flows' (Tannock 2007) and that rich countries should adopt 'medical exceptionalism' (Alkire and Chen 2004) to stop the 'fatal flows' (Chen and Boufford 2005) while continuing international recruitment should be seen as an international crime (Mills et al 2008).

The policy options that this view prompts are not surprisingly aimed at stopping or at least vastly reducing the flow of health workers from poor to rich countries. Particular attention has been given to rich country implementation of codes of practise for ethical recruitment of poor countries' health workers. A few such schemes have been implemented with limited, if any effect (Pagett and Padarath 2007). Additionally, they arguably impose increased costs on migrants and push them into irregular channels, while deskilling them in the process. Moreover, may be seen as a discriminatory, unfair and even racist violation of primarily African and Caribbean health workers' human rights (Mensah et al 2005, Gent and Skeldon 2006, Labonte et al 2006b).

Policies aimed at curbing outflow that have been implemented in the sending country include bonding and compulsory service. These schemes, however, have proven difficult to manage and enforce as they have been plagued by corruption and favouritism. But even if these managerial problems could be overcome, such policies may still deter people from entering the health professions with negative long-term consequences (Serneels et al 2006, Wibulpolprasert and Pengpaibon 2003).

Overall it is obvious that these policies have been introduced well in advance of balanced considerations of their likely effects. Conversely, other perspectives have advanced approaches that regard international migration of health workers as a part of a solution rather than as an overall problem. Some have arrived at such policies inspired by the perspectives presented above, others as result of a more pragmatic analysis: by any realistic assessment future migration levels are likely to grow and policy efforts to stem migration of health workers will be largely ineffective.

Skeldon (2005) argues that in resource constrained settings a two-tier system of training may be appropriate. In such a system, doctors and nurses are trained to international standards and it is accepted that losses will occur, but many others could be trained to more basic levels of health care – so-called auxiliary health workers. This category would not be able to migrate to rich countries on the basis of their training but would still be of enormous benefit to countries with serious deficits in ‘real’ health workers. They also demand less training at a lower cost than nurses and particularly doctors (WHO 2006). This option has been criticized for sanctioning a second-class healthcare system for poor countries that would not be accepted in rich countries (Labonte et al 2006b). Conversely, it could be argued that second-class systems are already a reality in many poor countries and auxiliary health workers could contribute to improvement of these. Perhaps one should be wary of letting the best stand in way of the good.

The above option accepts migration of health workers trained to international standards as an unavoidable and perhaps even desirable reality. Other perspectives seek to manage their migration. Not to stem the flows but to turn the process – to use a cliché – into a win-win-win situation, in which the migrant, the sending and the receiving country all benefits. te Velde and Grimm (2005) argue that temporary migration schemes for health workers have the potential to turn ‘the brain drain into a brain gain’. Such schemes could be coupled with direct support to training of health workers in poor countries through, for example, funding and twinning arrangements between institutions (such as universities, nursing colleges and hospitals) in rich and poor

countries. Since training costs are much lower in poor countries than in rich countries this would provide a global public good (health) to the benefit of receiving and sending countries alike.⁷

te Velde and Grimm argue that such temporary migration schemes should where possible be bound under the World Trade Organization's General Agreements on Trade in Services (GATS), which through the so-called GATS 'mode 4' negotiations, in principle, provides a multilateral forum for 'reducing barriers to temporary movement of natural persons' and a mechanism for enforcing rights to temporary movement. However, given the current impasse of WTO negotiations, not least on services (and even more for mode 4 type services), regional and bilateral agreements seem a more appropriate forum for negotiations and management of such schemes.

The Caribbean region, in a context of a shortage of nurses with an average vacancy rate of 42% across the region, initiated the Managed Migration Program in 2001. The programme is based on two fundamental values: (i) nurses have the right as individuals to freedom of movement within and beyond the region and (ii) all people have the right of access to high-quality health services and programs. The program consists of a number of interesting models for managed migration of nurses with possible wider applicability:⁸

1. *Jamaican nurses working in Miami – temporary migration*: Jamaican nurses work in Miami two weeks per month and in Jamaica for the remainder of the month gaining skills, earning more money to support their families and assist their own countries staffing needs.
2. *Granada/Antigua partnership in training – regional cooperation*: Grenada has opened up its excess training capacity to nursing students from neighbouring Antigua at a minimal cost.
3. *St. Kitts International School of Nursing*: In a partnership between a foreign investor and the Government of St. Kitts, an offshore nursing school – the International University of Nursing – has been established in St. Kitts to serve the global markets need for nurses. It is projected to admit around 1,500 students per year from around the world. China plans to initially send and finance 150 Chinese students. The School provides a number of full

⁷ Along similar lines and in a Canadian context, Labonte et al (2006c) suggest that Canada could outsource some of its training of health workers to poor countries, securing through faculty support and exchange that training standards are met. In this way, Canada would be purchasing training at costs lower than those in Canada but high enough for the host country to turn a profit, which could be directed at expanding the training of its own health workers.

⁸ All examples are taken from Salmon et al (2007), who also provides further background and discusses the rationales and early results.

scholarships for nationals of St. Kitts and shares resources and expertise with a local community college.

4. *The Homecoming Program*: Caribbean nationals are invited by their country of origin to volunteer to work and share nursing experience. Examples include 52 nurses (members of the Barbados Overseas Nursing Association of the United Kingdom), who came home to identify specific areas for collaboration with the Barbados Registered Nurses Association, and a team from the Guyana Nurses Association in the United Kingdom runs yearly screening tests for deafness in Guyana.
5. *International recruitment – health and tourism model*: Taking advantage of the Caribbean’s position as a popular tourist destination, a program seeks to recruit nurses from rich countries to work in Caribbean countries for 6-12 months receiving local wages. The pilot stage saw 30 responses on the first day to an advertisement in a British professional nursing journal.
6. *Caribbean-Canadian proposal*: Bilateral discussions with Canada to channel migration into a temporary movement scheme.

A number of countries, such as the Philippines, India and China, tend to view health workers as a legitimate export (Pittman et al 2007). The migration model employed in these countries could be called market managed migration (although encouraged and facilitated by governments), since it is not based on international agreements but on demand within in an increasingly globalising healthcare labour market. In the Philippines, domestic and foreign demand for nurses has generated a rapidly growing nursing education sector of about 460 nursing colleges which graduate about 20,000 nurses annually creating a net surplus of registered nurses (Lorenzo et al 2007). In India, recruiting agencies partnering with private hospitals are mushrooming. They reportedly invest an average USD 4,700-7,000 in training a nurse, and earn up to USD 47,000 once one is placed abroad. In some Indian states, the authorities have entered this means for facilitating international nurse migration. The government of Tamil Nadu has, for example, created the Overseas Manpower Corporation Limited (Khadria 2007). Similar developments in China are likely to make the country an important source of migrating nurses in the future (Fang 2007). Record and Mohiddin (2006) argue that even Malawi, one of the poorest countries in the world, could benefit from such a migration model.

Cuba has made export of health workers an integral part of its foreign policy. Between 1960 and 2000, an average of 3,350 Cuban health workers worked abroad every year. Since then things have been scaled up. In 2004, 18,425 Cuban health workers were working in 30 Latin American countries, 1,994 in 26 African countries, and 145 in 22 Asian countries. The scaling-up is partly a result of the Integrated Health Program (Programa Integral de Salud – PIS), which was set-up in

1998. At no cost for the receiving country, the program provides Cuban doctors to rural or peripheral urban areas in 24 poor countries: in 2004, 1,560 Cuban health workers worked in 6 Latin American countries, 1,290 in 15 African countries and 28 in 3 Asian countries (De Vos et al 2007). Cuba has around 20,000 Cuban doctors and other skilled professionals stationed in Venezuela through the so-called Doctors-for-Oil programme between the two countries. Cuba is believed to receive oil to a value of USD 400 million per year in exchange (Parra-Bernal 2006). Another aspect of the PIS program is the Latin American School for Medical Sciences (ELAM), which was opened in 1998. In 2007, it had more than 10,000 students, all from poor countries mainly in Latin American and Africa. Tuition, accommodation and board are free and students receive a small stipend (all covered by the Cuban government). After graduation most return to their home countries (although some will stay in the Cuban health system) (De Vos et al 2007).

All of the above described approaches to managed migration come with important caveats. The Caribbean models are small in scope and, in some cases, seem yet to have to make the jump from paper to reality. The market managed models such as in the Philippines are associated with concerns about quality of training in the fast growing private sector, private sector poaching of public sector educational capacity, a fall in the attractiveness of medical training (to become a doctor) and a growing number of Filipino doctors retraining as nurses. As for the Cuban model the nature of the current Cuban political and socioeconomic system weakens its direct applicability for other countries. For the same reason, the level of voluntariness of the involved health workers can be questioned (although some Cuban doctors in, for example, South Africa have been willing to stay on after completion of initial contracts). Yet, the model does show that 'mass-production' of doctors seems to be more a question of willingness on behalf of those with the financial capabilities (such as international donors) than lack of training capacity. It may also show that rich countries have a potential role to play in providing technical assistance in the form of health workers to poor countries.

These caveats, however, are not insurmountable and the models provide at least a starting point for new and much-needed policy directions on international migration of health workers in a situation where the current ones are impotent and very likely counterproductive. Some of the new policy directions see a substantial role for the private sector. This sector is regarded with suspicion, if not completely ignored, by the dominating view on the medical brain drain which is not only biased away from seeing positive outcomes from migration but also from seeing positive outcomes from private sector activities. In reality where the private health sector has momentum and is actively involved in the training of health workers in many poor countries, it may be prudent to ask whether it is the colour of the cat or its ability to catch mice that matter the most.

The Case of South Africa: Policy Recommendations to Manage the ‘Medical Brain Drain’

South Africa has a shortage of health workers. In 2004, it had a doctor density of 0.77 doctors per 1000 population and a nurse density of 4.08 per 1000 population. This is favourable relative to its neighbours but is well below that of rich countries and below that of socio-economically comparable countries. The low density translates into high numbers of vacancies in the South Africa health sector. The public sector had 43,671 vacancies for all categories of health workers in 2007. This meant that 33.3% of all health worker posts were vacant, up from 27.2% in 2005. 34.1% (or 3,396) of the medical practitioner (non-specialist doctors) posts were vacant, while 36.3% (16,372) of the registered nurse posts were vacant (Day and Gray 2007). The private hospital sector too is chronically understaffed with a vacancy rate for registered nurses at 24% and an ‘even greater shortage of specialised registered nurses’ (this sector does not employ doctors) (HASA 2008: 49).

As does the minister of health (see introduction above), the South African media frequently explain the shortage of health workers by pointing to emigration. According to the Financial Mail (9 May 2008) the shortage ‘is mainly the result of health professionals emigrating’, while Pretoria News (6 August 2007) reports that ‘South Africa is bleeding skilled [health] personnel at an accelerating rate’. Several academic contributions back this perception. Rogerson (2007: 4) concludes, based on a survey of recruitment ads in a South African medical journal, that South Africa has ‘haemorrhaged an important segment of its most experienced medical personnel’. Labonte et al (2006a: 4) report anecdotal data from various media and health industry sources such as ‘at least 5,000 South African doctors moved abroad in 2002’ and ‘over 25 per cent of the 90,000 registered nurses in South Africa left the country in 2002 alone’. The authors provides no reflection on the reliability of such claims or on how these dramatic numbers are consistent with the fact that the number of health workers employed in the public as well as the private sector in South Africa has risen steadily since 2002 (see below).⁹

⁹ Financial Mail (9 May 2008) reports a similar dramatic anecdotal fact: 10,000 South African medical students are emigrating a year. How this is possible in country with a total yearly enrolment of 1,600 students in 8 medical schools is left unexplained.

Recent published systematic data (OECD 2007, Clemens and Pettersson 2008 and Docquier and Bhargava 2006)¹⁰ try to correct the misunderstandings anecdotal evidence such as that presented above has given rise to. In the context of South Africa, a much more conservative picture of the medical brain drain emerges from these data sets. OECD reports that, circa 2000, 7,355 or 17.4% of all South African doctors were working in OECD countries, while the same was true for 6,016 or 3.2% of all nurses. Clemens and Pettersson report that, circa 2000, the number of South African doctors working in nine main destination countries used as a proxy for the world¹¹ was 7,363 (21% of all South African doctors), while the same numbers for nurses was 4,844 (5%). Docquier and Bhargava report that, in 2000, 4,412 or 13.2% of all South African doctors worked in OECD countries, while in 2004 the same numbers were 4,769 and 13.1% (they do not provide data for nurses).

These numbers are hardly consistent with a term such as 'haemorrhage'. Of course, it is possible that the migration of health workers has accelerated dramatically since 2000 (and 2004) but this is not very likely. As mentioned, the number of health workers in the public sector has increased steadily since 2002 (after having dropped steadily between 1998 and 2002) (Day and Gray 2007). Likewise, two of the three leading private hospital groups report increased staff levels year-on-year (Netcare 2007, Mediclinic 2007). These increases are not caused by a rise in training: intake of nursing and medical students have remained steady. Carrington and Detragiache (1998) show in a cross-country comparison of the brain drain that, in 1990, 7.9% of South Africans with a tertiary education were living in the OECD countries. While expecting to find an increase due to a reported strong rise in emigration from 1990 to 2000, Stern and Szalontai (2006) found that this had dropped to 5.4% by 2000. The authors attributed this finding to a rapid increase in tertiary educated individuals over this period. This is supported by Beine et al (2008) who show that South Africa because of the brain gain effect is positively affected by migration (see above). Further, Rogerson (2007) show that the trend towards migration of South African health workers for permanent positions has slowed and been replaced by temporary migration to the Gulf countries as new trend. Indeed, it appears fair to conclude as Skeldon (2005: 21) does: 'it seems clear that for South Africa (...) the brain drain is more perceived than real'.

Instead, the shortage of health workers is primarily caused by two factors. First, South Africa simply does not produce enough health workers. The current production fails to keep pace with

¹⁰ See Clemens and Pettersson (2008) for a discussion of the quality of the different data sets.

¹¹ Eight of the nine (the ninth country is South Africa) account for 94.2% of all African-born, university-educated people residing in any OECD country in 2000.

population growth. The public sector nursing colleges have gone through a rationalisation process which has resulted in a reduction in the number of new nurses. In 1996, 2,629 registered nurses graduated. This compares to the 1,493 nurses from public colleges graduating in 2006 (universities have graduated a slowly increasing number of nurses in the same period – 534 in 2006 against 360 in 1996). The private sector has consequently increased its training of registered nurses from 1,169 in 1996 to 2,364 in 2006. As a result, the overall number of newly registered nurses in 2006 was 4,391 against 4,158 in 1996 with 54% trained in the private sector in 2006. Including more basic levels of nurses the private sector now trains around 6,000 nurses every year (HASA 2008). Meanwhile, enrolment of medical students has remained at around 1,600 between 2002 and 2004 (Wadee and Khan 2007). There are no private medical schools. The shortage of nurses is projected to be over 18,000 by 2011, while the shortage of doctors (general practitioners) is projected to be 2,500 in 2014. However, these projections are set against aggregated targets. Hence, they do not capture geographical or public/private sector disparities, which are at the crux of the issue.

The second reason for the shortage of health workers is the inability of the South African health system to attract back into the health workforce the around 35,000 nurses (vastly more than the estimated number of health workers working outside the country) that are registered as nurses and living in the country but do not practise or are unemployed (OECD 2004). This reflects the difficulties virtually all countries have in attracting health workers to take-up employment in rural and deprived urban areas and questions whether such areas would gain from a substantial return of South Africans working abroad or an increase in domestic production without effective policy interventions to assure this. Thus far, the South African government response has been to implement a community service requirement scheme. Since 2001, new medical graduates have been required to carry out a year of community service (since extended to two years). They are assigned to services outside academic medical teaching centres, often in remote locations to try to remedy disparities in the urban and rural spread of health workers. However, the scheme has been subject to much criticism. Ncayiyana (2005), for example, argues that

‘young doctors doing their obligatory community service in far-flung rural hospitals under highly stressful conditions, with poor infrastructure and without proper supervision, are likely to be forever immunized against working in such hospitals in the future and therefore choose to practise in the private sector or migrate overseas’ (cited in Rogerson 2006: 13).

Interviews with emigrated South African doctors reveal that some of them left to avoid the compulsory service (IOM 2007). Likewise, Mattes and Mniki (2007) find that a range of government

attempts to curb emigration, including community service requirements, only increase South African university students' probability of emigrating.

In 2006, the government released a framework plan for meeting the shortage of health workers. The plan is wide-ranging and contains proposed initiatives on, *inter alia*, improved remuneration and increased training of health workers. In relation to emigration it acknowledges that 'migration is not something that could or should be stopped' and South Africa's contribution to the global health worker market must be managed in a way that contributes to the skills development of health workers through bilateral agreements with various receiving countries involving the placement of South Africans in institutions that would allow them to acquire such skills (DoH 2006). This is a very ambitious plan that would alter the nature of South African health worker emigration. However, the type of bilateral agreements it is hinging its implementation on would allow only health workers that can be expected to gain skills through emigration to migrate. As argued above international agreements of such restrictive nature are ineffective, counterproductive and in violation of health workers' human rights and thus, unlikely to succeed.

As for immigration, the plan to renew a mandate issued in 1995 prohibiting the recruitment of health workers from other African countries into South Africa. Specifically, the mandate states that South African employers will not be allowed to recruit from other poor countries, except under government-to-government agreements. The mandate makes it difficult for non-South African health workers to obtain a work permit in South Africa, even those from rich countries (Chanda 2007).¹² Under a bilateral agreement with Cuba, 450 Cubans have been working in rural areas in South Africa since 1995 (in 2006, 146 Cuban doctors were working in the country) (Ngalwa 2006). A similar agreement have with Tunisia has seen 50 Tunisian doctors deployed in rural hospitals and clinics in South Africa since 2007.¹³ A new development is that private hospital groups have been allowed to 'import' nurses from India. One group, Mediclinic, has recruited 12 nurses from India on two year contracts, and is processing a further 131 applications. Another group, Netcare, has applied for a corporate permit to recruit at least 500 nurses from India, and Life Healthcare intends to do likewise (HASA 2008). Mediclinic received 3,500 applications from Indian nurses for 120 positions (Caelers 2008). Moreover, the government even seems to be

¹² Clemens and Pettersson (2008) estimate that, circa 2000, 1,434 doctors and 239 nurses from other Sub-Saharan African countries worked in South Africa. Additionally, 834 doctors and 261 nurses from nine OECD countries worked in South Africa. These numbers are unlikely to have increased significantly since. Consequently, South Africa's reputation as a major receiving country of African doctors is largely misplaced.

¹³ *Tunisian doctors arrive*, IOL online, April 25 2008.

abandoning its long standing reluctance to issue work permits to doctors from other African countries: over a 16 month-period from 2007 to 2008, 317 African doctors and 47 doctors from non-African developing countries have been appointed to public sector posts around the country.¹⁴

The South African government's stance on international migration of health workers seems more and more to combine a strong rhetorical stand against particularly immigration but also emigration, with policies that are moving toward embracing both through various ad hoc responses. Meanwhile, South Africa places too much importance on migration in explaining the low-levels of health workers and too little on positive effects from migration – both in terms of direct benefits such as remittances¹⁵ and in terms of the potential of migration to increase the production of health workers and, through managed migration schemes, balance the rights of health workers to migrate with all people's right to access to high-quality health services and programs.

Nelson Mandela, in the late 1990s, condemned South African health workers who were leaving South Africa to work in richer countries as 'cowardly and unpatriotic' citizens who were perpetrating a 'fundamental betrayal of the nation'.¹⁶ While Mandela's frustration may have been understandable in the historical context of post-Apartheid South Africa, it makes little sense from a developmental perspective. As Marks (2006) argues, mobilizing South African diaspora networks is crucial to development planning. A survey of skilled South African migrants indicates that 11% are already involved in and 40% would be interested in professional exchanges with their home country. Such exchanges could take the form of business and investment links, but also teaching, mentoring or coaching. Respondents to the mentioned survey also called for a signal from the South African government that value is placed on the diaspora community, which would go a long way towards mobilising the skilled South Africans living outside the country.

Instead of a lukewarm *de facto* acceptance of migration as inevitable, the South African government could start to manage the migration of health workers to spur training of an increased number of health workers and secure a beneficial migration pattern. A first step would be to consider the different models of managed in- and out-migration described in the previous section. South

¹⁴ *Hundreds of foreign docs working in SA*, IOL online, March 27 2008.

¹⁵ A survey of overseas nurses in the UK showed that half of the South African nurses remitted a quarter or more of their income (Buchan et al 2005).

¹⁶ Cited in Tannock (2007).

Africa could, for example in the context of SADC¹⁷, implement temporary migration schemes accompanied by support to increased training of health workers throughout the region. Such support could take the form of twinning arrangements between South African medical schools and nursing colleges and similar institutions in other SADC countries, training of SADC citizens in South Africa and/or direct funding of training in other SADC countries (the latter is perhaps a task more appropriately assigned to various international donors – perhaps even as part of Aid for Trade programmes).

As for out-migration of South African health workers, the government is incapable of stopping it and current policies towards this end seem to do little more than accelerate it further. As argued above the government could do more to develop diaspora networks both to enjoy positive network outcomes as described above but also the further return migration which is more likely to happen if migrants maintain ties to home. It could attract more train more candidates from rural and other underserved areas as health workers who are much more likely to work in such areas after graduation. It could train more auxiliary health workers from and in rural settings. Lastly, it could facilitate temporary migration for public sector health workers thereby making the public sector more attractive.

In several countries, such as the Philippines and India, the private sector has played an important role in training of an increased number of health workers. This is equally true for South Africa in terms of nurses but not for doctors. According to Wadee and Khan (2007) the private sector in South Africa is exerting growing pressure on government to permit private medical schools. The authors argue that such schools have the potential to benefit both the private and the public sector by boosting the currently inadequate student intake levels. The government need to facilitate a larger role for private sector in meeting the shortage of health workers - in relation to increased training as well as in management of migration.

¹⁷ Southern African Development Community (SADC) consisting of 15 member countries: Angola, Botswana, DR Congo, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania, Zambia, and Zimbabwe.

Conclusion

This paper has called for a paradigm shift in perspectives on migration of health workers. It has argued that the current one is built on questionable theoretical assumptions and hypothesis, which in sum argues that migration of skilled people as a zero-sum game, with the rich countries getting richer and the poor countries getting poorer. It, thus, completely ignores positive impacts from out-migration and focuses solely on the negative (of which some may be positive rather than negative). Additionally, it overestimates the effectiveness of its policy recommendations and systematically ignores important negative side-effects of these.

Instead this paper has argued that a perspective is needed which factors in the positive effects from migration of health workers, such as remittances, diaspora linkages, and so-called brain gain effects – and which provides realistic policy recommendations without counterproductive side effects. The paper has shown that such a perspective – or rather a handful of several mutually reinforcing perspectives – have indeed emerged. These perspectives highlight the need for new policy directions toward international migration of health workers. The paper has provided examples of different approaches to managing international health worker migration as part of a solution rather than as an overall problem.

The paper has shown that in the case of South Africa ‘the medical brain drain’ is perceived rather than real. Fuelled by myths rather than facts, South Africa has wrongfully been given a dual role of ‘victim’ and ‘executer’ in the process of international health worker migration. Victim because the country ‘exports’ doctors and nurses to richer countries and executer because it, in return, ‘imports’ doctors and nurses from poorer countries. The South African government has built its policies in accordance with this misconception by seeking to curb out-migration and imposing a moratorium in in-migration.

However, this paper has shown that its stance on international migration of health workers seems more and more to combine a strong rhetorical stand against particularly immigration but also emigration, with policies that are moving toward embracing both through various ad hoc responses. Instead of this lukewarm *de facto* acceptance of migration as inevitable, the paper has argued that the South African government could start to manage the migration of health workers to spur training of an increased number of health workers and secure a beneficial migration pattern through various managed migration initiatives. South Africa has a clear potential role as a regional leader in this context.

While there is no established 'golden standard' on policies towards international health worker migration, the South African government as well as any other government (and stakeholders of all varieties) would be well-advised to have the words of Jagdish Bhagwati, which opened this paper, in mind when establishing policy directions on the issue.

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