

Brain drain of doctors from southern Africa: brain gain for Australia

Sumit S Oberoi and Vivian Lin

Abstract

"Brain drain" is the depletion or loss of intellectual and technical personnel. The United Nations defines it as a one-way movement of highly skilled people from developing to developed countries that only benefits the industrialised (host) world. Today, brain drain is a major problem facing less developed countries, while Australia and other developed countries are the beneficiaries. Brain drain is reported to have direct negative impact on the population's health status in the donor country, with associated consequences for the productivity and welfare of the population.

This paper reports on a qualitative study to understand the key factors behind brain drain from the perspective of the migrating doctor, and to consider possible solutions. Interviews were conducted with doctors who have migrated to Australia from southern Africa to explore reasons for brain drain. Specifically, the study tests the supposition that push factors play a much greater role than pull factors, and identifies which push factors are most important. Strategies to prevent brain drain from this depleted labour region are considered.

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BRAIN DRAIN IS THE LOSS of intellectual and technical personnel. Numerous studies have observed this phenomenon in non-health care sectors such as information technology. Attention to the problems in health care is required, as skilled individuals migrate from less developed countries with poorly resourced health care sys-

What is known about the topic?

Although research has been conducted throughout the world on "brain drain" there is limited research in health care, particularly in terms of the drivers behind the phenomenon.

What does this paper add?

This paper adds further understanding into the brain drain of doctors from southern Africa to Australia. Push factors, such as lack of job satisfaction, poor working conditions and the prevalence of HIV/AIDS, were found to be more important than the pull factors associated with Australia.

What are the implications for practitioners?

The authors suggest the need to consider both the endogenous and exogenous push and pull factors in designing policies to address brain drain among the health care workforce. ♦

tems and low levels of economic and social development. Movement of health care personnel tends toward developed countries, which are characterised by better-resourced health care systems, and greater economic and social stability.

Brain drain costs and benefits

Although brain drain is often depicted as a loss for the less developed world, there are costs and benefits for both the recipient and source countries. The benefits are remittances for the source country. Remittances from international migration can contribute to the overall economy of the source country. Some countries such as the Philippines have systematically trained more doctors than required so they can be sent abroad and the economy can benefit from the remittances.¹ Cuban doctors have also worked in Zimbabwe and South Africa, earning and remitting funds back home. Remittances of the highly skilled may flow through the formal banking sector and be associated with higher rates of savings and inter-

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est income.² Many economists suggest that remittances have a multiplier effect to increase national income,³ increasing retail activity and introducing more money into the economy, creating more jobs.

As skilled health workers leave, the remaining workforce is faced with greater workloads, leading to declining job satisfaction and weakening of the health care system. Remittances may not boost the economy if the costs of lost personnel and skill are greater. The literature contains debate as to whether remittances truly boost economic development if remittances are not spent on productive investments and are spent upon basics such as food, medicine and clothing. Remittances may stimulate imports and not domestic manufacturing, which does little to boost domestic production, employment or export sectors.³

The costs include shortages in human resources, with a loss of technical skills and deterioration in the working conditions of the remaining health workers. This may lead to decline in the quality of care, and another likely consequence is the inability of the health care system to achieve the health policy objectives of access and equity. The donor country is often in greatest need of health care, with a low doctor to population ratio and insufficient supply of health workers. The loss of one doctor will have greater impact on the developing country than the gaining of one doctor will have on a developed country.⁴

At the same time, migration can influence the capacity to provide quality training to new doctors and the research capacity of medical schools.⁵ Southern Africa has seen a forced closure of medical research institutions because of massive emigration flows of highly-skilled doctors.⁵

For recipient countries, such as Australia, there is potential for substantial savings in training and education from this form of “free riding”.⁶ Labour shortages can be filled as foreign health professionals migrate and work in less desirable positions. The majority of immigrating health personnel settle in more rural, underserved, high

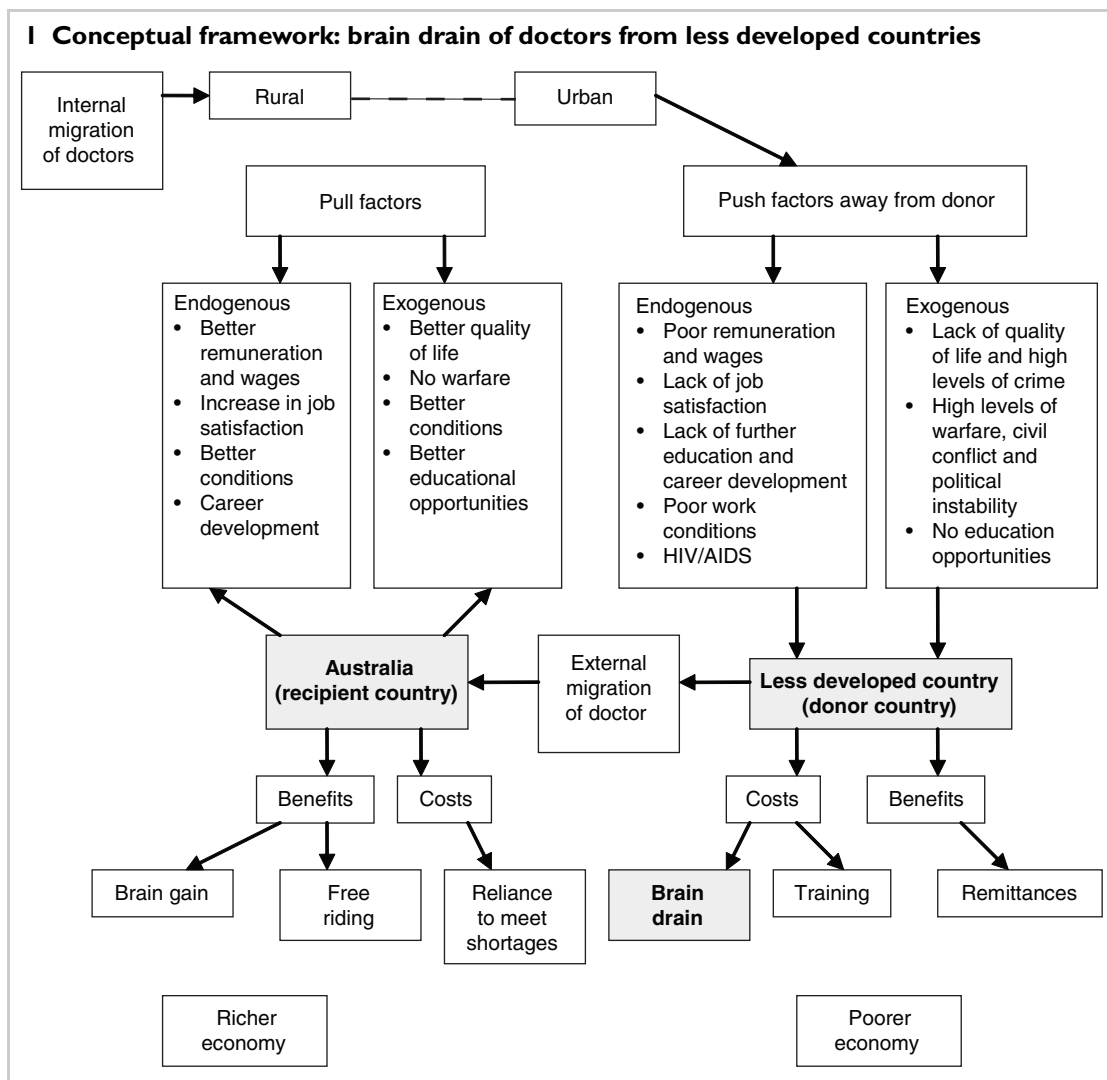
need, and deprived areas.⁷ With positions filled which would otherwise be vacant, recipient countries can have an economic gain of \$20 000 per doctor,⁸ as the financial gain from migration is equal to the cost of building and maintaining sufficient professional schools to produce the number of foreign graduates entering the country.⁹

Lack of development of domestic supply is a potential downside for recipient countries that rely on foreign health professionals. In the US, hospitals hire 5000 foreign medical graduates each year to fill first residency positions. At the same time, US medical schools turn away thousands of US applicants with high grade point averages.¹⁰ Another downside is the costs associated with international recruitment agencies, with excessive fees and recorded cases of exploitation of migrant workers.¹¹

Why brain drain occurs

Different economic explanations have been offered about why brain drain occurs, and each has potentially different implications for policy. The main perspectives are: individual aspects, new economics of migration, dual labour market, world systems theory and push and pull migration theory. Individual theory regards each migrant as a rational human being who looks for a destination that will offer the highest wage rates and best prospects. Neoclassical economic theory supports this perspective in arguing that labour travels from low-wage to high-wage countries.

Conversely, the new economics of migration states that migration does not arise from individual choice, but decisions made by groups such as families or households.¹² Dual labour market suggests that migration is not an intermediate phase but has permanent, structural, and necessary features of modern developed societies. World systems theory builds upon individual decision making and migrant networks by including how goods and capital flow and fit together. In push–pull theory of migration, the movement of population is seen as being pushed and/or pulled by a range of factors in the search of



a more prosperous life, with “stick and stay” factors playing a significant role in the migration process. Stick factors are the reasons why an individual will stay in their home country and must be overcome before the push and pull factors shape a decision to migrate. Stay factors are the reasons why an individual may choose not to go back to their home country.

Box 1 outlines the conceptual framework adopted for this study. Migration is not just an international move, but also involves movement within a country, and within a health system.

Internal migration may involve the movement from rural to urban location, from public to private sector employment, and from primary care settings to tertiary health care. The dotted line (between rural and urban) indicates that a starting point of employment may be rural or urban. However, as the literature suggests, a rural doctor would migrate first to an urban setting before choosing to move abroad.¹¹ The framework also suggests that doctors are pushed away from less developed countries by exogenous and endogenous push and pull factors. Push factors,

2 Doctor: population ratio in southern Africa and Australia (1998–2004)

Doctor:population ratio	Southern African countries
1 per 30 000 or more	Malawi, Mozambique
1 per 20 000	Angola, Lesotho, Zambia
1 per 10 000	Swaziland
1 per 5000	Botswana, Namibia, South Africa, Zimbabwe
249.13 per 10 000	Australia

Source: World Health Organization, 2002¹³; and <www.who.int/globalatlas/dataQuery/reportData.asp>, 01/03/2005. ◆

such as inadequate conditions, force a worker out of their country, whereas pull involves persuading factors to which an individual responds, causing movement towards another country. Exogenous factors are those that arise outside the health system; they are related to a country's social structure. Endogenous factors reside inside a country's health system. This movement abroad is characterised as external migration.

Methodology

To understand brain drain and potential solutions, a focus on a region was adopted, so that both the larger context of social and economic development and the more specific issues confronting the health sector could be considered. Southern Africa was chosen as the region of interest for this study, as the countries in this area are a source of overseas doctors for Australia. Given common language and membership in the Commonwealth, southern Africa is a ready source for health workforce migration. Box 2 shows the doctor to population ratio in southern Africa and Australia. The contrast in the level of doctor supply points to the potential consequences of brain drain for the source countries. During 1996–2001 Australia experienced considerable growth of 11.6% in total persons employed in health occupation groups (eg, medical, dental, nursing, allied health and complementary therapy workers). The medical workforce experienced a growth of 12.8%.¹⁴

To understand factors influencing decision-making at the individual level, a convenience

sample of 10 doctors in Victoria was selected through snowballing and opportunistic sampling, and these informants were interviewed to test, verify and revise the theoretical models offered in the literature. This study recruited southern African-trained doctors practising in Australia, rather than those who moved here to receive their initial training, and only participants who migrated in the last 10 years were included, to concentrate on contemporary migration.

Ten interviews of between 60 and 90 minutes were conducted with the doctors at a location of their choice. Semi-structured interviews elicited data on: background and history (family and personal), educational history, employment in southern Africa (primary, tertiary, urban, rural, private, and public), average length of term in employment setting, average length of stay in country, migration to Australia, consequences to those left behind (family and social networks), and underlying factors for migration (push and pull).

Interviews were taped and analysed thematically. Themes that emerged from the doctors' stories were then pieced together to form a comprehensive picture of their collective experience in migrating from southern Africa. These patterns and the related literature helped to construct a final story about the process, knowledge and motivations of these doctors. This interpretative approach distinguishes this study from other studies on brain drain.

Qualitative analysis was chosen to capture the reasons for migration in depth. There is limited quantitative data, with no formal information

available on the country of origin from the medical practitioner's board. The estimation of global flows and determination of the major factors that lie behind brain drain of doctors is made more difficult when registration data within one country are incomplete or are incompatible with other countries.

Reasons behind brain drain

All interview participants were male with an average age of 42 years. Participants were both white and black individuals from southern African countries; five participants from the Republic of South Africa, four participants from Zimbabwe and one participant from Botswana. All participants experienced work in rural and urban settings, tertiary and primary health provision, and public and private sectors. Four participants migrated to gain further education, as the area of study they chose was not available in southern Africa, and they worked part-time in the Victorian public hospital system. Six participants had migrated due to family decisions, rather than through their personal motivations.

Endogenous factors

All participants interviewed believed push factors played a much greater role than the pull factors in Australia. The factors of migration did fit within the conceptual framework. The endogenous factors causing migration of doctors out of southern Africa included:

- poor remuneration and wages;
- lack of job satisfaction;
- lack of further education and career development;
- poor working conditions; and
- HIV/AIDS.

Poor wages and remuneration were seen to be a major push factor, particularly for Zimbabwean doctors. Although the literature indicates that remuneration is a major factor, the participants in this study indicated that Australia is not a choice destination for pure economic gain. They felt that most southern Africans who migrate solely for economic gain tend to move to the Middle East or

Europe because of the higher wages, greater purchasing power and the protection against taxation.

The interviewees indicated that job satisfaction played a part in doctors migrating. Low job satisfaction was often represented by poor information sharing and poor management between senior management and workers.

Management is very weak; inappropriate work procedures and standards, little orientation to new employees. Also a lack of performance appraisal is evident. *Participant 1, Zimbabwe*

Large daily lists of patients also contributed to low job satisfaction in public hospitals. In rural regions, working conditions and resource availability influenced job satisfaction. Further education and career development was also a push factor in the southern African region, as it was believed that specialised opportunities were not available in southern Africa.

Few workplaces have support for our health care industry such as education or counseling. *Participant 2, South Africa*

HIV/AIDS was noted by all participants, as it held a certain element of fear related to the possibly of contracting it. Doctors were concerned because of the large number of individuals who required diagnosis and treatment daily.

The HIV/AIDS situation is so frightening today; any one of us working in health care could quite easily contract this disease. It's terrible the amount of cases that we have had to deal with each day. It's as if it's never ending this AIDS epidemic and possibly never will end. *Participant 4, South Africa*

Exogenous factors

The exogenous factors causing the migration of doctors out of southern Africa included:

- lack of quality of life;
- high levels of crime;
- civil conflict and political instability; and
- social pressure.

The general story of doctors from the Republic of South Africa suggested the importance of the political context in relation to both apartheid and the new regime. Interviewees commented that the living situation during apartheid consisted of two countries living in one. Movement of skilled professionals during this time may have been attributed to government policy. However, since apartheid was abolished, the outflow of professional workers has not stopped. The hoped-for improvement in the situation for black people has not occurred.

Crime was identified as a major reason for migration from the Republic of South Africa. Although numerous individual doctors accepted the potential personal risk of crime, protecting their family was often a reason for migration. In these instances, migration was typically a household decision (as per new economics of migration theory). Most participants had first hand experience with crime-related activity against them, and these generally included car jacking and theft.

It's quite possible for you to know of someone or experience it for yourself, the notion of having a crime committed against you. I have had both experience of theft at home and car jacking, it sure is a scary situation.

Participant 5, South Africa

The stay factors that generally prompted the doctors to remain in Australia were:

- children had settled comfortably in schools;
- further education had allowed them to pursue their specialised careers in the health care system, and new career paths had become established; and
- the development of friendship and social groups.

These stay factors played an important role in the migration process. Although participants stated that they did not have expectations about Australia other than what they had heard, they reported a great sense of satisfaction about the decision they made.

It was beyond our expectations of what the life we as a family can live here in Australia [would be like]. *Participant 1, South Africa*

The picture portrayed by Zimbabwean doctors is somewhat different than other southern African doctors. These doctors felt that the government had largely caused the exodus of health care professionals. The government decision to intervene in conflict, as Zaire became invaded by Rwanda and Uganda, meant that 14 000 Zimbabwean troops were sent at the cost of US\$3 million per day. This contributed to the large national debt, which was seen to affect salaries and quality of services (health and others) within Zimbabwe. Further problems occurred during the period when soldiers became disarmed fighting colonialists and were given pensions as former guerillas. The government failed to integrate them into the army and gave them the option of joining the army or taking a lump sum payment. The majority of the group decided upon the latter, which in 1997 led them to confront the government with their complaints of living destitute lives. Without budgeting appropriately an additional \$50 000 was given to each of 60 000 individuals, leading to further economic drain on government resources.

There was a common perception among Zimbabwean doctors that it was close to impossible for new graduates to buy homes and open private practices because of the combination of high inflation and low wages. The authoritarian government regime worked against the best interests of health professionals, making it difficult for these individuals to satisfy their needs and wants. Domestic doctors protested the government's decision to import Cuban-trained doctors and nurses to meet labour shortages without investment in developing the domestic workforce. Interviewees believed that the Cuban government received up to US\$1500 for each individual doctor supplied to Zimbabwe; Zimbabwe would import up to 300 doctors per annum to meet the demand. These individuals had a 3-year contract and a local allowance and it was possible for a Cuban doctor to be able to purchase a house and possibly a car. The Zimbabwean doctors believed the Zimbabwean economy would suffer as a result of transfer of domestic currency into US currency to pay Cuban doctors. The major

endogenous push factor was remuneration in Zimbabwe — as the government paid medical graduates the equivalent of AU\$300 a month compared with up to US\$4000 a month for Cubans.

Although Cuban doctors were well-qualified, Zimbabwean doctors believed that they were not ready to work without supervision in rural regions where there is greater need for more than one medical opinion.

Doctors [in rural regions] must have greater skill and diversity to combat anything from an HIV/AIDS case to broken legs to eye surgery to caesarean section. *Participant 2, Zimbabwe*

The rural regions required voluntary work by domestic doctors but paid competitive wages for Cuban or overseas doctors.

Social pressures placed by family and friends on the Zimbabwean doctors were also identified as a major push factor. One example given was when a doctor visited a holiday resort and disclosed his profession.

I remember one holiday at a resort when I took my whole family with me this really meant that I was pressured into a better room and other more expensive options but I did not have that much money as perceived by the workers at the resort and other non-doctors. *Participant 4, Zimbabwe*

There is social pressure from the expectations of other family members, such as payment of school fees. These social pressures are difficult to measure, however, sole provision for the needs of the wider family was a substantial reported push factor.

Possible policy responses

The literature suggests that policy responses to combat the brain drain problem include retention, recruitment and selection, and capacity building.¹⁵ Retention is most commonly suggested in the literature, with most research looking to improve wage rates as a means of retention.

Salary is a factor in retention, however it has not had the desired effect. Botswana is given as an example, where when salaries were increased there was no reduction in the number of workers leaving the country.¹⁶

Appropriate involvement in decision-making, training and development have been seen as important for retention of workers in southern African health care systems. Retention strategies have included orientation and induction programs for new entrants into the health care setting to assist the adjustment process into their new job. Promotion of cultural diversity, open communication and feedback mechanisms have also been seen to be beneficial for retention.

The suggestions from study participants extend beyond conventional solutions. They nominated as appropriate policy responses: the relocation of training facilities towards high need locations; extended retirement age; and incentives and motivational systems. Inter-country recruitment arrangements were raised as another potential policy response. Capacity building and skill substitution, along with return and export management, a brain drain tax and collaboration among expert professionals were further suggestions.

Capacity building is important because employers need proficient employees, requiring resources to enhance employees' knowledge base, skills and service.¹⁵ Investing in the workers, such as offering financial assistance to obtain further educational qualifications, would provide benefits to both the individual and the organisation. The production of large numbers of skilled professionals has often been seen as a great difficulty for tertiary institutions in southern Africa.¹⁷ To address this problem, study participants suggest clinical officer jobs or surgical support positions could be encouraged where non-qualified individuals can provide support to skilled professionals.

Study participants believed health policy makers should attempt to attract workers back to their home country, with the emphasis on targeting those professionals who have migrated on a

temporary basis. Temporary migration can be beneficial if it is promoted as, first, a working holiday where an individual will gain new knowledge and techniques for use in their home country, and, second, as a study tour where individuals will acquire qualifications. Promoting temporary migration will benefit the health care system by offering greater incentives ensuring these individuals return home. Cooperation between the International Organization for Migration (IOM) and respective governments could help track and manage movements of skilled individuals.

In order to recoup the costs associated with brain drain a “brain drain migration tax” has been explored. Taxing citizens abroad may be a strategy. For example, Eritrea’s system requires external citizens to pay 2% income tax to the home government.¹⁶ This would ensure that the recruitment costs would increase and potentially reduce professional migration. The money received should then be reinvested into the economy — specifically for health training and the development of facilities and public hospitals.

All of the strategies explored would require a substantial amount of policy work through international bodies. These organisations can work with governments to trial initiatives and share information. One example may be collaboration of the World Health Organization (WHO) and the African Development Bank (ADB). The WHO, with specialists in human resources for health, could provide guidance on health workforce policies within a southern African country, and assist in exploring policy options for recruiting, managing and retaining the health workforce. The ADB, as the premier financial development institution in this region, could focus its attention on supply-and-demand studies of the health workforce, and consider complementary policies to mobilise resources in the region. Such substantial policy work does not have to be confined to WHO and the ADB. The World Bank, International Labour Organization, International Monetary Fund and the Commonwealth could also provide the support required.

Conclusions

The findings of this research have highlighted that the push factors in southern Africa were perceived as being far greater than the Australian pull factors. However, stick and stay factors within Australia did become important in perpetuating the brain drain. While the research was small in scale and limited to southern African doctors it provided information about brain drain of doctors beyond that captured in an administrative database. While the research pointed to issues specific to southern Africa, it is interesting to reflect on the extent to which the generic issues of working conditions, resource availability, social pressures, and access to specialist skills are relevant to health care workers in underserved areas in any country. While more research is needed in specific locations, the issues and solutions raised by these “brain drain doctors” from southern Africa deserve attention in health workforce recruitment and retention strategy.

In this study, economic theory contributed to the understanding of the social choice by doctors to migrate, suggesting that policy remedies aimed only at wage equalisation would be insufficient. By understanding the push and pull endogenous and exogenous factors that shape migration from less developed countries to the developed world, it is possible to explore the measures that might contribute to better health care.

Competing interests

The authors declare that they have no competing interests.

References

- 1 Buchan J, Parkin T, Sochalski J. International nurse mobility; trends and policy implications. Geneva, World Health Organization, 2003.
- 2 Puris S, Rizema T. Migrant worker remittances, micro-finance and the informal economy: prospects and issues. Working paper 21. Geneva: International Labour Organization, 1999.
- 3 Lowell LB. Some developmental effects of the international migration of highly skilled persons. International Migration Papers No. 46. Geneva: International Migration Branch, International Labour Office, 2001.

- 4 Hollingsworth B, Shah C, Long M, Richardson J. Trade in health services and GATS handbook. In: Blouin C, Drager N, Matoo B, Smith R, editors. Modelling the impact of GATS on health: an example for mode 4. Geneva: World Health Organization, 2004.
- 5 Forcier MB, Giuffrida A, Simoens S. Impact, regulation and health policy implications of doctor migration in OECD countries. Human resources for health 2: 12 BioMed Central 2004. Available at: <<http://www.human-resources-health.com/content/2/1/12>> (accessed Dec 2005).
- 6 Martineau T, Bundred P, Decker K. Briefing note on international migration of health professionals: levelling the playing field for developing health systems. Liverpool, UK: Health Sector Reform Research Work Programme, Liverpool School of Tropical Medicine, 2002.
- 7 Organization for Economic Co-operation and Development. International mobility of the highly skilled. Paris: OECD, 2002.
- 8 Padarath A, Chamberlain C, Loewenson R, et al. Health personnel in Southern Africa: confronting maldistribution and brain drain. EQUINET Discussion Paper number 3. Regional Network for Equity in Health in Southern Africa (EQUINET), Health Systems Trust (South Africa) and MEDACT (UK), 2003. Available at: <<http://www.equinetafrica.org/bibl/docs/DIS3hres.pdf>> (accessed Dec 2005).
- 9 Mejia A. International migration of professional health manpower. In: Hall TA, Mejia A, editors. Health manpower planning: principles, methods, issues. Geneva: World Health Organization, 1978.
- 10 Mullan F. The case for more US medical students. *N Engl J Med* 2000; 343: 213-17.
- 11 Bach S. International migration of health workers: labour and social issues. Geneva: International Labour Office, 2003.
- 12 Stalker P. The no-nonsense guide to international migration. Toronto, Canada: New Internationalist Publications, 2001.
- 13 World Health Organization. Estimates of health personnel: doctors, nurses, midwives, dentists and pharmacists (around 1998). Geneva: WHO, 2002.
- 14 Australian Institute of Health and Welfare. Australia's health 2004: the ninth biennial health report of the Australian Institute of Health and Welfare. Canberra, 2004. (AIHW Cat.No.Aus 44).
- 15 Briggs J. Migration of health professionals: recruitment and retention strategy. Liverpool, UK: Health Division, School of Tropical Medicine, 2001.
- 16 Dovlo D. The brain drain and retention of health professionals in Africa. Regional Training Conference on Improving Tertiary Education in Sub-Saharan Africa: Things That Work. 2003 September 23-25, Accra, Ghana. Available at: <http://www.medact.org/content/health/documents/brain_drain/Dovlo%20-%20brain%20drain%20and%20retention.pdf> (accessed Dec 05).
- 17 Bhorat H, Meyer J-B, Mlatsheni C. Skilled labour migration from developing countries: study on South and Southern Africa. International Migration Paper no. 52. Geneva: International Migration Programme, International Labour Office, 2002.

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