The globalization of the labour market for health-care professionals

Paul F. CLARK,* James B. STEWART**
and Darlene A. CLARK***

Health-care professionals have long emigrated from developing to developed countries in search of better professional and personal opportunities. However, in recent years this phenomenon has accelerated significantly. Global shortages of nurses, physicians, pharmacists, and other health-care practitioners have spurred migration not just from less affluent to more affluent countries, but also between poor countries and between wealthy ones. The result is a growing global labour market for professionals in health care.

The globalization of the health-care labour market has had a profound effect on the ability of many national health-care systems to deliver vital services to their citizens. The most dramatic impact is being felt in the least developed nations, where there has been a tremendous increase in emigration. Because the health-care systems in these countries are largely underfunded and dysfunctional, they cannot compete effectively in the global labour market. The consequent "brain drain" from these developing countries exacerbates the already desperate state of their health-care systems, making it even harder to retain health-care professionals.

This article will examine the globalization of the labour market for health-care professionals. Evidence documenting the worldwide shortage of health-care workers is presented, with a particular focus on registered nurses (RNs) and physicians (MDs). Several theoretical frameworks, including various migration theories, are used to examine how this

global shortage (along with other factors), encourages the migration of these workers around the world. Human capital theories and elements of theories pertaining to colonialism and globalization provide insight into the micro- and macro-level dynamics of the global market for health-care professionals, and the costs and the benefits to both developed and developing countries. Particular attention is paid to the negative impact of the migration of these workers on the quality of health care in less affluent countries. The article concludes with a discussion of the strategies for addressing the consequences of an unregulated global market for health-care professionals.

Worldwide shortage of health-care professionals

Health-care systems around the world are in crisis. In developed and developing countries alike, these systems are struggling to meet the needs of the people dependent upon them. One of the most critical challenges these systems face is a shortage of health-care professionals.

In developed countries, national health-care systems periodically experience shortages of nurses or physicians. Usually these shortages are simply a function of demand growing faster than supply. This is most often corrected by introducing greater incentives into the labour market. By contrast, developing countries have long experienced chronic shortages of health-care professionals. These shortages are usually rooted in a lack of resources that prevents the training or retraining of sufficient numbers of nurses, physicians, or other health-care professionals.

However, in recent years, a number of demographic and societal changes have combined to create significant and long-term shortages in both developed and developing countries, in the opinion of numerous observers. Most problematic is an almost universal shortage of RNs, caused by increased demand in the face of a declining supply. Many countries also face significant shortages of MDs.

Registered nurses usually constitute the largest occupational group in any health-care system. Approximately two million RNs are employed in the United States (figure 1). Unfortunately, the demand for nurses exceeds the supply. This shortage was projected to grow to almost 150,000 by 2005, then to more than 275,000 by 2010, and to over 800,000 by 2020 (US Department of Health and Human Services, 2002).

A number of factors are responsible for this shortage. Demand for nurses in the United States has been growing steadily in recent years and is expected to continue to grow in the years ahead. A primary cause of this increase is the ageing population in the United States. Between 2010 and 2030, the proportion of the population aged 65+ will grow from roughly 13 per cent to 20 per cent. Since this demographic group uses a disproportionate amount of available health-care services, more nurses will be required to care for this cohort.

Figure 1. USA: Supply and projections for FTE registred nurses, 2000 to 2020
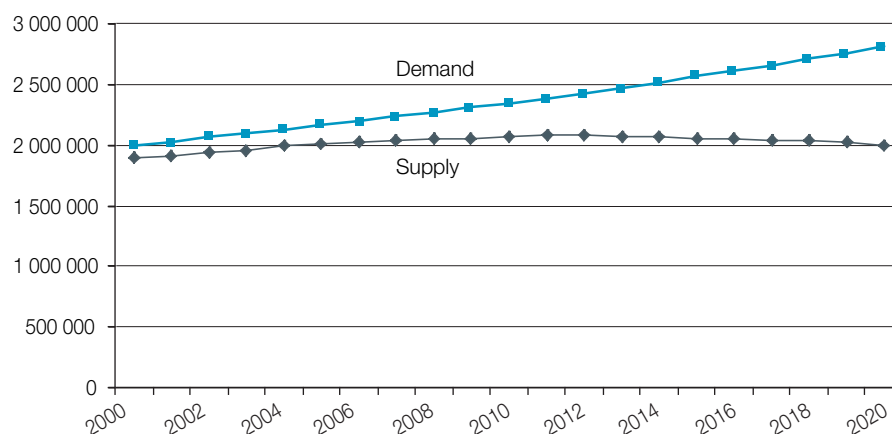
Note: FTE = Full-time equivalent.
Source: US Dept. of Health and Human Services, 2002, Chart 1.

For the past several years, the supply of nurses in the United States has fallen, in both real and relative terms. There are a number of reasons for this. First, women, who make up 94 per cent of the nurse workforce, have more career options now than in the past and consequently are not as readily pursuing careers in nursing (Cherry and Jacobs, 2004). Second, with fewer nurses entering the profession, the average age of nurses is climbing. In 1980, 25.1 per cent of the nurse workforce was aged under 30 years; in 2000, only 9.1 per cent were in this age bracket. Impending retirements will exacerbate the shortage. Third, RNs are increasingly dissatisfied with their jobs; burnout and stress are causing more and more nurses to leave the profession (Aiken et al., 2001).

Other developed countries are experiencing similar nurse shortages. In Europe, reports indicate that nearly every country is experiencing a shortage of nurses (Gathercole, 2003). The United Kingdom currently has 57,000 fewer nurses than are needed to staff the National Health Service (*The Times*, 2001). The Canadian Nurses' Association has estimated that by 2011 Canada could have a shortfall of 78,000 nurses. By 2016, this shortfall is expected to grow to 113,000 nurses (RNABC, 2004). Data suggest that Australia will be able to fill only 60 per cent of the nurses' positions it expects to have in 2006 (Dunn, 2003). Of the 100,000 nurse positions in Saudi Arabia, only 54,000 are filled (1,000 by Saudi nurses and 53,000 by nurses recruited from abroad) (Pakkiasamy, 2004).

In the developing countries of Asia, Africa, Latin America, and the Caribbean, the situation is even more critical. Virtually all developing countries suffer from a chronic shortage of nurses. In these countries, the shortage is neither cyclical nor new.

In 2003, the Pan-American Health Organization reported that 35 per cent of nursing jobs across the Caribbean were vacant. In Trinidad and Tobago, almost half of the positions were unfilled (Clark and Clark, 2004a). The Philippines had 30,000 vacancies for nurses in 2004 (McKenna, 2004). In 2003, Malawi reported that only 28 per cent of nursing positions were filled. South Africa had a shortage of over 32,000 RNs in 2003 (PHR, 2004). The best estimates indicate that collectively sub-Saharan African countries have a shortfall of over 600,000 nurses (ICN, 2004).

The reasons for shortages in less affluent countries are somewhat different from those in more affluent nations. Developing countries generally lack the resources to train an adequate number of nurses. They have fewer nurse training programmes and fewer qualified nurse educators. Moreover, very low pay and extremely unsatisfactory working conditions make it difficult to attract and retain nurses. Insanitary conditions, a lack of medicine, supplies and equipment, huge nurse-to-patient ratios, a shortage of physicians, and epidemics of HIV/AIDs and other serious illnesses, all contribute to making the practice of nursing tremendously stressful in many developing countries (Padarath et al., 2003).

It can also be a very dangerous occupation. A survey of nurses' unions in 91 countries by Clark and Clark (2003) found that workplace violence or "bullying" is a much higher concern in developing, than in developed, countries. In addition to violence, exposure to highly contagious and deadly diseases reduces the supply of nurses in these nations as a result of death, illness, or voluntary withdrawal from the profession. Zambia alone lost 185 nurses to HIV/AIDS in 1999 (the equivalent of 38 per cent of new nurses trained there that year) (Hongoro and McPake, 2004). These factors also provide significant incentives to nurses to migrate to countries that provide better working conditions, as well as greatly improved pay and benefits.

Many developed and developing countries also suffer from a shortage of physicians. The United States has long had an inadequate number of physicians in such specialities as cardiology, dermatology, and neurology, and more recently, family practice. Overall, projections suggest that by 2020 the United States could face a shortage of 200,000 doctors. As with nurses, the supply of MDs there has been falling despite increased demand (Cooper, 2004).

Falling medical school enrolments are a major factor contributing to the shortage of physicians in the United States. Between 1996 and

2002, the number of medical school graduates declined each year. A second contributing factor is soaring malpractice insurance rates that have driven doctors from the profession, particularly in obstetrics and emergency medicine. In addition, there is evidence that MDs have increasingly been taking time off from their practices, further reducing the supply of physicians available to treat patients at any one time. A number of other developed countries, such as Canada and Australia, also suffer from a shortage of physicians. With the exception of the United Kingdom, this does not appear to be a significant problem among European countries (Greene, 2001).

As with RNs, developing countries have long had insufficient numbers of physicians to meet the needs of their populations. One projection estimates that shortfall at 720,000 MDs for Africa alone. The World Health Organization (WHO) has determined that nations need a minimum of twenty doctors for every 100,000 people to be able to provide even basic care. In 2003, WHO reported that 31 countries in Africa did not meet this minimal level of staffing (Padarath et al., 2003). In fact, some of the poorest nations in Africa have ratios well below WHO's recommended level (e.g. Liberia has 2.3 physicians per 100,000, Eritrea 3 per 100,000, Chad 3.3 per 100,000) (Overpopulation.com, 2006).

The causes of this shortfall are similar to those underlying the nurse shortage. The main factor is countries' lack of resources to train or retain sufficient physicians to meet their health-care needs. This problem is compounded by the emigration of physicians to more affluent countries where pay is significantly higher and working conditions are substantially better.

There are also shortages of other health-care personnel in both developed and developing countries. In recent years, shortfalls of pharmacists, respiratory therapists, radiology technicians, and other health-care occupations have been reported in Australia, Canada, United Kingdom, and United States (*The New York Times*, 2001; AFT, 2003; Stanton, Willis and Young,, 2005; Home Office, 2006). Virtually all developing countries have insufficient numbers of these workers.

Migration of health-care professionals

The recruitment of health-care workers from less developed countries has emerged as one of the main responses of developed countries to the shortage of health-care professionals. The latter are increasingly being recruited for temporary or permanent positions abroad. Though some of this movement occurs between developed countries, most is from developing to developed countries.

Push-pull theories of migration

Worker migration is a result of the interplay of economic, social, cultural, political and legal forces. Factors encouraging cross-border migration are often considered under two categories – supply-push factors and demand-pull factors (Mejía, Pizurki and Royston, 1979; Kline, 2003). Over time, migration patterns are sustained through networks that provide prospective migrants with information about job opportunities in destination countries as well as various forms of support to help adjustment after migration (Martin, 2003a, 2003b).

Supply-push factors are those issues and conditions that cause health-care workers to be dissatisfied with their work and careers in their home country (see table 1). These push factors may be present in some developed countries as well as in the developing countries, causing health-care personnel to migrate from one developed country to another which they perceive as being "better" in some way. However, these factors are present in a much more dramatic way in developing countries, and they contribute significantly to the decision to emigrate by doctors and nurses in these countries. Workers who are satisfied with their current employment situation, and thus are not moved by push factors, are unlikely to leave their home countries.

Demand-pull factors are the conditions in destination countries that motivate workers to migrate. Like push factors, pull factors can cause workers in one developed country to move to another developed country. However, the pull factors present in developed countries are a more powerful influence on individuals in developing countries. For example, after adjustment for the cost of living, nurses' salaries in Australia and Canada are double those of nurses in South Africa, 14 times those in Ghana, and 25 times those in Zambia (Brown, 2003). As with

Table 1.   Push and pull factors in health-care migration

Push factors

1. Inadequate compensation
2. Poor working conditions/job dissatisfaction
3. Work-related hazards (HIV/AIDs, tuberculosis, etc.)
4. Lack of career opportunities
5. Poor quality of life
6. Political instability/war/ethnic strife/etc.
7. Lack of opportunities (educational, etc.) for children

Pull factors

1. Better compensation
2. Better working conditions/greater job satisfaction
3. Safer work environment
4. Greater career opportunities
5. Better quality of life
6. Political stability
7. Greater opportunities for children

Source: Kline, 2003.

push factors, health-care professionals are unlikely to migrate to a destination country unless they perceive conditions there (the pull factors) as superior to those at home.

Destination countries

English-speaking countries appear to be the most popular destination in the global labour market for nurses. In 2001, nurses from 95 countries were registered to work in the United Kingdom (Buchan and Sochalski, 2004). Approximately 43 per cent of RNs registering there for the first time in 2002-2003 were from overseas. In 2003 alone, over 27,000 work permits were issued to nurses, a 93 per cent increase from 2000. As table 2 suggests, the Philippines supplies the largest number of nurses to the United Kingdom. The sub-Saharan African countries of South Africa, Nigeria and Zimbabwe, as well as Australia, India, and a number of Caribbean countries, also provide significant numbers of RNs to the United Kingdom's health system (Buchan, Jobanputra and Gough, 2004).

Health-care employers in the United States have also begun to recruit foreign nurses to meet the shortage they face. Foreign nurses have long been part of the American health-care workforce, but their numbers have increased rapidly in recent years. In 1997, foreign-educated nurses represented about 5 per cent of new RNs in the United States. By 2003, this proportion had grown to 14 per cent. The most recent data suggest that there are well over 100,000 foreign nurses registered in that country. The Philippines represents the greatest source of foreign nurses in the United States, followed by Canada, the Republic of Korea, India, and the United Kingdom (Buchan and Sochalski, 2004).

Ireland is another country actively recruiting RNs in the global labour market, which is ironic since for decades it was an exporter of nurses. Recently, demand for nurses in Ireland has outstripped supply and the Irish health system has aggressively recruited RNs from abroad. In 2001, about two-thirds of the new nurses registering in Ireland were from other countries, mainly Australia, India, the Philippines, South Africa, and the United Kingdom (Buchan and Sochalski, 2004).

Other countries that have recently recruited significant numbers of foreign nurses include Australia, New Zealand, Norway, Saudi Arabia, and Singapore.

There is also some migration of nurses between developed countries (e.g. from Canada and the United Kingdom to the United States, from Australia to Ireland and the United Kingdom, and from New Zealand to Australia), however, most migration occurs from developing to developed countries (see table 2).

Table 2.   Nurse migration: Source and destination countries

Country	Immigration from:	Emigration to:
United Kingdom	Philippines (7,235, 2001-02)	United States
	South Africa (2,114, 2001-02)	Ireland
	Australia (1,342, 2001-02)	
	India (994, 2001-02)	
	Zimbabwe (473, 2001-02)	
	Nigeria (432, 2001-02)	
	Caribbean countries (248, 2001-02)	
United States	Philippines	
	Canada	
	India	
	Republic of Korea	
	Nigeria	
	Caribbean Countries	
	United Kingdom	
	Ireland	
	Mexico	
	South Africa	
Ireland	Australia	
	India	
	Philippines (1,529)	
	South Africa	
	United Kingdom	
Australia	South Africa	United Kingdom (224, 1998-99)
	United Kingdom (439, 1998-99)	United States/Canada (129, 1998-99)
	New Zealand (253, 1998-99)	
	Norway	
Canada	Philippines (4,295, 2000-02)	United States
	United Kingdom (3,883, 2000-02)	
	Australia	
	Hong Kong (951, 2000-02)	
	India (713, 2000-02)	
	South Africa	
South Africa	Tanzania	United Kingdom
	Botswana	Australia
	Namibia	Canada
	Zimbabwe	Saudi Arabia
	Malawi	
Saudi Arabia	Philippines (5,045, 2001)	
	India	

Note: Statistics in parentheses are number of immigrants from source country for period indicated.
Sources: Buchan and Sochalski, 2004; Kline, 2003; Carvel, 2004.

Although the global labour market for physicians is not as active as it is for nurses, the shortage of MDs in developed countries has led to an increase in physician migration in recent years. Again, English-speaking countries appear to be the most common target destinations;

however, the number of foreign physicians is increasing in many countries where languages other than English are spoken, as well. Almost half of the 10,000 new physicians registered to practise in the United Kingdom in 2002 were from overseas. In 2003, more than two-thirds of the 15,000 new physicians in that country were from abroad (Buchan, Jobanputra and Gough, 2004).

Foreign MDs make up a substantial proportion of the physician workforce in some of the most affluent countries in the world. As figure 2 indicates, more than 34 per cent of physicians practising in New Zealand are from overseas. In the United Kingdom, foreign physicians represent 30.4 per cent of that occupation. Other developed countries have similar proportions of foreign physicians, including the United States with 26.4 per cent (Forcier, Simoens and Giuffrida, 2004); and Norway with just over 16 per cent, according to a more recent source (Taraldset, 2006).

Physicians appear to migrate more between developed countries than do nurses. For example, physicians from the United Kingdom make up 32 per cent of foreign-trained physicians practising in Canada. In Australia, 39 per cent of foreign-trained physicians are from the United Kingdom and in Ireland that figure is 29 per cent. However, significant numbers of MDs also migrate from developing to developed countries. India, South Africa, and Pakistan are some of the leading suppliers of physicians to affluent countries. Physicians also migrate from smaller, less

Figure 2. Percentage of practising physicians who are foreign-born, in selected countries
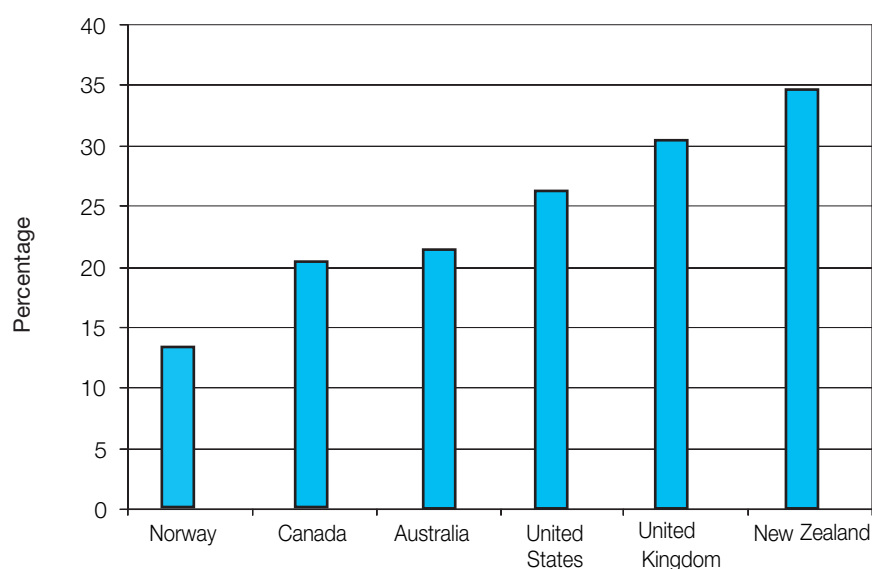
Source: Forcier, Simoens and Giuffrida, 2004.

developed countries in Africa and Asia, but they constitute a smaller portion of the physician workforce in developed countries (Forcier, Simoens and Giuffrida, 2004).

Source countries

With over 150,000 nurses working overseas, the Philippines is the country from which the largest number of RNs migrate (Lorenzo, 2002). However, in contrast to the situation in other developing countries, the emigration of nurses is part of a deliberate policy sanctioned by the Filipino Government. In support of this policy, nursing schools train many more nurses than their country needs, and those who emigrate become part of a "labour outsourcing industry" driving the Filipino economy. In 2001, contract workers such as nurses sent home US$6.2 billion in remittances to the Philippines. The countries employing the greatest number of Filipino nurses are Ireland, Saudi Arabia, and the United Kingdom (Diamond, 2002).

A handful of other countries aspire to play a similar role in the global labour market but have not yet established themselves in this respect. These countries include China, Cuba, India and some of the states formerly constituting the USSR.

Sub-Saharan Africa is another area from which nurses migrate to work in developed countries. Between 1993 and 2003, 6,028 South African nurses registered to work in the United Kingdom; Zimbabwe contributed 1,561 nurses, Nigeria 1,496, Ghana 660, Zambia 444, and Kenya, 386 (Carvel, 2004).

As stated above, the labour market for physicians differs from that for nurses. There is more migration of physicians between developed countries than there is of nurses. More physicians appear to migrate from the United Kingdom than from any other developed country and virtually all of them go to other developed countries, notably Australia, Canada, and the United States.

South African physicians are also very present in the global health-care labour market. Data from 1998 suggest that one-third to one-half of physicians graduating from South African medical schools eventually emigrate to developed countries, with Australia, Canada, and the United Kingdom the most popular destinations (Weiner, Mitchell and Price, 1998). Other countries in sub-Saharan and North Africa are the countries of origin of physicians working abroad.

Recruitment

For a truly global labour market for health-care professionals to exist, a number of conditions have to be present, including significant access to information and freedom of movement for those migrating.

The evidence suggests that these conditions are increasingly in place around the world. In recent years, recruitment of RNs and MDs has become more aggressive and systematic. As a result, health-care professionals have access to much more information about job opportunities than at any time in the past. Trade and immigration policies have opened doors for such professionals to move freely between countries (Schmid, 2004).

Migration of nurses and physicians occurs in basically two ways. The first is through active recruitment by employers or agencies. Developed countries are increasingly using this approach to bring personnel into their health-care systems. The United Kingdom has probably the most systematic and coordinated recruitment programme of any country in the world. The British National Health Service (NHS) has its own recruitment programme to identify health-care professionals interested in emigrating. It operates different recruitment strategies for the various professions. It usually recruits physicians on an individual basis, but tends to recruit nurses in groups of ten, twenty, or more from a specific country. As part of its recruitment process, the NHS provides information on job locations, living arrangements, and immigration procedures (Buchan and Dovlo, 2004; Buchan, Jobanputra and Gough, 2004).

The NHS also employs professional consultants to recruit foreign nurses. Recently, there has been a significant increase in the number of health-care recruiters based in the United Kingdom and other developed countries, as well as in source countries such as South Africa. These labour market intermediaries play an important role in disseminating information about the opportunities available to overseas nurses (Buchan and Dovlo, 2004).

The second method involves a more passive approach. One example is the NHS's use of relatively new communication technologies to provide potential migrants with the information they need to begin the immigration process. These technologies include websites and email and have served to make foreign nurses much more aware of the opportunities available to them in developed countries. These strategies are considered passive because they bring nurses to the NHS without direct personal contact.

The strategies employed by the NHS have been adopted by other countries with national health services, such as Australia and Ireland. In a country without a centralized national health programme, such as the United States, individual employers (large hospitals and health systems) and independent recruiting firms do most of the recruiting, using both active and passive strategies.

Clearly, therefore, there is sufficient information, the factor so crucial for a global labour market for health-care professionals to function successfully. A second necessary condition for such a market is mobility. A few restrictions on nurses' mobility between countries do

exist. In the United States, for example, nurses must pass a rigorous examination before they can practise, but elsewhere nurses are not required to take such examinations. What is more, most countries have trade policies that facilitate the migration of RNs and MDs. In the United States, legislation such as the Free Trade Area of the Americas (FTAA) and the General Agreement on Trade in Services (GATS) encourage the free movement of such workers (Schmid, 2004).

Costs and benefits of migration

Costs

The major costs of the migration of health-care professionals are borne by the developing countries that lose significant numbers of nurses, physicians, and other health-care professionals. Health-care systems in these countries range from barely adequate to completely dysfunctional. They suffer from a host of problems – inadequate funding, inferior technology, epidemics, war and political instability, a lack of infrastructure, insufficient training capacity, and a long-standing shortage of health-care professionals. The further loss of nurses and physicians to developed countries renders poor health-care systems even less capable of providing care for their patients.

As stated earlier, one projection estimates that Africa currently has a shortfall of 600,000 RNs and 720,000 MDs. The medical brain drain that African nations are currently experiencing threatens to make that shortage even more severe. Developing countries in other regions face similar shortages.

The case of Ghana illustrates the challenges the health-care systems of developing nations face. A 2004 study of the Ghanaian health-care labour market found that it suffered from severe shortages of all health professionals in almost all regions of the country. The study estimated that in 2002, Ghana only had 4,319 of the 13,340 RNs needed to run its health-care system at an optimal level. It also estimated that only 633 of the 1,804 MD positions required were filled at that time. And of the 371 pharmacists needed, fewer than half that number (161) of positions were filled. A comparison with similar data from four years earlier indicated that the shortage had worsened between 1998 and 2002 (Buchan and Dovlo, 2004).

Many other developing countries face similar challenges. For example, 70 per cent of physicians trained in Zimbabwe in the 1990s have left the country to practise elsewhere (Saravia and Miranda, 2004), and 18,000 Zimbabwean nurses were working abroad as of 2002 (Pang, Lansang and Haines, 2002). The public health system of Zambia has retained only 50 of over 600 physicians who trained in that country since 1994 (Couper and Worley, 2002).

In 2004, Malawi, one of the poorest nations in Africa, was able to fill only 40 per cent of its nursing positions. The BBC reported that year that the number of nurses in one hospital in Lilongwe, the capital, had fallen from 500 to two. As a result, women had to give birth without assistance, and patients often died from diseases that could easily have been treated with proper medical attention. One of the two remaining nurses at this hospital was planning to migrate to the United Kingdom, where in one morning she could earn what she earned in a month in Malawi (Andersson, 2004).

This problem extends beyond Africa. Each year, Jamaica's chronically understaffed health-care system loses roughly 8 per cent of its RNs and 20 per cent of its nursing specialists to migration. In 2001, Jamaica was able to fill only 64 per cent of its nurses' positions. Barbados lost 10 per cent of its nurses between 2000 and 2001. Most of these losses were due to migration (Buchan and Dovlo, 2004).

Migration often represents a transfer of resources from the rudimentary and inadequate health-care systems of poor nations to the modern health-care systems of affluent countries. Table 3 provides comparative data on the health-care personnel in selected developing and developed nations. Clearly, the developing countries of Africa, Asia, and the Caribbean (first 11 listed) are greatly disadvantaged in this area compared with the developed countries (last four listed).

Table 3. World Health Organization: Estimates of nurses and physicians per 100,000 in population, selected developing and developed countries

Country	Nurses per 100,000 population (year)	Physicians per 100,000 population (year)
Developing countries		
1. Liberia	5.9 (1997)	2.3 (1997)
2. Ghana	6.2 (1996)	7.0 (1996)
3. Central African Republic	8.8 (1995)	3.5 (1995)
4. Pakistan	34.0 (1996)	57.0 (1997)
5. India	45.0 (1992)	48.0 (1992)
6. Nigeria	66.1 (1995)	18.5 (1995)
7. Kenya	90.1 (1995)	13.2 (1995)
8. Botswana	219.1 (1994)	23.8 (1994)
9. Bahamas	229.7 (1996)	151.8 (1996)
10. Trinidad and Tobago	286.8 (1994)	78.8 (1994)
11. South Africa	471.8 (1996)	56.3 (1996)
Developed countries		
12. United Kingdom	497.0 (1989)	164.0 (1993)
13. Australia	830.0 (1998)	240.0 (1998)
14. Canada	897.1 (1996)	229.1 (1995)
15. United States	972.0 (1996)	279.0 (1995)

Source: WHO, 2004.

The emigration of health-care personnel inflicts a number of costs on source countries. One of the most significant is the source country's diminished ability to provide care for its citizens. The impact is particularly significant when such personnel cannot be replaced because of a shortage. Not only does the health-care system lose the services of health-care professionals, but the inability to replace them puts added pressure on the remaining employees. Such pressure further strains the system, creating additional push factors that then contribute to the loss of more health-care professionals.

Source countries also incur another significant cost when RNs and MDs migrate. The training of health-care professionals in most developing countries is either entirely sponsored, or heavily subsidized, by the government. This substantial investment in human capital is lost when a nurse or a physician permanently emigrates to a developed country. The United Nations estimates that each migrating African health-care professional represents a loss to the source country of US$184,000 (Oyowe, 1996). Another analysis determined that the 600 physicians trained in South Africa who currently work in New Zealand cost the source country $37 million (Pang, Lansang and Haines, 2002).

Benefits

The two parties benefiting most from migration are the health-care professionals who secure employment in a more prosperous place, and the destination countries that hire them. Source countries can also benefit in two ways: from remittances sent home to families and from migrants who return with enhanced skills and experience.

Health-care personnel who migrate to developed countries often do find improvements in compensation, working conditions and lifestyle, as well as opportunities for personal and career development that would not be available in their home countries (Buchan and Dovlo, 2004).

The evidence suggests that, at least in the short run, destination countries also benefit from migration, although there is an ongoing debate as to whether the recruitment of health-care professionals from abroad is an ethical and effective means of addressing the personnel shortage. In 2002, 31 per cent of MDs and 13 per cent of RNs in the United Kingdom were from overseas. In London, the figures were 23 per cent and 47 per cent, respectively (Pang, Lansang and Haines, 2002). In 2003, it was estimated that there were 100,000 foreign nurses in the United States (Buchan, Parkin and Sochalski, 2003). Given that the health-care systems in these countries still face a shortage, the situation would clearly be even worse without these foreign workers.

Thus, the migration of health-care professionals to developed countries causes very significant problems for the source countries,

particularly those in the developing world. However, benefits do also accrue to these source countries – one of the most significant being remittances, i.e. that portion of a migrant's earnings sent home to help family members. These funds can have a great influence on the living standards of people in source countries. Collectively, they play a crucial role in the economies of many developing nations since they represent one of the most important sources of foreign revenue (Forcier, Simoens and Giuffrida, 2004). However, there is little evidence that they can compensate for the damage done to health-care systems in those countries, particularly since remittances go to families, not directly to the health-care systems.

The other way in which developing countries potentially benefit from outflow is in the case of temporary migration. When nurses and physicians leave to work in the health-care system of a developed country, they gain experience and training in a more advanced setting. In this scenario, migration can be a positive arrangement for a developing country: the source country temporarily gives up its training investment, as well as the health-care professionals' services, for a period of time; and in exchange, upon the nurses' or doctors' return, it recoups its initial investment, as well as the added human capital gained during the professionals' time away. Unfortunately for developing countries, there is little evidence that more than a small percentage of the emigrants actually return. Even in cases where health-care workers do return, health-care systems in developing countries may not have sufficient absorptive capacity to take advantage of the skills and expertise acquired abroad. As an example, the technologies available to health-care workers in developing countries may be much less sophisticated than those in developed countries, reducing the utility of the human capital obtained overseas.

Structure and functioning of the market for health-care professionals

Migration theories provide a means to describe the general forces associated with the international migration of health-care workers, but other theoretical frameworks are necessary to understand the forces shaping the decisions of individuals to migrate, and the manner in which countries experiencing shortages attempt to attract workers. No single theoretical framework is adequate to examine the full range of social, economic, and political factors associated with the increasing migration of health-care professionals from developing to developed countries. However, various explanatory frameworks can help to explain specific elements of this phenomenon. Human capital theory (HCT), colonial and neo-colonial theories, and globalization theories can all provide important insights into health-care migration and the

broad implications of this phenomenon for individuals, source countries and destination countries.

Human capital theory

HCT focuses on how economic incentives influence decisions by individuals to invest in the acquisition of skills and knowledge (human capital) with productive (market) value, and how the costs and benefits of training are allocated between workers and employers. HCT abstracts from the larger social milieu in which individual choices and employees–employer transactions occur. This framework assumes that individuals own their own human capital and rent capital services to employers. The compensation (income) received constitutes the individual's return on investments made to acquire human capital. Human capital accumulation is treated as an investment process because individuals incur costs in the acquisition of skills and knowledge. Such investments normally entail the sacrifice of current consumption in exchange for higher future consumption. The anticipated higher future consumption (higher income) is spread out over an individual's working life. (For a classic discussion of human capital theory, see Mincer (1974).)

Individuals continue to accumulate human capital once they enter the labour market through post-schooling investment in either formal (structured) or informal (learning by doing) on-the-job training. Typically, a worker's productivity is lowered by training in the short run, and increased in the longer term. While undergoing training, a worker is not as intensely engaged in production activities as after training. HCT makes an important distinction between general training and firm-specific training; perfectly general training (training that can be used in any firm and occupation) is universally valuable (i.e., raises productivity); by contrast, perfectly specific training raises productivity only in the firm providing the training. Most actual training consists of elements of both general and specific training.

In the case of general training, a worker's post-training productivity will be the same at either the training provider's operation or another firm. Consequently, workers rather than the firm pay for general training. During training, workers receive a "training wage" that is less than the non-training wage that could be obtained elsewhere. The worker is willing to accept this temporary "loss" because the training is portable, i.e., the full benefits of the training can be captured whether or not the worker stays with the training provider.

By contrast, firm-specific training is not portable. Consequently, after training the worker will be more productive working at the provider firm than at another establishment. Thus, the worker can obtain a higher wage from the provider firm than from another employer. This

does not mean, however, that the training provider can shift all of the costs of training to the worker, as is the case for general training. Attempts by firms to shift all costs create a disincentive for workers to stay with the firm, and the firm risks losing its investment in training if a worker quits. Conversely, if workers pay all the costs of firm-specific training and receive all the benefits (a higher wage reflecting the higher productivity), firms would have no special incentive to retain trained workers. This incentive structure leads to the expectation that firms and workers will share the costs and returns of firm-specific training. This sharing arrangement contributes to employment stability compared to other possible allocation of training costs (for a useful discussion of the treatment of training costs in human capital theory see Sicilian (2001)).

Several modifications are required to apply this framework to the circumstances facing migrating health-care professionals. First, the issue of the costs associated with accumulation of human capital prior to entering the workforce must be considered. The HCT model does not explicitly examine public subsidies that enable future workers to enrol in educational institutions. This convention is reasonable because government subsidies do not generally include any claim on the future incomes or services of subsidy recipients. However, in societies where resources are scarce and the opportunity costs of subsidizing education are high, the case could be made that subsidies provided to cultivate critical skills should be linked to a formal "repayment" commitment in the form of a required period of public service. Publicly funded training programmes for health-care professionals are prevalent in developing countries, as illustrated in the earlier discussion of Zambia.

Repayment would constitute the public capture of some of the returns from human capital investments as a partial payment for socially subsidized training costs. Should a worker decide to migrate, thereby abrogating the agreed reimbursement of training costs, a "departure" payment would be payable to public authorities. Whether the individual or the future employer pays these costs would depend on the relative bargaining power of the worker and the employer.

Unfortunately, economic policies introduced in many countries during the 1980s led to a shift in training costs from governments to trainees. According to a report by Physicians for Human Rights (PHR), structural adjustment policies and health-care reform during this period led to reduced investment in public education and the deterioration of training programmes (PHR, 2004). To the extent that health-care workers are bearing a higher proportion of training costs, governments have less credible claims on returns obtained from investments in personnel.

HCT would also suggest the need to examine the extent to which the skills acquired in the country of origin can be transferred to health-care provision in the destination country. In examining this issue it is

useful to think of a type of "country-specific" human capital that is an extrapolation of the firm-specific human capital discussed above. Potential employers are likely to have perceptions different from those of migrating health-care workers about the extent to which training received in the country of origin is relatively more general or country-specific. Employers are likely to evaluate the human capital of migrating health-care professionals as highly country-specific and, therefore, as requiring substantial retraining. Migrating workers are thus likely to be offered a "training wage" that is lower than that paid to local workers with comparable human capital. The limited bargaining power of foreign workers is also likely to result in their bearing a higher proportion of new country-specific training costs than local workers. The available evidence suggests that this is the case in most developed countries where large numbers of foreign RNs and MDs are employed (Forcier, Simoens and Giuffrida, 2004).

Despite the likelihood of receiving lower returns in the country of migration, there are still incentives for health-care workers to migrate. PHR reports that economic policies instituted in many developing countries during the 1980s led to caps on health-care professionals' salaries, significantly reducing the possibility of earning the expected return on human capital investments.

Neo-colonialism

Contrasting with the emphasis HCT gives to individual choice and responses to market incentives, neo-colonial theories focus on the systemic exploitative features characterizing economic relations between former colonial powers and former colonies. In these models, nation states and elites within nation states are the dominant actors who set the parameters within which less powerful agents operate.

Neo-colonialism is often described as a disguised form of imperialism because it creates the illusion of self-determination. While decolonization involved nominal independence for colonies, former colonial powers were able to continue to practise domination over the terms of trade for goods and raw materials. Neo-colonialism, by contrast with colonialism, operates primarily through systems of indirect control. Under neo-colonialism, resource transfer objectives are achieved partly by creating economic and cultural dependence in the former colonies. This process is achieved by providing political and economic support to ruling indigenous elites, who pursue policies favourable to the neo-colonial powers. Neo-colonial and post-colonial theorists argue that this "external" orientation of ruling elites often results in a deterioration of the circumstances of the larger population, notably in critical areas such as education, development and poverty.

Traditional culture and knowledge are also subverted by means of educational and cultural institutions that mimic those of the former colonizing powers.

There are various ways in which the theories of neo-colonialism can be applied to the case of migrating health-care workers. Specialized types of labour are now in short supply in the countries of the former colonizers. This shortage can be ameliorated by helping trained professionals to migrate from the former colonies to the former colonial metropole. Direct payments to political leaders and/or development aid cultivate support for (or non-opposition to) such arrangements, even if they result in adverse public health consequences for the general public.

Since elites are relatively better insulated from the health consequences of migration, they have little incentive to challenge externally established brain-drain processes. In fact, in countries with both public and private health care, the private systems usually offer superior, but more costly, care. In these countries, it is widely assumed that top government and business officials strictly avoid the public system and, instead, use private health-care providers (Clark and Clark, 2004b).

These transfer mechanisms are most effective when former colonial powers are actively involved in setting local educational and training standards. Such standards are likely to bear little relation to the realities facing the public health system in the developing country. Consequently, trained workers will feel more "comfortable" working in the developed country and are socialized to perceive this as a better option for them, given their quasi-elite status relative to the general public. These workers, however, have little bargaining power in negotiating their compensation and working conditions in the developed country. As in their countries of origin, their options are established unilaterally by decisions made by administrative agencies in the developed country. Consequently, many health-care professionals who migrate to developed countries are often paid less than local workers doing comparable work. This often takes the form of an extended training or probationary wage. In some cases, professionals are forced to accept positions that are one or more steps below their positions in their home countries (e.g. registered nurses working as (less skilled) practical nurses, or physicians working as RNs).

Consistent with the preceding discussion, the vast majority of emigrating health-care professionals move to the nation that formerly exercised colonial control. Other than those from the Philippines, most of the foreign nurses and physicians in the United Kingdom have migrated there from the countries constituting the former British Empire. Also, a significant number of the RNs and MDs in Portugal are migrants from former Portuguese colonies, such as Angola, Mozambique and Cape

Verde. The Philippines, a former American colony, is the leading country supplying foreign nurses for the United States health-care system.

The principal policy implication emerging from the colonization/decolonization analysis is that developing countries need to undertake systematic planning to counter the brain drain, assuming that their interests are not aligned with those of developed countries. PHR notes that investment in health-care systems is critical for developing countries to achieve any sustained pattern of economic development. So, developing countries should resist calls by international development funding agencies to reduce their investments in health care. In addition, PHR argues that there is a need for countries to examine medical education curricula to ensure that training programmes focus on domestic, rather than expatriate, health-care problems (PHR, 2004).

Globalization theories

For present purposes, the focus of globalization theories can be described as the systematic examination of the contemporary advanced stage in the development of a "global economy". This specification recognizes that earlier variants of globalization predate the current configuration. A distinguishing feature of contemporary globalization is the unprecedented extent to which many aspects of the economy are integrated or dependent on a global scale. Information technology has been critical to the advance of such large-scale integration. Globalization today is the result of the rapid growth of international trade and the decentralization of production processes. International and transnational regulatory bodies and multinational corporations have appropriated much of the traditional power of national governments to regulate international trade. Detailed scrutiny of these new actors differentiates globalization theories from neo-colonial and post-colonial theories, although both frameworks highlight similar problem areas.

Decentralized production overcomes some of the traditional difficulties in moving workers across national boundaries. Historically, governments in developed countries played a dominant role in limiting the flexibility of businesses to redeploy labour unilaterally through immigration regulations and industrial relations protocols. However, critics argue that the decline in the relative importance of the nation state in shaping the global economy leaves workers in developed countries increasingly vulnerable, as multinational corporations exercise their right to relocate to low-wage, low-regulation production environments. Detractors of globalization insist that the gradual erosion of the countervailing power once provided by trade unions has exacerbated the vulnerability of workers to managerial decisions that focus almost exclusively on maximizing profit.

Most cost-benefit analyses of globalization conclude that, to date, costs exceed benefits. However, a comprehensive review of the effects of globalization on economic performance, changes in employment, inequality and poverty sponsored by the International Labour Organization (ILO) finds mixed outcomes and emphasizes that the economic benefits and social costs of globalization are unevenly distributed among social groups (World Commission on the Social Dimension of Globalization, 2004). The report concludes that, "as in the case of countries, the people who benefited most from globalization include those associated … with successful multi-national enterprises and with internationally competitive national enterprises" (ibid., p. 46).

In industrialized countries there are varying degrees of internal competition between cities and regions to attract the production operations of multinational enterprises (MNEs) and this competition increases the gap in well-being between winners and losers. In the case of the United States, for example, Shuman (2000, p. 1) laments the fact that "nearly every state, county, city, town, and village in America is hitching its future to globe-trotting corporations." One focus of this internal competition is the effort to provide the best feasible amenities to knowledge workers and managers of MNEs. Health care is one of several amenities critical for employees of MNEs, and the recruitment of foreign health-care workers allows local communities with a shortage of local workers to remain competitive.

In the United States, the increase in hiring foreign workers has occurred simultaneously with the growing domination of health maintenance organizations that have so significantly affected the employment relations and working conditions of health-care workers. These changes parallel those identified as outcomes of the general globalization of labour markets, i.e. a decline in full-time work, significant growth in part-time employment, and the expansion of contract employment (for general discussions of the globalization of labour markets see Memedovic, Kuyvenhoven and Molle (1998); Choi and Greenaway (2001)).

Given this parallel in the direction of change in employment relations, it is important to examine the extent to which the immigration of highly trained health-care workers is linked to the erosion of employment conditions among local health-care workers. For example, are immigrant workers more willing to accept part-time and contractual positions than local workers? Do employers sidestep governmental employment relations protocols in recruiting and hiring foreign health-care workers? Does the employment of foreign health-care workers depress the wages and worsen the employment conditions of local workers?

While it may not yet be possible to find clear answers to these questions, there is a growing consensus that the current patterns of globalization affecting health-care workers do not serve the interests of

developing countries. As a case in point, PHR has recommended that African countries resist the efforts to liberalize trade in health services advocated by the World Trade Organization (PHR, 2004).

Policy discussion

The globalization of the labour market for health-care professionals has implications for individual practitioners, for health-care systems, and for governments. Some of these implications are positive, including the opportunities for nurses and physicians to improve their professional and personal lives and for developed countries to address the shortages of RNs and MDs they face. There are also significant negative consequences, primarily the drain this represents on the ability of less affluent countries to provide adequate health-care for their citizens because of the migration of health-care professionals.

Opinions vary on whether the negative implications of the global labour market for health-care personnel should be addressed through regulation. Market advocates argue that the market is acting as it should, providing an incentive for developing countries to improve conditions, so that health-care professionals will not choose to emigrate. Others, including some developed countries and national and international health-care organizations, have suggested that regulations of some kind should apply to the global labour market.

The primary dilemma facing any proposal for regulation is how to balance the rights and the needs of the main actors involved – health-care professionals, developed countries and developing countries. Most observers of globalization agree that freedom of movement to improve one's professional and personal circumstances is a basic human right. Denial of this right by source countries is not a tenable strategy for dealing with the problem of migration. However, as noted in the discussion of globalization in the previous section, unfair terms of trade and the legacy of colonialism have created market conditions in which a wholesale reliance on free markets will devastate health-care provision in developing countries.

A more plausible approach for source countries is to address the "push" factors that motivate health-care workers to emigrate. Improving compensation, working conditions and professional opportunities for health-care personnel in their home countries would almost certainly reduce the brain drain from developing countries. Some countries are trying less expensive incentives, such as better housing, transport to work, and inexpensive car loans. While many of the poorest nations do not have sufficient resources to make these improvements, some developing countries are exploring the use of international development funds to improve the remuneration packages for health-

care professionals – an option that did not exist in the past (Brown, 2003).

It has been suggested that source countries could intervene in the health-care labour market by raising the cost of recruiting RNs or MDs from a developing country by placing a tax or a tariff on such transactions (Jordan, 2001). The rationale for such a step is that source countries make significant investments in the training of health-care professionals from which destination countries benefit. When those professionals migrate, the source country not only loses that investment, it is also required to train a replacement. Recovering some of their training costs seems a reasonable course of action for source nations. Unfortunately, requiring such a provision is problematic in a number of ways and, to date, no country has taken this step.

However, there has been some support in the international assembly of the World Health Organization for a fund that would train health-care personnel in developing countries negatively affected by migration. The fund would be financed by developed countries as compensation for the investment in training lost by developing countries (Dugger, 2004).

Another strategy that some developing countries have actually initiated involves "bonding" graduates of health-care training programmes. Bonding requires graduates of nurse and physician training programmes to work in the country that funded the training for a period of time, in partial payment for their publicly funded education. However, implementing and enforcing these types of provision have proved difficult (Buchan, Parkin and Sochalski, 2003).

Modification of training curricula to focus on local health-care issues, as recommended by PHR (2004), may be a less intrusive option that could achieve similar results. Consistent with the human capital discussion in the previous section, such an approach would make foreign-trained health-care professionals less desirable to developed countries, because the retraining costs of these workers would increase.

It seems clear that the problems associated with the migration of health-care professionals can only be solved with the cooperation of the destination countries. In fact, strategies focusing on pull factors seem to have somewhat greater potential for reducing migration and its negative impact on source countries. Some countries have already taken voluntary steps of this kind (Schmid, 2004).

Ethical concerns raised about the impact of migration on developing countries have caused the national health services in the United Kingdom and Ireland to adopt ethical guidelines for the recruitment of overseas nurses. Theses guidelines require the services to provide accurate and truthful information to potencial recruits about terms and conditions of employment and, in the case of the United Kingdom, they prohibit the NHS from actively recruting nurses from South Africa and

the West Indies. However, these guidelines do not apply to private health-care facilities. Nor do they restrict public health-care systems from hiring foreign nurses who migrate and apply for positions of their own volition. For this reason, their impact has been limited (Buchan, Parkin and Sochalski, 2003).

Another approach to regulating the migration of health-care professionals is the signing of inter-country agreements that place limits on the number of professionals who can be recruited, thus minimizing the damage to the sending country's health system. In 2000, the United Kingdom signed such an agreement with Spain to engage in "the systematic and structured recruitment" of Spanish nurses for the NHS (Buchan and Dovlo, 2004). The initial target for recruitment was 5,000 nurses. The United Kingdom has also discussed similar agreements with India and China.

In 2003, the British NHS and the Government of South Africa reached agreement on an exchange programme entitling health-care professionals of both countries to work in the other country for up to six months. Although the programme will probably bring more South African RNs and MDs to the United Kingdom than the reverse, the migration will be for a fixed period of time (Mulholland, 2003). And the Caribbean Community (CARICOM) has implemented a programme "to encourage [health-care] professionals to work overseas on a rotational basis, going for three years or so and then returning (Stilwell et al., 2004, p. 598)." The CARICOM nations hope this programme will encourage temporary, rather than permanent migration.

Perhaps the most ambitious attempt to address the problems caused by the recruitment of health-care professionals is the 2003 Commonwealth Code of Practice for International Recruitment of Health Workers. The code establishes an ethical framework discouraging the recruitment of such workers from countries experiencing shortages, and safeguards the rights of health-care employees who choose to migrate (Commonwealth Secretariat, 2003). In the context of the preceding discussion of globalization, the critical question is whether such bilateral or regional agreements can be effective in the context of global trade protocols emerging from the World Trade Organization.

However, the most direct way of reducing the power of pull factors in developed countries is for those nations to address more aggressively the reasons underlying the shortages of health-care professionals they encounter. Ultimately, recruiting RNs and MDs from abroad is a stop-gap strategy. These countries need to take steps to train and retain the personnel they need from among their own populations, and reduce current and future shortages.

Another group of actors can contribute to finding solutions to the health-care migration dilemma. International and regional organizations such as the WHO, the ILO and PHR have the expertise to help

source and destination countries alike, but they do not appear to have the standing needed to impose regulation on the labour market for health-care professionals. However, these organizations have played an important role in examining and documenting the seriousness of migration. They have also developed guidelines and codes of conduct that encourage the parties involved in migration to engage in responsible and ethical practices (see, for example, ICN (2001)).

A coalition of government and nurse association officials in the Caribbean has gone one step further, by developing a comprehensive Managed Migration Programme that attempts to ensure "the delivery of quality health-care to the people in the Caribbean, in the midst of significant migration of skilled professional nursing staff" (RNB, 2004, p. 1). Developed and signed by a significant number of Chief Nursing Officers (top government officials) and by the presidents of the nurses' associations of most countries in the Caribbean, the programme lays out a plan of action to mitigate the impact of migration on health care in the region. It also requests Caribbean countries to take deliberate and significant steps to improve the recruitment and retention of nurses, the degree to which RNs are valued and recognized, their compensation and working conditions, and the educational opportunities available to them. The programme has been the focus of numerous events and conferences in the region and has successfully raised the profile of the migration issue in the Caribbean (Clark and Clark, 2004c, 2004d). Such a cooperative self-help initiative clearly addresses the legacy of colonialism and the impact of neo-colonialism in ways overlooked by many of the other approaches.

While it remains to be seen which, if any, of these strategies can successfully address the negative consequences of the global labour market for health-care professionals, this exploration demonstrates that the search for equitable and growth-enhancing policies can best be pursued by using a mix of theoretical frameworks to assess the implications of policy recommendations.

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