The flight of physicians from West Africa: Views of African physicians and implications for policy

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Abstract

West African-trained physicians have been migrating from the sub-continent to rich countries, primarily the US and the UK, since medical education began in Nigeria and Ghana in the 1960s. In 2003, we visited six medical schools in West Africa to investigate the magnitude, causes and consequences of the migration. We conducted interviews and focus groups with faculty, administrators (deans and provosts), students and post-graduate residents in six medical schools in Ghana and Nigeria. In addition to the migration push and pull factors documented in previous literature, we learned that there is now a well-developed culture of medical migration. This culture is firmly rooted, and does not simply fail to discourage medical migration but actually encourages it. Medical school faculty are role models for the benefits of migration (and subsequent return), and they are proud of their students who successfully emigrate.

Keywords: Africa; Ghana; Nigeria; Medical education; Physician migration; Health policy

Introduction

West African physicians have been migrating away from their sub-Saharan home countries since the first medical doctors were trained there in the middle of the 20th century. They go in search of what they describe as “greener pastures”—better working conditions, better pay, and better training and research opportunities. They leave behind communities in desperate need of not only the health services, but also of the leadership and stability that physicians provide to a health system’s development.

There are at least 11,000 sub-Saharan African physicians known to be licensed and practicing in the UK, US, and Canada (Lynda Buske, Canadian Medical Association, personal communication, 2/3/03; Bonnie Sibbald, University of Manchester, personal communication 1/24/03; American Medical Association, 2002 data). Physician migration from West Africa, in particular, has accelerated dramatically over the last 20 years. While other countries (for example, India and the Philippines) contribute greater absolute numbers to the pool of international medical graduates...
by the World Bank), the proportion of African-trained physicians now practicing in these rich countries is high.

Indeed, if the 515 American and Canadian physicians from Ghana were to return to their country of training, the total physician workforce there would increase by 32.2% above its current 1600 physicians. A 1999 study estimates that of the 489 physicians graduated from the University of Ghana between 1985 and 1994, fewer than 40% remained in the country, with more than half (54.9%) in the UK, and about a third (35.4%) in the US (Dovlo and Nyonator, 1999). In the year 1981, there were 202 physicians in the US who were trained originally in Nigeria or Ghana, but by 2002 that number had grown to 2636—a 1200% increase (American Medical Association, 2002).

This paper reports on a collaboration between American and African researchers in Ghana and Nigeria to review the causes and consequences of physician migration from Africa, based largely on the views of faculty and students in medical schools.

Physician migration generates three areas of concern. The first is a loss of health services available to the populace. Health ministry representatives in Ghana reported, for example, there are no more than 22 pediatricians licensed in the entire country of Ghana, and there are no more than 10 specialists of any kind practicing in the primarily rural region north of the capital city, Accra.

The second effect of physician migration from Ghana and Nigeria is that it diminishes the health sector’s ability to organize and expand. Health sector institutions rely heavily on physicians to lead, develop and promote them as they work to advance the public’s health. As in the US, physicians are well positioned to serve their organizations by competing for resources, articulating priorities and attracting staff. We speculate that as the number of physicians shrinks, the health system itself contracts, contributing to a vicious circle of factors leading to health institution contraction and implosion.

The third problem is that physician migration depletes an important element of the middle class in West Africa. As in the US and UK, African physicians comprise an important segment in the social and economic make up of the middle class. They are generally respected as being above corruption, they advocate for quality public schools, they provide a market for consumer goods, and they contribute to political, social and economic stability. In Ghana, 44.8% of the population lives on less than $1 per day, and in Nigeria, 70.2% (World Bank Development Data Group (n.d.), 2004). As the loss of physicians reduces the middle class, it can increase the proportion of the population living in poverty.

The history of Ghana positions its citizens well for migration. The first African country to achieve independence from European colonization on the sub-continent (1957), Ghana has distinguished itself in the region with relative political stability and fairly universal availability of primary and secondary education. To this day, Kwame Nkrumah, Ghana’s independence movement leader, remains a pan-Africanist hero.

The British first came to Ghana in 1829 to take control of Portugal’s Elmina slave castle in the town of Cape Coast, west of the capital city of Accra on the Atlantic ocean. The castle was built in 1482 as a staging area for slaves captured from throughout West Africa.

The first attempt to provide organized western health services came in 1878, when the British established a civil hospital for Europeans in what is now the capital city of Accra (Addae, 1997). A scholarship scheme in the 1930s was established to train African medical doctors in the UK—thus planting the seeds for the first physician migration. Nigeria was able to establish a medical school before independence (at Ibadan, in 1952), but Ghana did not form a medical school until 1957. For at least 20 years, medical schools in both Nigeria and Ghana officially included a UK study abroad component. The non-indigenous nature of African medical school training programs has equipped its graduates for global migration from the very beginning.

The 1200–1600 Ghanaian physicians practicing in their home country (numbers vary by source) serve a population of 20 million, for a ratio of about 8 per 100,000. Nigeria (the most populous country in Africa) has 23,000 physicians for its population of 124 million people, a ratio of 18.5 physicians per 100,000. These numbers compare to ratios of 164 physicians per 100,000 in the UK, and 279 per 100,000 in the US (see Table 1). In all countries, however, the ratios mask maldistribution, with far fewer physicians practicing in rural areas and inner city locations than in sub-urban and higher-income locations.

The Ghana Health Ministry says its goal is to produce and retain sufficient physicians to create a ratio of 20 doctors for every 100,000 people by 2006 (Ministry of Health, 2002). However, the number of additional physicians required to meet the goal (1865) is greater than the current supply of physicians in the country.

The importance of medical practitioners to Africa is further underscored by the notoriously low-population health status on the continent, particularly in sub-Saharan Africa. While health improvements in Africa will require a broad agenda of development activities, access to an educated workforce of health professionals is also essential (Eckhart, 2002).
Observers often note the compensating role of remittances sent by those who have gone abroad. Sub-Saharan African remittances, at less than $5 billion, comprise the lowest amounts of any poor world region (Stilwell et al., 2003). Further, individuals having benefit of public funds for medical training send their remittances to private parties, with no direct gain for the health or education systems.

**Methods**

We conducted interviews and focus groups with faculty, administrators (deans and provosts), students and post-graduate residents in six medical schools in Ghana and Nigeria in the summer of 2003. The four medical schools in Nigeria—University of Ibadan, University of Benin, University of Nigeria and Obafemi Awolowo University—were selected for having among the highest number of migrant Nigerian doctors in the US (see Table 2). University of Lagos, another top exporter, could not be included in the study as originally planned because of the intensity of a strike (over fuel prices) in that city at the time. Human subjects approval was obtained for this work from the University of Washington.

The first two authors of this paper (AH and AO) traveled in Nigeria and Ghana in the summer of 2003. The third author (AF), a faculty in one of the Nigerian

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**Table 1**
Demographic and health system comparisons among Ghana, Nigeria, the US, and the UK

<table>
<thead>
<tr>
<th></th>
<th>Ghana</th>
<th>Nigeria</th>
<th>US</th>
<th>UK</th>
</tr>
</thead>
</table>
| Population (millions)
  (a)                      | 19.5  | 123.7   | 282.3| 59.5 |
| Life expectancy (years)
  (b)                      | 55    | 45      | 78   | 77   |
| Adult literacy (%)       | 74    | 67      | 101  | 99   |
| Primary school enrollment
  (%)                      | 80    | 82      | 99   | 99   |
| Health spending (
  % of GDP)                 | 7.9   | 3.0     | 16.7 | 14.9 |
| Per capita health spending
  at average exchange rates
  (US$)                    | 11    | 8       | 4499 | 1747 |
| Physicians total (d)     | 1200  | 22,900  | 787,700| 97,600|
| Physicians per 100,000
  population (c)          | 6.2   | 18.5    | 279  | 164  |
| Medical schools total (f) | 3     | 16      | 126f | 37   |
| Population (millions of
  people) per medical school (d) | 6.7   | 8.3     | 2.3  | 1.6  |

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**Table 2**
Sub-Saharan Africa IMGs in the US by top 10 medical schools

<table>
<thead>
<tr>
<th>Medical school</th>
<th># of physicians now practicing in US</th>
</tr>
</thead>
<tbody>
<tr>
<td>Univ of the Witwatersrand (South Africa)</td>
<td>1053</td>
</tr>
<tr>
<td>Univ of Cape Town (South Africa)</td>
<td>655</td>
</tr>
<tr>
<td>Univ of Ibadan (Nigeria)</td>
<td>643</td>
</tr>
<tr>
<td>Univ of Lagos (Nigeria)</td>
<td>429</td>
</tr>
<tr>
<td>Univ of Nigeria (Nigeria)</td>
<td>394</td>
</tr>
<tr>
<td>Univ of Ghana (Ghana)</td>
<td>389</td>
</tr>
<tr>
<td>Addis Ababa Univ (Ethiopia)</td>
<td>200</td>
</tr>
<tr>
<td>Univ of Benin (Nigeria)</td>
<td>183</td>
</tr>
<tr>
<td>Univ of Ife (Nigeria)</td>
<td>156</td>
</tr>
<tr>
<td>Univ of Pretoria (South Africa)</td>
<td>132</td>
</tr>
<tr>
<td>Total (79.4% of total Africans)</td>
<td>4234</td>
</tr>
</tbody>
</table>

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(a) Source: US Census Bureau IDB Summary international data base, [http://www.census.gov/idb](http://www.census.gov/idb)


(d) Calculated from physicians per hundred thousand provided by WHO and census data from US Census Bureau.

(f) Foundation for Advancement of International Medical Education and Research (FAIMER) International Medical Education Directory, [http://imed.ecfmg.org/](http://imed.ecfmg.org/)

(f) American Association of Medical Colleges, [http://www.aamc.org/medicalschools.htm](http://www.aamc.org/medicalschools.htm)
medical schools, secured a consulting faculty member in each of four medical schools in Nigeria and made arrangements for data collection. The fourth author (RB), serves on the faculty at the University of Ghana, and made arrangements for data collection in Ghana, with the fifth author (AE) participating in many of the Ghana interviews.

The authors used a standard set of questions to conduct focus group discussions with 38 students and 33 post-graduate residents in five medical schools in Ghana and Nigeria (see Table 3). The gender of participants was quite balanced, but we did not record ages. Our consulting faculty members at each university recruited focus group participants. In some cases, a group of students or resident doctors was simply asked to remain in the classroom to talk with us after class. All settings used convenience sampling methods. The interview guide was developed and distributed to our contacts in the universities prior to our arrival. Questions in our guide, as approved by our institutional review board, are included in Table 3. We generally conducted interviews in pairs, with one researcher taking notes on a laptop computer. The content was then sorted into topical categories. After sorting, themes were identified and

Table 3
Medical school interviews and focus groups

<table>
<thead>
<tr>
<th>Medical school</th>
<th># Students in focus group (male/female)</th>
<th># Residents in focus group (male/female)</th>
<th>Faculty</th>
<th>Administrators</th>
</tr>
</thead>
<tbody>
<tr>
<td>University of Nigeria (Enugu, Nigeria)</td>
<td>10 (7/3)</td>
<td>15 (9/6)</td>
<td>5 (2/3)</td>
<td>Dean</td>
</tr>
<tr>
<td>University of Benin (Benin, Nigeria)</td>
<td>6 (3/3)</td>
<td>4 (2/2)</td>
<td>8 (5/3)</td>
<td>Provost</td>
</tr>
<tr>
<td>University of Ibadan (Ibadan, Nigeria)</td>
<td>9 (8/1)</td>
<td>7 (6/1)</td>
<td>5 (4/1)</td>
<td>Dean, Deputy Provost</td>
</tr>
<tr>
<td>Obafemi Awolowo University (Ile-Ife, Nigeria)</td>
<td>7 (4/3)</td>
<td>5 (2/3)</td>
<td>4 (2/2)</td>
<td>Provost, Dean</td>
</tr>
<tr>
<td>University of Ghana (Accra, Ghana)</td>
<td>6 (3/3)</td>
<td>2 (female)</td>
<td>10 (7/3)</td>
<td>Provost, Vice Dean</td>
</tr>
<tr>
<td>Kwame Nkrumah University of Science and Technology (Kumasi, Ghana)</td>
<td>0</td>
<td>0</td>
<td>1 (male)</td>
<td>Dean</td>
</tr>
<tr>
<td>Total</td>
<td>38</td>
<td>33</td>
<td>33</td>
<td>9</td>
</tr>
</tbody>
</table>

A sampling of questions for faculty and administration:

- A little about your background: where you trained, specialty?
- How does the curriculum at your school address the nation’s health problems and how do teaching practices deliver the curriculum?
- To what extent do your graduates emigrate to other countries?
- How do faculty view emigration opportunities for their students? Themselves?
- What kinds of students emigrate?
- How much migration of health professionals is there within Africa? To Europe? To the US? Elsewhere?
- Do students talk with you about opportunities to train abroad? How do you advise them?
- Do you have continuing contact with alumni émigrés after they leave the country?
- Are émigrés formally invited to participate in the affairs of the school after they emigrate? Do they do short-term teaching visits, send or bring equipment or texts, that sort of thing?
- What has your school attempted to retain medical school graduates within the country or within Africa? How successful have these been?
- Who benefits from the policies currently in place? Who is harmed?
- What makes it hard to prevent emigration?

A sampling of questions for medical students (adjusted appropriately for residents):

- What year are you in training? Why did you go to medical school?
- What are your plans for residency? Might you go abroad?
- If you think you might go abroad, how will you learn about the opportunities?
- How does your family feel about it?
- If you were to leave for training or practice opportunities abroad, what would be your reasons? If you have colleagues considering leaving, what are their reasons?
- What makes it easy to leave? Hard?
- Is there pressure to stay in your country and practice? How is this communicated? How is emigration to other African countries different from migration to Europe, the US or the UK?
evaluated for the level of support from multiple persons interviewed and evidence provided. Literature reviews and internet searches were conducted to secure additional information.

Strengths of the study include the multi-national composition of the research team, the assistance of a participant local organizer in each university setting, and the eager and generous participation of all interviewees. A serious limitation of the study is that data are limited to the views of those in medical education, primarily physicians and faculty. Other than some Ministry of Health and licensure bureau personnel in Ghana, other stakeholder views were not gathered from primary sources.

Results

Magnitude of migration

All but a handful of the students and residents across all the schools in both countries told us they have a strong desire to leave Africa, at least to obtain more training, but more likely to permanently migrate. Faculty members agree that the desire to emigrate is strong among their students. While medical school education in both Nigeria and Ghana is relatively accessible to students across economic strata, some observers told us they believe medical students are increasingly from affluent backgrounds, giving them a stronger ability to migrate. On the other hand, increasing US barriers to immigration generally may be discouraging the level of migration that would otherwise occur (Croasdale, 2003; Shane, 2003).

African medical schools and licensure agencies have limited data about the magnitude of the migration. Anecdotes were sometimes more telling. For example, one faculty member in Ibadan, Nigeria, said he recently attended the wedding of a former student in Baltimore, Maryland (in the US). “I was amazed at the number of my (former) students who were at the wedding,” he told us. “Those young people were already out (of Nigeria) from 1999 to 2000. I saw only two from 2001, but I was told, ‘Don’t worry, by this time next year, they will all be here.’”

Disparities in training costs and compensation

Because virtually all medical education costs are borne by the public sector, decisions about investments in medical education are an important public policy consideration. West African medical education was estimated to cost between $2000 and $10,000 per student per year, not including a student’s personal costs. Ghana spends $9 million per year (150 students times $10,000 times 6 classes/year), while Nigeria spends $15 million–$20 million. By contrast, several sources estimate the cost of a medical school education in the US to be at least five times higher—$50,000 per student per year for instruction alone, or up to $93,000 per student per year for total educational resources (Jones and Korn, 1997).

Physician earnings in Ghana and Nigeria were estimated to range between $3600 and $12,000 per year. Professors can earn as much as $22,000. By contrast, US physicians earn an average of $162,000 per year (Guglielmo, 2003).

Reasons physicians do not want to stay

The obvious reasons for physician migration have been documented elsewhere (Danso, 1995; Bundred and Levitt, 2000; Pang et al., 2002), and include low pay, insufficient post-graduate training opportunities, general political and economic conditions, and poor practice conditions (especially in rural areas). We also believe there is an additional substantial reason that is rarely addressed. The culture among the remaining physicians in both Nigeria and Ghana is the product of a long history of medical migration. Students learn from their professors, family members, and others about the benefits, both tangible and intangible, of the migration experience. We will discuss this later.

In addition to relatively low pay rates, post-graduate training in Ghana and Nigeria was described by students and faculty alike as frustrating. Doctors in residency training take exams “when they are ready,” and as approved by their supervising consultant, which can prolong the time of specialization for many years. Some suggested the frequency with which students engage in private practice while in training keeps them from promptly readying themselves to take their exams. In Nigeria, students are allowed 6 years in a residency (with a 4-year average). Those “lucky enough to get in” to specialty training have a completion rate as low as 30%. The decision about what qualifies as a passing exam in a post-graduate program was described as fairly arbitrary by several parties.

In both Ghana and Nigeria, regular labor strikes, political corruption, poor infrastructure and the generally low standard of living make life difficult. There are some years when no students graduate from the universities at all because of prolonged labor strikes (1984, 1995 and 2000 for Ghana). During our visit to Nigeria, there was a general strike to protest fuel prices, resulting in the closure of banks, gas stations, and the interruption of electricity (including to hospitals and medical schools). Simultaneous with pay rate declines induced by externally induced structural adjustment programs, Nigeria’s “mindless policies of the military era” (as described by one observer) led to significant Nigerian migration during the 1980s and into the 1990s.
The pervasive poverty, along with the fact that physicians are generally civil servants with public salaries, make it politically difficult to raise salaries for that single professional group significantly beyond other sectors of the labor force, even given the migration potential. In Nigeria, however, a “Medical Special Scale” does give physicians higher total pay than other civil servants.

Conditions in rural areas are particularly dire. Physicians told us they are reluctant to accept postings to rural locations because working conditions are so poor, educational opportunities for their children are limited, and living conditions are harsh (such as limited access to clean water). An additional barrier to rural practice is language; while English is the official language and is widely spoken in urban areas, original tribal languages are still the norm in most homes. English is not spoken at all in many rural places of both Nigeria and Ghana.

Reasons physicians are drawn abroad (and some reasons they are not)

The lure of well-maintained high-tech facilities in rich countries is seductive for physicians. Job security, prestige and high salaries are also motivators. “We watch E.R. on (satellite) television, and the way medicine is practiced there seems almost to be fiction compared to what we have here,” one physician told us. A student expressed his desire to practice high-tech surgery: “I can’t do much if I learn here. We don’t have the facilities for open heart surgery.” Another told us: “If you’re ambitious, you’ll migrate.”

There were also a number of students and faculty who thought US exams are easier and professors are more collegial. Faculty in both Nigeria and Ghana are often engaged in private practice in addition to their teaching duties, class sizes are large, and in general there is much more formality and hierarchy between faculty and students than is found in the US. One Nigerian resident said, “I was at Johns Hopkins, and had senior colleagues who were encouraging me and pushing me and there is mentorship. Here, the consultants verbally abuse you.”

Students, residents, faculty and administrators are all aware, however, that physicians in the US work long hours and have fractured family lives. “They work all the time and their wives and kids aren’t happy,” one resident said. Foreign physicians are also unlikely to have equal opportunities with US counterparts. One physician told us, “Many Americans want to do obstetrics so you have to specialize in something else if you’re from Nigeria.”

Racism in the UK and the US is also a discouraging factor. One Ghanaian physician told us: “As soon as I stepped out of the hospital (where I was training in the UK), I wasn’t a doctor anymore, I was a black man. I’d take a seat in the bus and the white lady next to me takes her bag and goes to stand. She’d rather stand than sit next to me. It was funny and uncomfortable.”

Physician culture in West Africa facilitates migration

Migration is now so prevalent among physicians and their families in West Africa that it would be very difficult to find a trained senior medical doctor who has not been abroad for at least some number of years during his or her career. Further, since the middle class is relatively small, many of its families can name a member on one or another branch of the family tree who is a physician abroad.

Physicians on medical school faculties who have extensive experience abroad serve as role models, and their students are eager for similar high-prestige training opportunities. The message is strong: training and practicing abroad is a marker of success. Furthermore, medical school faculty members measure their own success as teachers by whether their students are competent enough to practice in the competitive medical environments of the UK and the US. They do not discourage migration.

One highly placed physician in the Ghana Ministry of Health told us, “It’s complex. There are many professors whose kids are involved. My kid I am sure will be involved soon, as he is in his second year at Kumasi. My brother in the UK is a surgeon, and his daughter is involved.” Still, he said, “my personal view is that it is a waste of resources (for the country). We have invested and we are not able to get anything out of it.” Another older Ghanaian physician told us, “I have a daughter who is an internist in New York. How can I ask her to come and work here?”

The attitude of many of the faculty members we interviewed was summed by this medical school dean in Nigeria: “We don’t have the resources here (to offer the best possible medical school education or practice opportunities)—this is a terrible environment. The materials in the US are tops. I don’t mind that (our graduates) remain in the US. What are they going to do here? America has the greatest in technology.”

A Nigerian cardiac surgeon commented, “I would encourage a young person to go. I know it’s not a nationalistic attitude. The frustration here is high.” Another: “We are proud of our graduates who have left.”

Still another dean at another school said this: “I’m a teacher. I look at the interest of my students and their life goals. We’re training people for other places! I never thought of it like that. I feel proud that our students are succeeding in other places. In fact, we boast about it. We had a dull student, only average, who went to Canada, took the Canadian exam and came out on top.”
A particularly discouraging signal to physicians in Nigeria comes from the upper class members of society, who travel abroad for their medical care. One student in Benin commented, “If the politicians came to the hospitals (here), they’d be well equipped.”

And, finally, both Ghana and Nigeria offer their medical school instruction in the English language, preparing students well to take the US and UK exams.

Discussion

The forces driving migration are complex, with no simple mitigation strategies. Nevertheless, the high costs of skilled worker migration prompt sending nations to search for ways to stem the outflows (Stilwell et al., 2003). The WHO (2004) and other interested organizations have invariably focused on policies that assume migration is the result of an equation consisting of technical and economic factors (Mejia et al., 1979; World Health Organization, 2002). Our research has demonstrated, however, that cultural factors may be as strong as structural or economic factors in promoting workforce migration.

Policy solutions typically fall into six categories:

1. improving incentives to stay;
2. creating barriers to flight;
3. recouping financial investment losses from those who leave;
4. use of substitutes in the workforce;
5. encouraging return of talent; and
6. appealing to receiving countries for compensation.

Incentives to stay: improve pay, educational opportunities and prestige

Under this strategy, government and private resources would be harnessed to improve compensation to physicians, improve their post-graduate training opportunities domestically and improve their standing in communities. These are strategies that address “push” factors, and not surprisingly, these are the strategies most favored by the physicians we interviewed.

Ghana and Nigeria have both increased physician salaries in the last couple of years in an explicit attempt to stem migration and improve morale, despite reported opposition of a chief creditor, the International Monetary Fund.

Ghana’s “Additional Duty Hours Allowance” (known as ADHA) substantially increased physician pay for direct patient care, often more than doubling salaries. These salary increases have been credited with reducing the flight to a small extent, but they may also have increased the pass rate on post-graduate exams because students can reduce their moonlighting obligations and devote more hours to studying. The medical director at the teaching hospital in Acera, Ghana, said ADHA was responsible for increasing his medical staff from 380 physicians 4 years ago to 430 today.

As a carry-over from the British colonial administration, civil servants (including most physicians) are typically provided living accommodations in the form of housing and sometimes vehicles. The Ghana Health Ministry recently purchased 63 vehicles to distribute to young physicians “who are most vulnerable to leaving” as an incentive to stay. Cars were also given to nurses who have served for 3 years or more.

From the point of view of physicians, however, the down side of receiving housing from the government is that it leaves them without a residence at the point of retirement unless they have been able to gather enough resources to build or purchase their own homes. Many physicians apparently leave the country, even for short periods (and even for non-physician employment), in hopes of earning enough to buy a home when they return (Peil, 1995).

“People want to live reasonably,” one physician told us. “Everyone wants a car. If we had a good transportation system, that would be fine. But a high- up person cannot be seen boarding a tro-tro.” (Tro-tros are van-sized vehicle operated by private drivers that are frequently over-loaded and deliver passengers along flexible routes.)

Physicians saw the value of their pay rates plummet in West Africa in the early 1980s when World Bank-imposed structural adjustment programs shrunk the civil service. Medical degrees are the tickets to enter countries where physicians can earn about 13 times the income they enjoy at home (not adjusted for cost of living). Even if they are not successful in gaining full licensure abroad, they can still take ancillary jobs with significant earning potential (Peil, 1995).

In 2002, Ghana’s parliament invested $3 million in a new post-graduate training program as an explicit strategy to stem emigration, the “Ghana College of Physicians and Surgeons.” Twenty-two hospitals have been identified as training locations, including some district hospitals in rural areas. Nigeria has had a national post-graduate program of its own since the 1970s, in addition to programs established in 1976 to train specialists for all the English-speaking West African countries.

In contrast to West Africa, where fewer than half the medical school graduates attend post-graduate training in their home countries, the US offers post-graduate training positions totaling 129% of medical school graduates (Council on Graduate Medical Education, 1999). Indeed, a primary means by which IMGs gain entry to the US is enrollment in a residency training program, typically in a large inner-city hospital, where
they provide significant amounts of care to underserved populations.

**Disincentives to leave and loss recoupment: penalties and taxes**

Under this strategy, the ministry of health would create legal and financial barriers to physician flight. “Bonding” requires physicians to, in effect, post funds toward their publicly financed education, to be forfeited if they left the country. Ghana once had a program that would require medical school graduates to serve 5 years before emigration or else pay back the cost of their education. Five years is often long enough for young physicians to get established and start families, both of which tend to inhibit migration. This “bonding” requirement has not been in force for some time, however, and is difficult to enforce. The tracking of debtors is difficult, the value of bonds fluctuates wildly in the absence of stable exchange rates, and some argue that bonding should be applied equally to graduates in other fields (Dovlo and Nyonator, 1999).

Tuition is another way for the public to recoup its investment in medical training, even if limited to those able to pay or those who elected not to be bonded. Students and their allies would surely stage strikes should this be suggested, however. (As private universities gain ground in both Nigeria and Ghana, as they seem to be doing, this picture may change.)

Rich countries tax the foreign earnings of émigrés to gather revenues from individuals who desire to retain citizenship. Nigeria and Ghana do not do this, for reasons that are not entirely clear. Some speculated that the mechanics of keeping track of citizens abroad would require an information infrastructure beyond the current capacity of the governments. Indeed, billboards all over Ghana urge citizens now living in the country to pay their taxes—implying that enforcement capacity even among current residents is so low that voluntary compliance is urged.

The ready access to their medical school transcripts allows West African students to seek residency positions abroad with little investment or risk. The University of Ghana has elected to increase transcript fees to 2 million cedis (about $250) for those seeking credentials to go abroad. None of the Nigerian schools we visited had increased transcript fees to a significant amount.

While bonding, tuition, taxes and transcript fees might help the government recoup a small fraction of the cost of physician flight, these strategies do not do much to stop the migration itself. Bonding may offer the strongest disincentive to leave, if only because the bond implies a moral obligation to stay. Many of those who have the resources to afford to leave are probably wealthy enough to pay for the loss of the bond, tuition or transcript fees.

**Use of foreign physicians**

Although West Africa loses physicians to other countries, both Ghana and Nigeria also receive physicians from a few countries. Nigerian physicians have been attracted to Ghana from time to time (and the reverse is also true, depending on the political and economic climates in both countries). Physicians from Eastern Europe and the former Soviet Union countries have also come to Ghana, reportedly as many as 200 by the mid-1990s and more since then (Dovlo and Nyonator, 1999). Ghana also enjoys the deployment of 189 physicians from Cuba, who are sent by their government on 2-year rotations as a form of foreign aid to Africa. While Ghana appreciates this contribution, language barriers and other problems make it a less than optimum way to provide service (Horton, 2001).

Compared to the southern region of Africa, however, West African physicians are more likely to stay in their home country or migrate abroad rather than move to other African countries. By contrast, some African countries have a very large number of foreign physicians, such as Botswana that has no medical school of its own (Rollnick, 2002).

**Train mid-levels in lieu of physicians**

Some poor countries, for example, many of the island nations in the Pacific Basin (Feasley & Lawrence, 1998), have elected to train physicians that are afforded only limited credentials in an effort to block the emigration option. While this might seem an obvious strategy for countries losing large proportions of their graduating classes of physicians, none of the medical school faculty or ministry officials with whom we spoke supported this option. Ghana and Nigeria both train a handful of mid-level non-physician health professionals, but so few (40 a year in Ghana) as to barely make a dent in the need.

“I don’t want any 60% doctors taking care of me when I get ill,” one Ghanaian faculty member told us. A Nigerian said, “We are not a primitive people. We don’t need any barefooted or barehanded anyone.” A medical school dean explained, “Nigerians are very proud.” and another professor said, “I wouldn’t want a half-baked doctor to take care of my mother.” There is almost no support among physicians for a policy option that would train mid-levels in significant numbers in lieu of physicians.

One faculty member in Ghana suggested that medical school students be trained to a point 6 months shy of graduation. Students would then be sent to a rural service obligation for 3 years, during which they would retain close contact with their professors at the medical
school and return for periodic short courses. Upon completion of the 3 years, students would return for their last 6 months of training and only then receive diplomas. They would not be eligible to migrate until they received their final credential, and in the meantime rural areas would be better served. It seems unlikely, however, he acknowledged, that a program of this type would ever get the political support it would require to be adopted.

Return of talent programs

There is some recent discussion in the literature about “brain circulation,” where alumni rotate back through a country to provide teaching, contribute equipment, or otherwise give back to their alma maters. Indeed, medical school administrators in each of the six institutions we visited pointed with pride to the contributions of their alumni.

The contributions, however, are relatively modest and certainly do not compensate for the cost of the lost educational investment. In one Nigerian school, for example, a team of cardiac surgeons came for a few weeks to do heart surgery and left behind some cardiac surgery equipment. Another school said alumni had sent journals and textbooks. Another university said it received a computer projector and a dialysis machine from alumni.

The universities we visited had varying success with alumni organizations, and none could readily provide lists of alumni with their contact information. All expressed interest in surveying their alumni, but none had done so in recent memory.

There are some African organizations in the US that organize to support health initiatives in the sub-continent. For example, African Networks for Health Research and Development (AFRO-NETS) was established in 1997 “to facilitate exchange of information among different networks active in health research for development in Anglophone Africa,” and maintains an active list—serve that broadcasts health news from Africa and offers a discussion forum. Another US group, the Association of Scientists and Physicians of African Descent, is organized “to respond to health distress calls,” through medical missions, educational projects, and emergency relief programs.

Those we interviewed thought emigrant physicians would eventually seek to “return home” to West Africa. At the point of their return, however, they are often ready for retirement. One university dean said, “I don’t want people coming back when they are all used up.” A Ghanaian ministry official described his frustration with émigrés who contact him seeking lavish benefit packages upon their return from 20 or more years of practice abroad, when they have so few years left to contribute to the health system.

Appeal to rich countries that benefit from migration

The benefit to rich countries from the flight of physicians from Africa is condemned by the U.N. Economic Commission for Africa as a “development paradox”—“the reverse of what development aid tries to achieve through transfer of technology and human resources...(by) depriving Africa of its vital development resources (and making) it more heavily dependent on foreign expertise” (Economic Commission for Africa Executive Secretary K.Y. Amoako, 21 July, 2003 Addis Ababa, Ethiopia).

The UK has adopted a code of ethics with regard to health professional migration from developing countries (UK Department of Health, 2003), but it is reportedly only marginally effective (Buchan & Sochalski, 2004). The organized recruitment of nurses from both Ghana and Nigeria to the UK and elsewhere is widely known. (Indeed, when author AH was in Ghana, the hospital nurses attending her daughter with malaria all enquired about opportunities to migrate to the US, assuming most Americans were conduits to recruitment firms.)

The president of the Ghana Medical Association, Jacob Plange-Rhule, was quoted in a recent press report as saying of the recruitment agencies, “This practice is illegal. It is criminal for countries that have more than enough health professionals to recruit from our country knowing that we do not even have the minimum numbers to run our health facilities” (All Africa.com, 2003).

As early as 1966, the executive director of the US Educational Council for Foreign Medical Graduates noted, “It ill becomes us to depend permanently on other countries for the production of medical manpower to provide services to American patients,” adding, “In some (internship programs) the interns, largely the foreign interns, are being used as hired hands to carry out the work of the hospital” (Hunt, 1966). The situation has only gotten worse since the 1966 commentary.

One way to measure the benefit of physician migration to rich countries is to total the avoided costs of educating physicians to the receiving country. For the US, the 478 in-resident Ghanaian physicians can be multiplied by the $372,000 estimated cost to train a US physician (not including residency), to yield an amount exceeding $178 million.

Poor countries have access to certain international forums where they could officially lay claim to compensation for the appropriation of their investments in medical education. A recent report by Physicians for Human Rights recommends “wealthy nations should reimburse developing countries for the training costs and health impact of health professionals who migrate (Friedman, 2004).” The New York Times, in an editorial last summer, concurred (NYT, 2004).
Receiving nations, too, will do well to consider the ethical issues involved, as cautioned by the University of Liverpool’s Dr. Peter Bundred: “If we don’t put health care and social resources back into developing countries as fast as we take them out, we will have another September 11 as sure as eggs is eggs” (Wharry, 2002).

Conclusions

We suggest two approaches to expanding access to care. First, to get services to rural areas in the short term, mid-level providers could fairly rapidly be trained and placed in remote areas, as WHO originally recommended in 1979. These professionals should be provided with standardized tools and clinical aids such as standing orders to enable them to function at the highest possible levels. Some of the Safe Motherhood initiatives, for example, aim to expand the skills of nurses to manage emergency obstetrics conditions (Kwast, 1995).

Another example is the training of medical assistants to perform surgery in Mozambique (Vaz et al., 1999). The literature does not encourage the training of low-level traditional birth attendants or village health aides, however, as these have been ineffective (Smith et al., 2000; Stekelenburg et al., 2003).

Second, our study supports an improved overall health worker compensation strategy. Many observers would advise that salary improvements be particularly directed towards those willing to practice in rural areas, even for short terms (WHO, 2004). Incentives that go beyond salary, however, might be even more cost-effective, and these include fringe benefits and provisions for car and housing (Vujicic et al., 2004).

Many believe the funds to support this effort should be extracted from the wealthy nations that benefit most from physician immigration, the US and the UK (Lancet, 2000; Bundred & Levitt, 2000). Britain’s health service has officially (if ineffectively) adopted policy measures to limit recruitment from developing countries. The US, whose health system is not organized centrally, has limited ability (and little will) to impose that kind of restriction on private parties.

A variation on this theme might include rich country investment in supporting higher-education efforts in West Africa. One good model has been medical school sister relationships (“twinning,” to some). These formal or informal links between institutions or individuals at various institutions cross borders, are for mutual benefit, are highly organic and reportedly result in significant benefits for the entities involved. They are generally small-scale enterprises, however. The Tropical Health and Education Trust, established in 1988, is one organization that promotes these relationships (Parry & Parry, 1998) (Bundred & Gibbs, 2002).

Further research is required to ensure resources are used wisely to address health workforce problems in Africa. The 57th (World Health Assembly, 2004) resolved to elevate human resources to a top-priority for WHO and to help member countries set up information systems to monitor the movement of health personnel (World Health Assembly, 2004). Information system development is an area ripe for contributions from research. Collaborations between African researchers and those in the US, UK, and other rich countries have high potential to create valuable new knowledge.

The provost at one of the universities we visited had this caution for the rich countries “poaching” physicians from Africa: “Poor countries are now subsidizing the rich ones. If you make people that poor and desperate they will do the craziest things. Africa will become a fertile place for terrorists, a lab for the manufacture of new viruses. No one is free. It’s not in the interests of your country (the US) to continue this way in the long run.” Another university’s provost agreed: “It’s unfair for our government to subsidize education so heavily and for another country to benefit.”

The conditions that allow physicians to travel freely from the poor countries in which they train to the rich ones in which they work are not likely to change soon. The peculiar disparities in the economies of the two worlds, akin to a time warp, create global mobility opportunities for physicians that benefit rich countries at the expense of poor ones. In the long run, only global income equity will solve the problem. In the meantime, it seems appropriate for rich countries that receive physicians from poor countries to make compensation for their lost investments.

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