

**Filling The Gaps: International Medical Graduates In  
The United States, The United Kingdom, Canada and Australia**

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Prepared for presentation at  
The 8<sup>th</sup> International Medical Workforce Conference  
Washington, DC  
October 6-9, 2004

## **Introduction**

The United States, the United Kingdom, Canada and Australia have been the beneficiaries of large-scale physician immigration over the last half-century. Medical training positions in these nations as well as medical employment opportunities have proved a strong draw for physicians from many nations seeking the clinical and economic advantages extant in these four wealthy English-speaking countries. The routes of medical migration are now well established including recipient country certification exams offered in source countries, strong linkages between educational institutions in source countries and training hospitals in recipient countries, IMG professional organizations in recipient countries, and multi-generational, bi-national families.

The “Brain Drain” has always been the subject of conjecture and comment in all the nations involved but growing global concerns about health equity, health disparities, and the severe variations in human resources for health in various parts of the world give reason to re-examine this phenomenon. This paper will quantify the magnitude and origin of the IMG contribution to the workforces of each of the four recipient nations.

## **Methods**

Data concerning the countries of origin of all active IMG physicians in the United States, the United Kingdom, Canada and Australia were obtained from sources in the respective countries.

### **The United States**

The number of IMGs in practice and training in the United States was derived from the 2004 AMA Masterfile with additional information provided from the database of the Educational Commission for Foreign Medical Graduates (ECFMG). Physicians were assigned by country of qualification with “US IMGs” distinguished by use of country of birth data.

### Canada

Data from the Southam Medical Data Base (SMDB, maintained by the Canadian Institute for Health Information) and the Canadian Post-MD Education Registry (CAPER, maintained by the Association of Canadian Medical Colleges) were melded to produce the Canadian IMG figures. The physicians are assigned by country of qualification.

### The United Kingdom

The National Health Service (NHS) maintains databases on all of its physicians.

Although data is available on country of qualification for physician working in England, it is not for those working in the NHS in Scotland, Wales and Northern Ireland.

Therefore, to arrive at the number of IMGs in the NHS in the UK, the English figures were adjusted upward by 15 percent and IMG country assignments were made on a prorated basis to reflect the missing jurisdictions. Physicians working in the UK but not employed by the NHS include those in purely private practice, the armed forces, the prison system, the civil service (clinical officers) and physicians performing locum tenens under contract to the NHS. A prorated upward adjustment of 10 percent was made to reflect this additional workforce.

## Australia

Data were supplied by the Labour Force and Rural Health Unit of the Australian Institute of Health and Welfare (AIHW) on the country of qualification of IMGs in Australia in 1999. The country of qualification of 21% of the IMG physicians in this data set was missing and these physicians were given country of qualification assignments on a prorated basis. Additionally there are large numbers (as many as 6000) IMGs working in Australia under temporary visas termed Overseas Temporary Doctors (OTDs) or Temporary Resident Doctors (TRDs) who are not in the AIHW data base used here and not reflected in the numbers reported in this study.

## **Additional Analyses**

The World Bank's Global Economic Index was used in the analyses of the economic status of source and receiving countries. This index divides the world's economies into four categories – low income, lower-middle income, upper-middle income and high-income countries. Data concerning the numbers of physicians per country and the physician per population ratio of countries was drawn from the WHO Database

## **Findings**

The percent of IMGs in the workforces of the United States, the United Kingdom, Canada, and Australia are displayed below as well as the top 20 source countries for each recipient nation. Additionally, the source countries of all IMGs in each recipient country

are grouped by the categories of the World Bank Economic Index and displayed. Finally, data on IMGs in several other OECD nations are shown for comparative purposes.

**Exhibit 1:** Number of physicians per 100,000 population in recipient countries.

<b>Country</b>	<b>Number of physicians</b>	<b>Population</b>	<b>Physicians per 100,000 population</b>	<b>% of IMGs</b>
United States	796,013	285 million	279	26.8
United Kingdom	136,536	60 million	228	28.3
Australia	50,221	20 million	247	20.6
Canada	68,096	31 million	220	23.1

Source: calculated

**Exhibit 2:** Top 20 nations providing physicians to the US.

#	Country	Percent of total physicians	Percent of total IMGs	Number of IMGs
1	India	5.3	19.7	42,048
2	USA (US IMGs)	3.4	12.5	26,668
3	Philippines	2.2	8.1	17,297
4	Canada	1.6	6.0	12,824
5	Pakistan	1.2	4.5	9,678
6	China	1.0	3.6	7,753
7	Iran	0.7	2.5	5,316
8	Korea	0.6	2.2	4,618
9	Egypt	0.6	2.1	4,471
10	Cuba	0.6	2.1	4,449
11	Syria	0.4	1.7	3,573
12	United Kingdom	0.4	1.6	3,399
13	USSR	0.4	1.5	3,288
14	Poland	0.3	1.3	2,773
15	Lebanon	0.3	1.3	2,712
16	Colombia	0.3	1.3	2,667
17	Romania	0.3	1.2	2,454
18	Germany	0.3	1.1	2,417
19	Mexico	0.3	1.1	2,370
20	Argentina	0.3	1.1	2,251

Source: ECFMG, AMA, 2004

**Exhibit 3:** Countries providing physicians to the US grouped by income.

#	Income groups	Percent of total IMGs	Number of IMGs
1	Low-income economies	30.4	64,925
2	Lower-middle-income economies	32.6	69,524
3	Upper-middle-income economies	7.2	15,379
4	High-income economies	29.8	63,456
5	High-income OECD members (include some from group 4)	28.5	60,890

Source: calculated

**Exhibit 4:** Top 20 nations providing physicians to Australia.

#	Country	Percent of total physicians	Percent of total IMGs	Number of IMGs
1	United Kingdom	6.7	32.5	3,365
2	India	3.1	14.9	1,546
3	New Zealand	2.5	12.1	1,257
4	South Africa	1.8	8.7	904
5	Sri Lanka	0.9	4.4	452
6	Egypt	0.8	3.8	393
7	Singapore	0.6	3.1	316
8	Ireland	0.6	3.0	306
9	Hong Kong (SAR of China)	0.4	2.2	225
10	Poland	0.3	1.3	136
11	Philippines	0.2	1.1	113
12	Malaysia	0.2	1.1	110
13	Pakistan	0.2	0.9	96
14	China	0.2	0.8	81
15	Vietnam	0.2	0.8	78
16	Germany	0.1	0.7	73
17	Myanmar	0.1	0.6	67
18	Hungary	0.1	0.6	61
19	Serbia and Montenegro	0.1	0.5	56
20	Slovakia	0.1	0.5	55

Source: Australian Institute of Health and Welfare, 1999, adjusted

**Exhibit 5:** Countries providing physicians to Australia grouped by income.

#	Income groups	Percent of total IMGs	Number of IMGs
1	Low-income economies	18.5	1,912
2	Lower-middle-income economies	21.5	2,231
3	Upper-middle-income economies	4.0	417
4	High-income economies	56.0	5,795
5	High-income OECD members (include some from group 4)	50.5	5,227

Source: calculated

**Exhibit 6:** Top 20 nations providing physicians to Canada.

#	Country	Percent of total physicians	Percent of total IMGs	Number of IMGs
1	United Kingdom	4.0	17.4	2,735
2	South Africa (Republic of)	2.6	11.2	1,754
3	India	2.1	9.2	1,449
4	Ireland	1.7	7.4	1,164
5	Saudi Arabia (Kingdom of)	1.0	4.2	658
6	Egypt	0.8	3.6	558
7	United States of America	0.8	3.3	519
8	Poland	0.6	2.8	441
9	France	0.6	2.8	432
10	Pakistan	0.5	2.0	320
11	Philippines	0.4	1.7	261
12	Australia	0.4	1.6	247
13	Hong Kong (SAR of China)	0.3	1.4	224
14	Vietnam	0.3	1.4	223
15	Taiwan	0.3	1.2	189
16	Romania	0.3	1.2	187
17	Jamaica	0.3	1.1	179
18	Sri Lanka	0.2	1.0	163
19	Lebanon, Republic of	0.2	1.0	161
20	Kuwait	0.2	1.0	154

Source: Canadian Institute for Health Information, 2002 and CAPER, 2002

**Exhibit 7:** Countries providing physicians to Canada grouped by income.

#	Income groups	Percent of total IMGs	Number of IMGs
1	Low-income economies	16.1	2,528
2	Lower-middle-income economies	27.3	4,292
3	Upper-middle-income economies	14.1	2,206
4	High-income economies	42.5	6,675
5	High-income OECD members (include some from group 4)	38.8	6,087

Source: calculated



**Exhibit 8:** Top 20 nations providing physicians to the United Kingdom.

#	Country	Percent of total physicians	Percent of total IMGs	Number of IMGs
1	India	10.9	38.4	14,862
2	Ireland	2.1	7.2	2,801
3	Pakistan	1.9	6.9	2,652
4	South Africa	1.4	5.0	1,950
5	Egypt	1.1	4.1	1,567
6	Nigeria	1.1	3.9	1,506
7	Germany	1.1	3.9	1,500
8	Sri Lanka	1.0	3.6	1,400
9	Iraq	0.9	3.2	1,229
10	Australia	0.6	2.2	858
11	Spain	0.5	1.7	647
12	Greece	0.4	1.5	587
13	Burma	0.4	1.2	480
14	Jamaica	0.3	1.2	465
15	Italy	0.3	1.2	457
16	Bangladesh	0.3	1.2	457
17	Netherlands	0.3	1.1	413
18	Sudan	0.3	1.0	389
19	Libya	0.3	1.0	388
20	New Zealand	0.2	0.8	300

Source: NHS, 2004, adjusted

**Exhibit 9:** Countries providing physicians to the United Kingdom grouped by income.

#	Income groups	Percent of total IMGs	Number of IMGs
1	Low-income economies	54.4	21,015
2	Lower-middle-income economies	20.8	8,041
3	Upper-middle-income economies	2.7	1,033
4	High-income economies	22.2	8,567
5	High-income OECD members (include some from group 4)	21.3	8,240

Source: calculated

**Exhibit 10:** Income status summary of IMG source countries by recipient country

<b>Country</b>	<b>% of IMGs from low- and lower-middle-income countries</b>	<b>% of IMGs from upper-middle and high-income countries</b>	<b>% of IMGs from high-income OECD countries</b>
United States	63.0	37.0	28.5
United Kingdom	75.2	24.9	21.3
Australia	40.0	60.0	50.5
Canada	43.4	56.6	38.8

Source: calculated

**Exhibit 11:** Foreign-trained physicians in selected OECD countries as a percentage of practicing physicians in the year 2000.

<b>Country</b>	<b>% IMGs</b>
New Zealand	34.5
England	30.0
United States	24.2
Canada	21.1
Australia	19.6 (1995)
Switzerland	17.8
Norway	12.7
France	3.0
Austria	1.5
Japan	1.0

Source: OECD

**Exhibit 12:** Composition of foreign medical workforce in Switzerland, 2001.

Germany	59.7%
Yugoslavia	13.1%
Belgium	7.4%
Sweden	4.9%
Italy	4.8%
Albania	4.0%
Spain	3.2%
Argentina	2.9%
<b>Total</b>	<b>100.0%</b>

Source: OECD

**Exhibit 13:** Composition of foreign medical workforce in Norway, 2001.

Germany	32.7%
Sweden	19.9%
Denmark	15.8%
Central and Eastern Europe	11.5%
United Kingdom	6.2%
Iceland	6.1%
Finland	5.3%
Netherlands	2.4%
<b>Total</b>	<b>99.9%</b>

Source: OECD

## **Conclusions**

### **Impact on Recipient Countries**

- 1) IMGs constitute a major component of the medical workforces of the recipient countries in this study.
- 2) The United States and the United Kingdom draw more heavily on physicians from poorer countries than do Canada and Australia.
- 3) English language and colonial links are closely associated with the preponderance of migration.
- 4) Substantial “cycling” occurs between the four receiving countries.
- 5) The high levels of physician immigration and the reliance on physicians from poor countries is a characteristic of the four nations in this study and much less pronounced in other OECD countries.
- 6) A chronic mismatch between numbers of domestic physicians trained and the demand for physicians in the receiving countries is the key historic and current factor underlying the movement of physicians in this study.
- 7) The reliance of large numbers of IMGs as an implicit element of a nation’s workforce policy has important implications for domestic educational planning and domestic opportunities to study medicine.

### Impact on Source Countries

- 1) Many source countries have made substantial physician contributions to the health systems of the recipient countries. This transfer of human capital is often from poor countries to rich ones.
- 2) The impact of emigrating physicians varies from nation to nation but it uniformly costs the source country financial resources (investment in education) and human capital (gifted, ambitious people.)
- 3) Education systems in many source nations are impacted by the “Western aspirations” of their students resulting in training programs geared to patterns of disease and levels of technology not well aligned with the nation’s needs. The resultant graduates can be unsatisfied with local opportunities, inappropriately trained for local problems, and inclined to seek placements abroad.
- 4) New opportunities (tele-health, new pharmaceuticals) and new challenges (HIV/AIDS, MRD-TB) are bringing new importance to the adequacy of a nation’s physician workforce. The inadequacy and instability associated with large emigration limits a country’s ability to respond to current medical opportunities and challenges.

### **Discussion**

The following circumstances exist currently in all of the recipient nations -- United States, the United Kingdom, Canada, and Australia.

- 1) Strategies are in place and/or pressures are being felt to increase the size of the physician workforce.
- 2) There are areas in each of these countries that for reasons of geography and/or economy are less appealing practice locations for domestic physicians. This is true of all nations and is likely to be the case in perpetuity.
- 3) The recipient nations have all structured conditions of entry and training for immigrant physicians so that they work disproportionately in hard to serve areas, meeting the recipient nation's need for both more physicians and the staffing of its underserved areas.

These realities suggest that, absent purposeful policy and program interventions, the draw on IMGs by all of these countries is likely to increase in the near future. This, in turn, will cause increasing problems with the delivery of and development of new health services in many source countries. It will also reinforce the questions about the role of the recipient countries as responsible global citizens.

Strategies that have been proposed to address the physician "Brain Drain" include...

- 1) **Changes in emigration and immigration policies "to keep doctors at home."**

There is little evidence that singling out physicians for special restrictions has any political or technical viability at either end of the migration. Human rights concerns also make such strategies hard to support.

- 2) **Codes of conduct for physician recruitment.** The establishment of such codes has provided a useful forum for the discussion of recruitment practices including government-to-government compacts and “poaching.” There is little evidence, however, that such codes have any long-term effect on the movement of physicians, most of whom identify their own opportunities and travel on their own. Private recruiters, moreover, are not bound by governmental statements of principle.
- 3) **Reparations.** Some have argued that recipient nations should reimburse source nations for the value of the physicians who move from one country to another. While this idea has moral appeal, the technical and political realities are harder to envision. At what point in a physician’s course of travel would a payment be made, for how much, from whom and to whom? Structured programs of exchange and education sponsored by receiving country governments might provide value to source countries and be more politically acceptable to recipient country governments.

Self-sufficiency in medical education -- or the lack thereof -- is a far more potent regulator of physician migration than all of the other legal, ethical, and regulatory options available to source and receiving countries. The governing variable in physician migration has been the presence and size of the deficit in the domestically educated physician workforce in the receiving countries. If the vacancy rates in the physician market in the United States, the United Kingdom, Canada and Australia were lowered, the amount of global medical migration would be greatly reduced.

This perspective should be reason for medical educators and government policy makers in receiving countries to review their long-standing and usually non-explicit policies of deficit education with an eye to the future. Domestic educational investments would bring the future number of medical graduates more in line with the anticipated future needs for medical services, would increase the medical education opportunities for their own citizens, and would reduce the dependence on other countries. The pursuit of self-sufficiency in medical training would inevitably decrease the amount of medical migration from poor countries to rich ones and allow the latter to stabilize their physician workforces and focus their levels of training on national needs rather than on the international physician market.

**Acknowledgements:**

I want to thank Oksana Garkovenko who was of invaluable help in managing the data for these analyses. I also want to express my appreciation to the following individuals who were of enormous help in assembling the IMG data from the four countries presented here: Ed Fryer, Jack Boulet, John Bates, Claire Thompson, Eve Warner, Steve Slade, Diane Thurber, Jill Strachan, Paul Gavel, Serge Chrisopoulos, Julie Evans, Philip Mitchell, and Mark Jorgensen.