

# INTERNATIONAL MEDICAL GRADUATES IN AMERICAN MEDICINE:

Contemporary challenges and opportunities



**A position paper by the AMA-IMG Section Governing Council**

January 2010



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## Acknowledgements

The American Medical Association (AMA) International Medical Graduates (IMG) Section Governing Council would like to acknowledge the valuable contributions of the following individuals, without their expertise and commitment, this paper would not be possible.

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## Foreword

International medical graduates (IMGs) have been an integral part of American medicine since the late 1940s. These graduates arrived in America from more than 125 countries with varying cultural and linguistic backgrounds in search of advanced knowledge and skills in medical institutions of higher learning. In looking at the challenges they face, the sacrifices they make, the disappointments they encounter and the successes they achieve, the IMG journey is often arduous and heroic.

In the words of Jordan Cohen, MD, former president of the Association of American Medical Colleges, “Indeed, examples abound of IMGs who have improved health care delivery, provided care to underserved populations, made groundbreaking discoveries in biomedical research, introduce new surgical techniques, pioneered innovative teaching methods, and more” (Jordan, 2006). And he is correct—there are multiple facets to the IMG story.

Among all advanced nations, America is the most welcoming country to IMGs. Nonetheless, the presence of IMGs in America has raised questions about the soundness and adequacy of IMGs’ medical education, the quality of the medical care they deliver, their contribution to increasing the physician supply and deepening the physician maldistribution and finally, causing brain drain. On the other hand, IMGs often feel perplexed, overwhelmed and discriminated against, although they also feel appreciative of the opportunity to receive world-class medical training.

To start, IMG presence in the United States is the latest episode in “medical migration,” which is an age-old phenomenon. From the Civil War to World War II, Americans went abroad for advanced medical education and brought back new knowledge and skills that improved the way American medicine was practiced and taught. Now America hosts physicians from all over the world seeking similar opportunities, even though a majority of these international graduates do not return to their native lands after completion of their training.

Understandably there are considerable concerns over the “brain drain” phenomenon—that is, depleting poor nations of their scarce physician resources. At the same time, some feel there is insufficient appreciation of American values, quality control systems and American currency, all of which help to improve the living conditions and the manner in which medicine is practiced and taught in foreign countries. This cultural and educational exchange is perhaps the most beneficial, but intangible, aspect of IMG and U.S. interaction. The value of this exchange is equal to the work done by thousands of U.S. Peace Corps volunteers in all corners of the world without a single penny spent by taxpayers. In addition,

the entry of approximately 6,000 IMGs into the United States every year contributes a few billion dollars to the U.S. economy, which is equal to the output of 50 additional medical schools without any cost to the taxpayer.

It becomes evident that the story of IMGs is a very complex one indeed, and in this document, the American Medical Association (AMA) IMG Section committee will provide a comprehensive review of IMG literature. The background of this document begins with Rajam Ramamurthy, MD, who served as chair to the AMA-IMG Governing Council from 2004 to 2005. During her tenure, the governing council addressed the issues related to IMGs’ role in the U.S. physician work force by creating a document titled “IMGs in American medicine: A discussion paper.” This paper was updated annually by each year’s governing council’s work force committee. In view of dramatic changes taking place with the nation’s health care reform and the expansion of U.S. medical school output, the discussion paper was subjected to a thorough revision this year. Its title was also slightly changed and is now “International medical graduates in American medicine: Contemporary challenges and opportunities.”

This paper begins with a description of the history of IMGs in the United States in the context of the evolution of graduate medical education. It reviews the controversies surrounding physician supply, as well as IMGs’ role in health care delivery. It presents the current demographics in the IMG work force, highlighting the resilience of IMGs. In addition, the paper discusses issues concerning brain drain and the IMGs’ role in the organizational structure at the AMA. The discussion concludes with recommendations stemming from the issues discussed. Topics were chosen to reflect major priorities in the professional and educational life of IMGs.

In spite of our best efforts, it is very difficult to comprehensively address all topics that pertain to IMGs in a single document. One may find that some topics lack depth, while others might require further elucidation. As editor of this document, and as chair of the AMA-IMG Section Workforce Paper Committee, I found the experience extremely stimulating and enriching. I thank members of the work force committee for the generosity of their time and efforts, and AMA staff, led by J. Mori Johnson and Carolyn Carter-Ellis, for their extraordinary support of this project. They gave me a free hand in the choices made, participated in multiple phone calls and submitted their contributions with great enthusiasm.

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## Introduction

Medical migration, the phenomenon of physicians traveling far and wide in search of new knowledge and skills, has been practiced for several centuries. China, Great Britain, France, Germany and now the United States have all attracted international students at different times by their dominance of medical education and practice. In the 19th century, American physicians traveled to Europe, especially France and Germany, to pursue medical education. When they returned, the knowledge and skills these physicians brought back to the United States profoundly changed medicine in America (Baron, 2005). Since the end of World War II, the United States has been the preferred destination for physicians from all over the world for training in graduate medicine. However, these recent international physician visitors differed from previous generations in that they frequently did not return to their native country—instead, these physicians made the United States their home.

Physicians who received their undergraduate medical education outside of the United States and Canada are referred to as international medical graduates (IMGs). IMGs are a heterogeneous group from more than 127 nations with varying cultural and linguistic backgrounds, and they are critical to delivering health care in the United States. In 1963, IMGs represented slightly more than 10 percent of the physician work force in the United States. Today, they comprise 25 percent of the U.S. physician population.

In the following pages, the American Medical Association (AMA) IMG Section Workforce Paper Committee will examine various aspects of the IMG presence in the U.S. physician work force. There are several purposes for writing this position paper. First, we want to tell the story of IMGs. We also seek to offer our perspective on some of the issues that confront IMGs in order to place IMG presence in a historical context, to clarify misconceptions, to highlight IMG contributions, and to confront unfair and biased criticism wherever it occurs.

## Profile of IMGs

An examination of IMG demographics reveals that a majority of present-day IMGs are clinicians. According to Jordan Cohen, MD, and Fitzhugh Mullan, MD, 25.8 percent of total physicians are in patient care (Jordan, 2006) (Mullan, 1995). Within the IMG physician population, 77.5 percent are in patient care. Of these IMGs (188,638), nearly three-quarters are office-based physicians. In addition, one-fifth of all physicians are in research (19.6 percent), and 1 out of 6 physicians who are in medical teaching (16.8 percent) were IMGs. Only 13.5 percent of all physicians are in administration. Twenty percent of all IMGs are in research and 13.5 percent are in administration.

TABLE 1

### General IMG statistics, 2007

Number of physicians in U.S.	941,304
Number of IMG physicians	243,457 (from 127 countries)
% IMG physicians in U.S.	26.0
% IMGs in residency programs	27.8
% IMGs in primary care	58.0
% USMGs in primary care	26.0
% IMGs in patient care	73.0
% IMGs in academics	14.0

Percentages exclude resident/fellows unless otherwise stated  
*Physician Characteristics and Distribution in the U.S.*, American Medical Association, 2009

IMGs are chiefly concentrated in New York, California, Florida, New Jersey and Illinois. The top five countries of origin among IMGs are India, The Philippines, Mexico, Pakistan and the Dominican Republic.

TABLE 2

### Top 20 countries of medical education for IMG physicians % of total IMG population (number of physicians)

Country	Total	Percentage
India	51,447	20.7%
Philippines	20,601	8.3%
Mexico	13,834	5.6%
Pakistan	12,111	4.9%
Dominican Republic	7,979	3.2%
Grenada	6,749	2.7%
USSR	6,450	2.6%
Dominica	5,854	2.4%
China	5,375	2.2%
Egypt	5,266	2.1%
Iran	4,940	2.0%
South Korea	4,845	2.0%
Italy	4,732	1.9%
Spain	4,343	1.8%

Germany	4,197	1.7%
Syria	3,869	1.6%
United Kingdom	3,698	1.5%
Montserrat	3,569	1.4%
Colombia	3,343	1.3%
Ireland	3,302	1.3%

American Medical Association Physician Masterfile, 2009

TABLE 3

### Top 20 states where IMGs practice, 2007

State	Total number of IMGs	Percentage of total physician work force
1. New York	35,934	42%
2. California	26,209	23%
3. Florida	20,243	37%
4. New Jersey	13,824	45%
5. Texas	13,705	24%
6. Illinois	13,698	34%
7. Pennsylvania	11,231	26%
8. Ohio	10,046	29%
9. Michigan	9,749	34%
10. Maryland	7,262	27%
11. Massachusetts	7,377	22%
12. Virginia	5,197	22%
13. Georgia	4,597	20%
14. Connecticut	4,339	29%
15. Missouri	3,600	22%
16. Arizona	3,461	22%
17. North Carolina	3,393	13%
18. Indiana	3,238	21%
19. Tennessee	3,069	17%
20. Wisconsin	3,075	19%

*Physician Characteristics and Distribution in the U.S.*, American Medical Association, 2009

TABLE 4

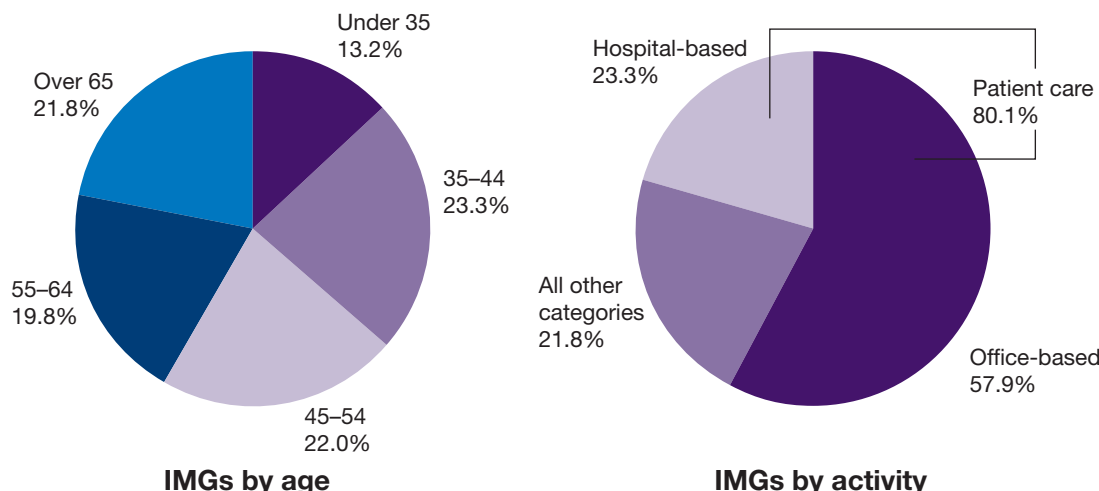
### Primary specialty of IMGs, percentage in specialty (number of IMG physicians)

Internal medicine	37% (58,818)
Anesthesiology	28% (11,717)
Psychiatry	32% (13,146)
Pediatrics	28% (20,647)
Family medicine	27% (23,111)
Obstetrics/gynecology	17% (7,465)
Radiology	19% (1,681)
General surgery	20% (7,353)

*Physician Characteristics and Distribution in the U.S.*, American Medical Association, 2009

TABLE 5

**IMGs by age and major professional activity, 2007**



Physician Characteristics and Distribution in the U.S., American Medical Association, 2009

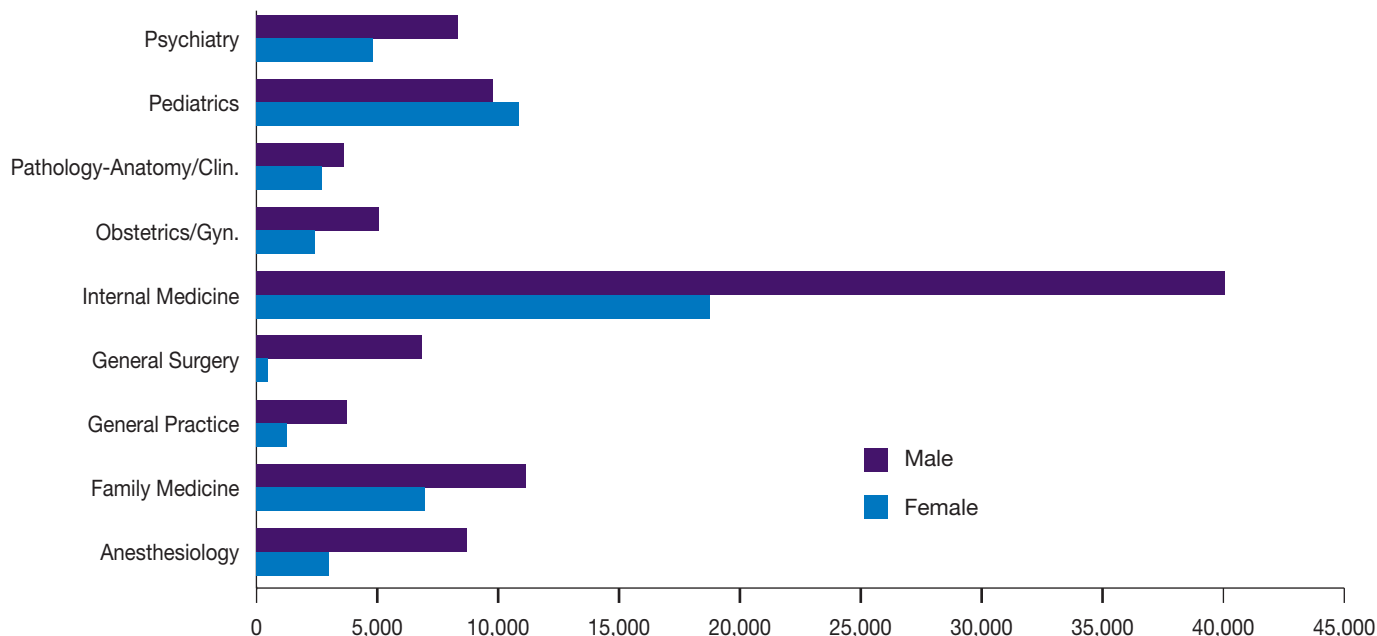
Nearly twice as many IMGs were in the 35 to 44 age group in 2007 than in the under-35 age group. Female IMGs constituted 30.6 percent of the IMG complement. In other words, 87 percent of IMGs are 35 years and older and, in this aspect, are more similar in age to a second-career physician among U.S. medical graduates (USMGs). The implications of this fact are important. For example, a more mature IMG, while carrying out his patient care activity with a greater sense of responsibility than his younger colleague, may exert a stabilizing

influence on younger colleagues who are in residency training. On the other hand, the graying of the IMG population may presage their ultimate extinction from the physician work force, which could have significant public health ramifications.

Nearly three-fifths of IMGs are in the following specialties: internal medicine, pediatrics, family medicine, psychiatry, anesthesiology, obstetrics-gynecology, general surgery and cardiology.

TABLE 6

**IMGs by gender and self-designated specialty, 2007\***



Physician Characteristics and Distribution in the U.S., American Medical Association, 2009



TABLE 7

**Percentages of IMGs in highest IMG self-designated specialties, ranked by size, 2007**

Specialty	Total IMG (%)		Rank	
	1980	2007	1980	2007
Internal medicine	13.4%	24.2%	1	1
General/Family medicine	9.4%	9.5%	2	2
Pediatrics	6.8%	8.5%	5	3
Psychiatry	7.0%	5.4%	3	4
Anesthesiology	6.0%	4.8%	6	5
Obstetrics/gynecology	5.4%	3.1%	7	6
General surgery	6.9%	3.0%	4	7
Cardiovascular disease	2.3%	2.8%	9	8
Pathology	4.0%	2.6%	8	9

*Physician Characteristics and Distribution in the U.S., American Medical Association, 2009*

The presence of IMGs has been controversial on many levels. Questions have been raised about the quality of care IMGs deliver and their contributions to physician maldistribution and physician surplus. Approximately 75 percent of all physicians who train in the United States ultimately establish their practices here and, in this regard, they differ from physicians in earlier generations (Mullan, 1995). Some believe that this tendency of IMGs to permanently reside in the United States contributes to a physician surplus, and consequently, have called for limiting IMGs’ entry into graduate medical education (GME) and eventually to lower the number of IMGs among practicing physicians (Education & Report, 1998).

Additionally, some doubt the quality of IMGs’ medical education and their capacity to function as physicians in the United States (Torrey, 1973). Others believe that IMGs, by seeking training in certain specialties, worsen the problem of physician maldistribution in the United States (Mullan, 1995). Finally, there is the issue of brain drain—impoverished nations losing their precious, educated human talent to the West. This is a topic that has been extensively commented upon in the recent professional literature (Mullan, 2005).

Other researchers counter these arguments by stating that IMGs perform a unique safety-net function by caring for the uninsured and the indigent populations in inner city and rural areas, in contrast to U.S. medical graduates (USMGs) (Mick, 2000) (Baers, 1998). Similarly, Mick contends that the allegation of inferior performance by IMGs is questionable (Mick, 1997).

## Historical context of medical education and migration

The history of IMGs in the United States is closely intertwined with the evolution of the country's medical education, and in the following pages, the major themes in GME will be discussed to provide an understanding of IMGs' entry and continued presence in the U.S. physician work force. This historical context is critical to appreciating and understanding the issues faced by IMGs today. GME in the United States evolved from being a loosely structured experience to a highly regulated and closely monitored system of graduate education of physicians, where even the number of hours they sleep is under scrutiny. IMGs leave behind their own disparate systems and must confront this orderly clinical teaching enterprise of GME, which is vastly different from their own. (The review of the history of GME is obtained primarily from Kenneth Ludmerer's landmark publications, *Learning To Heal* and *Time to Heal*.)

In mid-19th century, America was ravaged by infectious diseases, and medications were not available, with the exception of chloroform and ether for anesthesia, and quinine to treat malaria. Amputation was the standard treatment for injured limbs, and the poor quality of surgery is reflected in an 87 percent mortality rate of all amputations conducted during the Civil War. In contrast, there was only a 3 percent mortality rate for this procedure in World War II. Elementary techniques of the physical exam, such as measuring temperature, percussing the chest or using stethoscopes or ophthalmoscopes were done by very few physicians. In 1800, only three medical schools existed: the University of Pennsylvania, Harvard Medical School, and King's College (now Columbia University). Instruction at medical schools consisted of two four-month terms of lectures during the winter season, with the second term identical to the first. There were no entrance requirements, nor were there any examinations or grades. Diplomas could be bought, so much so it was stated that "an American physician or surgeon may be, and often is, a coarse and uncultured person, devoid of intellectual interests outside of his calling, and quite unable to either speak or write his mother tongue with accuracy" (Ludmerer, 1996).

Against this backdrop, American physicians' exposure to two foreign medical systems, Germany and France, was critical in lifting American medicine out of the morass it was in and setting it on the path to excellence. In the early 1800s, France was the favorite destination for American physicians who were eager to work alongside such luminaries as Louis Pasteur, Claude Bernard and Xavier Bichat. The phrase *peu lire, beaucoup voir, beaucoup faire*, "read little, see much, do much," embodied the principle of education in France (Baron, 2005). French medicine emphasized the importance of keen observation of clinical phenomena and letting facts speak for themselves and eschewed grand theories. It also pioneered the study of the natural history of disease and of therapeutics by the use of numerical or statistical methods. These influ-

ences of French medicine acted as an antidote to "outlandish theories and speculative abuses" that existed in American medicine. American physicians were greatly influenced by the French methods in that they practiced observation and distrusted experimental research and laboratory medicine.

By the middle of the 19th century, however, French medicine, due to its lack of research basis and its disdain for biological sciences, caused its own downfall from its preeminent position and consequently lost its allure for American students. Instead, Americans turned to Germany, which had become the center of European medicine. They were attracted by *Lehrfreiheit*, or "freedom of teaching," and *Lernfreiheit*, "freedom of learning"—the twin principles of German education. In addition, some of the features of German education, such as full-time salaried professors, division of education into undergraduate and postgraduate domains, creation of specialties and subspecialties, and an emphasis on laboratory science (all too common in the U.S. now, but novelties at the time) also attracted Americans. All these developments set the stage for the evolution of academic medicine around the activities of the medical school located in the university. These students returned to the United States to practice their new skills and, in this regard, were different from the IMG physicians of the 21st century, who come to the United States and generally stay here.

Despite these positive developments, there were still many problems with the system due to lack of uniform standards and requirements. Medical education was a lucrative business due to proliferation of proprietary schools, but several issues still needed to be resolved: a need for uniform standards, the enforcement of uniform admission criteria, establishing the importance of research, and creating an affiliation with a university for all medical schools. Ludmerer, writing in 1985, describes medical education in the United States, saying, "A century ago, being a medical student in America was easy. No one worried about admission, for entrance requirements were lower than they were for a good high school. Instruction was superficial and brief. The terms only lasted for 18 weeks, and after the second term, the MD degree was automatically given, regardless of a student's academic performance. Teaching was by lecture alone, thus, students were spared the onerous chores of attending laboratories, clinics, and hospital wards ... students would often graduate without ever having touched a patient" (Ludmerer, 1996).

Against this backdrop, in 1908, the Carnegie Foundation appointed Abraham Flexner to study the American medical education system and suggest remedies. Flexner's report called for "medical schools to be university based, for faculty to be engaged in original research, and for students to participate in "active" learning through laboratory study and real clinical work" (Flexner, 1925). "Learning by doing"

was the mantra he espoused, stating that the purpose of modern medicine was not to teach its students a large body of facts but to help them develop critical thinking and a scientific approach to clinical problems. These recommendations would subsequently influence the development of American medicine, which would become “excellent and very expensive.” Medical students henceforth would be taught by full-time academics called professors, and medical schools would be supported by philanthropy. Teaching hospitals provided clinical resources to train medical students, and the university hospitals conducted advanced research. Proprietary medical schools were closed, and by mid-1940s the public became aware of the major issues confronting medical education. The federal government’s financial support for GME also became a reality because of public support.

Historically, there have been three important tenets of American medicine: teaching, research and patient care. The relative importance given to these three areas varied over time. For example, the time between the World War I and World War II was seen as the era of teaching, in which many innovations were introduced into medical education. In the early 1900s, medical education focused almost exclusively on undergraduate medical education leading to the MD degree, following which the great majority of medical school graduates entered general practice. By World War I, the bulk of medical knowledge had grown enormously, and four years of education in medical school was felt to be inadequate to complete the curriculum. This necessitated a period of bedside patient care experience and the “internship” was born. In the beginning, internship positions were available only to a handful of graduates. The intern lived in dormitories provided by the hospitals and worked in a hospital for a year or two. However, they had limited clinical responsibilities and performed menial tasks like working in the hospital laboratories and transporting patients to different locations in the hospital. By the mid-1920s, the internship became available for all medical school graduates and was transformed into a true educational experience with a full schedule of conferences, rounds and lectures, as well as the opportunity to participate actively in patient management.

There were three types of internships. The most sought after was the “rotating” internship, in which interns rotated among all the clinical areas. The second was mostly associated with medical schools that offered “straight” internships in medicine or surgery. The third type was the “emphasis” internship, in which the intern spent half the time in one of the major disciplines and the other half in a subspecialty. Typically, internships lasted one year, though some were as long as three years. The internship provided a well-rounded clinical experience as a preparation for general medical practice. Residency training evolved mainly to develop academic scholars. In the beginning, unlike internship, which was required of all medical school graduates before they could receive a license to practice medicine, residency positions were reserved for the elite. After completion of internship, only one-third of graduates were selected to enter residency

programs. This system of residency was introduced in the United States and patterned after the system followed at the Johns Hopkins Hospital, which was based upon the system of “house assistants,” which originated in the medical clinics of German universities. The Hopkins residency was designed to be an academic experience for mature scholars.

The Hopkins residency system is similar to the British system of postgraduate training, and is also used in countries like India, where postgraduate training is reserved for the “*crème de la crème*” of medical school graduates who wanted to dedicate their career to research and teaching. Residents evaluated patients themselves, made their own decisions about diagnosis and therapy, and performed their own procedures and treatments. They were supervised by, and accountable to, attending physicians. The residency also emphasized scholarship and inquiry as much as clinical training; it was the graduate school for clinicians. Residency came to be recognized as the breeding ground for the next generation of clinical investigators and medical scholars.

Coinciding with the support received from the National Institute of Health (NIH), the era from World War II to 1965 was considered the research era. With the passage of Medicare and Medicaid in 1965, the clinical era began. However, the advent of managed care, which started in the late 1980s to correct deficiencies in the health care system, was stressful on the academic medical centers. Now in 2010, exactly 100 years after Flexner’s report, a major reform effort in health care delivery is again taking place in the United States with the goal of providing health care for all Americans. This development will also have far-reaching implications on medical education, as well as elevate the need to train more doctors to care for all the newly insured Americans.

The offshoot of Flexner’s report was a dramatic contraction in the number of medical schools, which led to concerns about physician shortages. In response, in the 1940s the Surgeon General’s Consultant Group on Medical Education issued a report called the Bane Report, which projected a shortage of 40,000 physicians by 1975 and recommended an increase in yearly graduates from 7,400 to 11,000. The report resulted in the Health Professional’s Act of 1963, which, contingent upon an increase in class sizes by five percent, provided existing schools federal matching funds for the construction of new educational facilities and marked the beginning of the federal government’s support of graduate medical education.

From 1960 to 1980, 40 additional medical schools were created. Simultaneously, there was an explosion in clinical volumes in teaching hospitals due to their reputation of possessing the latest technology and providing better patient care. GME also underwent significant changes during this period called the “democratization of the residency.” Before World War II, only a minority of doctors became specialists. However, due to low prestige and income for general practitioners, there was a great demand for residency training in specialties. The increasing demand for specialization was

caused by the rapid expansion of medical knowledge and growing procedural complexity of medical practice that resulted from massive research efforts under way in medicine. The clinical volumes also increased due to availability of private insurance. Medical schools' faculties supported expansion of residency training because having residents on the floors would provide them with time for research.

In addition, the shift from the pyramidal system of residency training to a parallel system, in which junior residents progressed up the ladder to become senior residents and graduating to become board eligible, made residency training a desirable goal for many medical students. While this was going on, many community hospitals that are unaffiliated with academic medical centers offered free-standing internships. As the demand for house officers increased, a shortage for interns developed. In 1958, there were 12,325 internship positions but only 6,861 graduates of American medical schools. Accordingly, many hospitals lacking an affiliation with a medical school began to recruit IMGs to their health staffs. The number of IMGs increased from 2,072 in 1950 to 9,457 in 1959. Since then, the affinity between IMGs and the teaching hospital was established. In addition, these early embraces by teaching hospitals lead to the overwhelmingly majority of IMGs becoming clinicians in contrast to educators and administrators.

As a result of the Bane Report, the number of allopathic and osteopathic medical schools rose from 93 to 140, an increase of 52 percent. The number of graduates increased from 7,000 to 16,950 (+142 percent) by 1981. Just as the United States began to increase the numbers of "home-grown" physicians, it began to look to other countries to help meet its health care work force needs, developing a legislative and regulatory infrastructure to evaluate and process IMGs.

While these far-reaching and fundamental changes were occurring in America, the countries that would later become significant sources of IMGs to the United States (India, Pakistan and the Philippines) were undergoing major struggles for independence from their colonial rulers. For these countries, one of the beneficial effects of their colonial past had been their facility with English language and the education systems of their former colonial powers. In medicine, this translated into the Western practices and education systems being inherited to form a medical education system that produced physicians in large number who were little-suited to practice their Western-influenced skills and knowledge in their native lands. There was considerable dissonance between the real world and the curriculum in the medical school for these young physicians. The physicians who came out of this system were greeted by a social reality that lacked the financial wherewithal to utilize their skills, and emigration became a way out for many aspiring doctors in these emerging post-colonial societies.

America welcomed these physicians to satisfy a growing demand. Thus, there was an initial synergy between the West and the donor countries. When these IMGs arrived in America, they quickly discovered they lacked the post-Flexnerian standards of scientific knowledge and skills and therefore they were relegated to the bottom of the two-tier system. Despite IMGs lacking some skills, they were essential for the clinical mission of hospitals, and therefore the health care system continued to allow IMGs to enter the United States. The following will describe the infrastructure that was elaborately constructed to facilitate the entry of IMGs into the system.

The Exchange Visitor Program has its origins in the United States Information and Educational Exchange Act of 1948, also known as the Smith-Mundt Act, and the Immigration and Nationality Act of 1952. Before the Smith-Mundt Act, exchange programs were conducted infrequently with only a few countries. With the goal of promoting better understanding of the United States among the peoples of the world and strengthening cooperative international relations, this legislation broadened the scope of exchange considerably to include a wider array of countries. In 1961, the Mutual and Cultural Exchange Act, commonly known as the Fulbright-Hays Act, expanded, strengthened, and better-defined exchange programs authorized in earlier legislation. The Fulbright-Hays Act authorized a wide range of cultural, technical and educational interchange activities. The Exchange Visitor Program derives its authority from this legislation. The Fulbright-Hays Act also established the J visa, the non-immigrant visa held by exchange visitors, which enables foreign visitors to visit the United States to participate in educational and cultural exchanges.

During the 1950s, the need for a formal program of evaluation of "foreign medical graduate" intensified due to the explosive growth in the demand for health care services, and a greater dependence on physicians-in-training to provide medical care. In 1954, the Cooperating Committee on Graduates of Foreign Medical Schools (CCGFMS) was formed by the Association of American Medical Colleges (AAMC), American Hospital Association (AHA), American Medical Association (AMA), and Federation of State Medical Boards (FSMB) as a first step toward filling this need. In exploring methodologies that would uniformly evaluate the qualifications of foreign medical graduates, CCGFMS recommended validating medical education credentials and creating examinations to evaluate skills in the medical sciences and English language proficiency.

## History of the ECFMG

In 1956, a private, non-profit organization, the Evaluation Service for Foreign Medical Graduates (ESFMG) was formed; it later changed its name to the Educational Council for Foreign Medical Graduates (ECFMG). With the help of the National Board of Medical Examiners (NBME) a medical science examination was developed. In March 1958, ECFMG administered its first medical science examination and test of written English knowledge in 17 centers to 298 international medical graduates. It was the function of another body, the Commission on Foreign Medical Graduates, to monitor the visa sponsorship of medical exchange visitors in the United States and to conduct research on IMGs. In 1965, the Immigration and Nationality Act (PL 89236) abolished national quotas and gave preference to individuals with occupations designated “in short supply” by the U.S. Department of Labor. Physicians were included on this list. Through the ECFMG, examinations administered in many countries allowed U.S. residency training programs to recruit physicians from all over the world. International graduates chose the specialty in which they wanted to obtain advanced training. Many programs paid for travel and accommodations. In 1974, the ECFMG and the Commission on Foreign Medical Graduates, which monitored issuance of visas, merged to become the Educational Commission for Foreign Medical Graduates.

The welcoming climate IMGs had previously enjoyed in the United States began changing in the mid-1970s. The Health Professions Education Assistance Act (HPEA) of 1976 (PL 94-484) declared an end to the physician shortage. IMGs were no longer given preferential visas that were meant for professions with shortages. Among other requirements, the HPEA mandated specific examination requirements for foreign

national physicians. In response, an examination that met the new requirements, the Visa Qualifying Exam (VQE), was introduced. The VQE was essentially a shorter version of the then current National Board of Medical Examiners (NBME) Part I & Part II examinations given to U.S. medical school students and graduates. The VQE was replaced by the Foreign Medical Graduate Examination in the Medical Sciences in 1984.

Beginning in 1989, IMGs were eligible to take the NBME Part I & Part II Examinations. Beginning in 1994, the United States Medical Licensing Examination (USMLE Steps 1, 2 and 3) was required of both IMGs and USMGs for licensure in the United States. USMLE Step 1, Step 2 Clinical Knowledge (CK) and Step 2 Clinical Skills (CS) are the current exams required for ECFMG certification, a requirement for IMGs to enter graduate medical training. Residency programs have different requirements regarding completion of USMLE exams for USMGs. In 1999, the computer-based testing for all steps of the USMLE was introduced. ECFMG serves as the registration entity for IMGs for Steps 1, 2 CK and 2 CS. Steps 1, 2 CK and 3 are delivered by a private company, Thomson Prometric, through its worldwide network. Steps 1 and 2 CK are administered in more than 50 countries, including the United States and Canada. Step 3 is administered in the United States and its territories only. Step 2 CS is administered at five centers in the United States. Between 1958 and 2005, 656,813 candidates started the ECFMG certification process and 292,287 (44.5 percent) eventually were awarded the ECFMG certificate. The number of candidates seeking certification has ebbed and flowed over the past 54 years reflecting the world situation, tightening of the immigration process, change of exam format and financial cycles.

TABLE 8

### Milestones in the history of ECFMG

1958	The first ECFMG medical knowledge examination, known as the American Medical Qualification (AMQ) Examination, is administered in 17 centers. The examination contains an English-language component, including an essay section.
1962	The AMQ is renamed the ECFMG Examination.
1969	The ECFMG assumes responsibility for administering the examinations, which had previously been administered by the NBME.
1972	The ECFMG reports examination results in a standard and scaled format similar to the NBME reporting format.
1974	A new ECFMG English test is introduced.
1977	The Visa Qualifying Examination (VQE) is developed by the NBME and administered by the ECFMG as equivalent to the NBME Part I and Part II Examinations. The VQE is approved by the Secretary of Health, Education and Welfare to satisfy PL 94-484.
1979	A passing score on the English examination is determined by the ECFMG Board of Trustees to be valid for only two years for the purpose of entering an accredited program of graduate medical education in the United States. Applicants who did not enter an accredited program within two years of passing the English test were required to pass a subsequent English test to revalidate their Standard ECFMG Certificate before entering the residency program.
1981	The Federation Licensing Examination (FLEX) is accepted as an alternative examination for ECFMG Certification.
1984	The Foreign Medical Graduate Examination in the Medical Sciences (FMGEMS), developed by the NBME, replaces the ECFMG Examination and the VQE.
1989	The ECFMG begins administering the NBME Part I and Part II Examinations as an alternative to FMGEMS.
1992	The United States Medical Licensing Examination (USMLE) Step 1 and Step 2 Examinations are introduced.

TABLE 8

**Milestones in the history of ECFMG (continued)**

1993	FMGEMS is administered for the last time; it is replaced by the USMLE Step 1 and Step 2 Examinations.
1998	The ECFMG Clinical Skills Assessment (CSA) is introduced.
1999	Last paper and pencil administration of USMLE Step 2 Clinical Knowledge (CK) takes place in March 1999. Computer-based testing begins. The last ECFMG English Test is administered; this test is then replaced by the Test of English as a Foreign Language (TOEFL).
2004	The last ECFMG CSA is administered; it is replaced by the USMLE Step 2 Clinical Skills (CS) Examination. Effective with the implementation of Step 2 CS in June 2004, all previously passed English tests used for ECFMG Certification were no longer subject to expiration for the purpose of entering a residency program, and TOEFL was eliminated as a requirement for ECFMG Certification

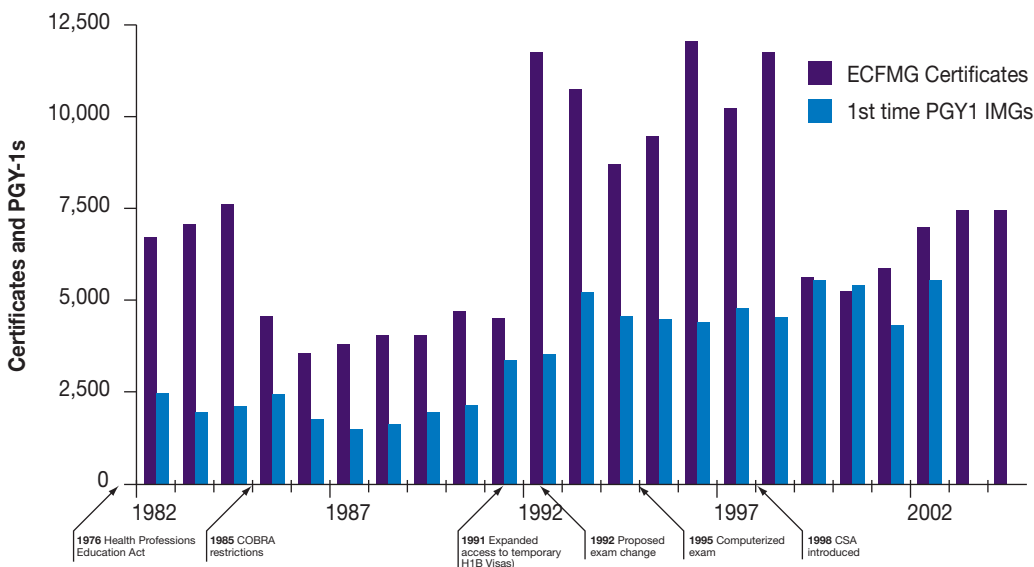
Hallock, Kostis; 50 years of ECFMG, *Academic Medicine*, 2006

Table 9 below demonstrates the resilience of IMGs in the work force by drawing their numbers against the backdrop of major events that influenced their ability to enter the United States. Whenever a change in policy concerning either the visa or the examination format is announced, there is an upsurge in the number of candidates taking the ECFMG examination. Once the anticipated change has occurred, the

numbers go down as the potential candidates adjust to the change and find loopholes in the system to enter the country. Over a period of a half-century, it has become abundantly clear that IMGs have become an integral part of American medicine and that these events exert only a temporary influence on their numbers.

TABLE 9

**First-time IMG PGY-1 residents and ECFMG certifications**



ECFMG and *JAMA*  
Cooper, 1995

## Controversies in physician work force recommendations

According to Mullan and others, the nation's physician work force will suffer from the following problems: too few generalists, too many specialists, too few minority physicians, poor geographic distribution and a growing imbalance in physician-population ratio (Mullan, 1995). According to the Institute of Medicine, in 1970 the United States had a total of 308,487 physicians, or a ratio of 151.4 physicians per 100,000 people. In 1992, the respective figures were 627,723 and 245.0, which represented an increase in the physician-to-population ratio of about 62 percent. Another important number involved active physicians in patient care (excluding those in training). In 1970, the figure was 220,657, with a physician-to-population ratio of 109.2 per 100,000; two decades later, the number was 461,405, giving a ratio of 180.1 physicians per 100,000 population (an increase in the ratio of 65 percent). The Graduate Medical Education National Advisory Committee concluded that the nation could have a physician surplus of 145,000 by the year 2000.

It is believed that the number of medical school graduates who enter residency programs each year, and the specialty choices they make, determine the future size and specialty size of the physician work force. Physicians are responsible for 70 to 90 percent of patients' personal health care expenditures, and if the number of physicians increases health care expenditure will also increase (Grumbach, 1991). It has been stated that health care expenditures consume about 16.2 percent of the gross national product ([www.hcfa.gov](http://www.hcfa.gov)). The cost containment concerns in the 1990s in the context of the growth of managed care, with its requirements for fewer specialists and diminishing physician remuneration, added greater urgency to an examination of the question of the size of the physician work force. As mentioned before, the number of IMGs in residency programs has increased dramatically in the 1990s against the backdrop of the above-described climate, and IMGs are seen to contribute to the increase in health care expenditures. As a result, many leaders of medicine and policymakers seem to believe that the best way to curb the physician surplus is to reduce residency positions and thereby reduce the numbers of IMGs.

### Council on Graduate Medical Education

In 1997, the Council on Graduate Medical Education (COGME), which is authorized by Congress to provide an ongoing assessment of physician workforce trends, training issues and financing policies, stated that the current supply of physicians was adequate; however, it found that there were too many specialists and too few generalists. It also found that there was an imbalance in physician distribution in rural and inner-city areas. COGME recommended a 50/50 ratio of generalists/specialists and a cap in GME positions that would equal 10 percent over the total number of USMGs graduating per year. It also recommended that the U.S. medical school enrollment not be increased.

COGME made specific GME financing recommendations and advocated for the creation of a National Physician Workforce Commission to determine the appropriate number and mix of residency slots. It also included ambulatory sites in GME reimbursement and recommended that an all-payer pool be created to support GME where all stakeholders contribute. Finally, it recommended creation of medical school consortia involving medical schools, teaching hospitals HMOs, and other teaching sites to finance and monitor GME.

The impact of the recommendation related to the 10 percent additional positions over the total number of USMGs for residency positions would have led to an immediate reduction in the number of IMGs entering GME by approximately 75 percent each year. The reduction in specialists would have also had an adverse impact on IMGs who train in large numbers in specialties. In addition, the creation of GME consortia under control of medical schools with authority to distribute GME funds would have shifted the power away from community hospitals, where many IMGs train, to academic medical centers, which do not have as many IMGs.

### Pew Health Professions Commission

In 1995, The Pew Health Professions Commission believed that the physician excess either already existed or soon would exist in the United States and that there was an imbalance between generalists and specialists. It recommended a 50-50 distribution of generalists and specialists and argued for a 5 percent additional residency slot above the number of USMGs. The Commission believed there were problems with physician maldistribution in inner cities and rural areas. It made specific GME financing recommendations which called for creation of a National Physician Workforce Commission to determine the number and the formulation of residency slots. It also recommended that an all-payer pool be created to fund GME. In addition, it called for reducing the number of both IMGs and USMGs in the U.S. health care work force. It called for tightening of immigration laws to insure that IMGs return home upon completion of training. Finally, it recommended that by year 2005, the U.S. should reduce the number of students entering medical schools by 20 to 25 percent. This reduction should come from closing medical schools and not by reducing class size.

The implications of this report would have had a more drastic affect on IMGs because it called for a more severe cut in IMGs in residency positions. In many other aspects, the implications are similar to those discussed with COGME.

### A consensus statement

In 1997, the AMA, Association of American Medical Colleges, American Osteopathic Association, National Medical Association, Association of Academic Health Centers and American Association of Colleges of Osteopathic Medicine endorsed a

consensus statement on physician work force. The recommendations are as follows:

- The number of entry-level positions in the country's GME system should be aligned more closely with the number of graduates of U.S. medical schools and this reduction should occur primarily through limits on federal funding of GME positions.
- GME opportunities should be provided for IMGs but their training should not be paid for by Medicare or by any national all-payer system that may be established in the future.
- Participating under J-1 exchange visitor program, IMGs are to return to their countries of origin.
- To address the needs of underserved communities, the federal government should provide incentives to medical schools and students to encourage them to choose careers as generalist physicians and to establish practices in these communities.
- There should be an all-payer GME fund with transitional payments to teaching hospitals that lose residents and creation of a national physician work force advisory body to monitor and assess the adequacy of size and composition of specialty physicians.

The implications of these recommendations were far-reaching since they had the backing of all the major organizations in GME in the United States. It advocated use of a GME financing mechanism as a way of controlling GME positions. While ostensibly advocating training IMGs in the system, it created obstacles to their participation by not providing financial support for their training.

### The Institute of Medicine

In 1995, the Institute of Medicine (IOM) appointed an expert committee to examine the question of the physician surplus in the United States. The committee made the following recommendations:

- The number of positions in U.S. medical schools is kept at the same level. It rejected any attempt to lower their numbers.
- No new medical schools should be opened, class sizes should not be increased in the United States. Deliberately decreasing opportunities for young people of this country but not for those from abroad is an unacceptable policy.
- Federal support for GME should be revamped; medical training should be separated from patient care.
- Place limitations on the training and entry into practice of IMGs.
- Offer replacement funding for IMG-dependent hospitals to permit them to serve the poor and the disadvantaged.

- Collect and disseminate information regarding work force issues.

The implications of this report explicitly recommends severing the connection between patient care and residency training. Also, this report advocates a "sons and daughters" policy by encouraging U.S. citizens to enter medical education and closing the doors to IMGs.

### Managed care

In 2000, Weiner estimated the effects of health reform on the U.S. physician work force requirement by extrapolating current patterns of staffing within managed care plans to the reshaped health care system. He assumed that 40 to 65 percent of Americans will be under managed care plans by then and that all citizens would have health coverage. Based on these assumptions, he forecast the following:

- There will be an overall surplus of about 165,000 patient care physicians.
- The requirement for and supply of primary care physicians will be in relative balance.
- The supply of specialists will outstrip the requirement by more than 60 percent.
- Weiner does not make any specific recommendations regarding physician work force (Weiner, 2000)

Whitcomb argues that there will be a physician surplus mainly contributed by IMGs and that mixed free market and regulatory approaches should be used to correct this physician imbalance. He believes that unless the entry of IMGs is curtailed, no purpose would be served by lowering the number of U.S. medical students. He recommends that the federal government create an advisory body that determines how many IMGs should be allowed into the system each year and distributes "residency cards" to qualified IMGs to participate in GME (Whitcomb, 1995).

The implications from Weiner and Whitcomb's recommendations would curtail any physician work force expansion.

### Reduce GME funding

Hospitals were incentivized financially to reduce residency positions by replacing residents with physician extenders. This last approach had never been tried before until Health Care Financing Administration (HCFA) launched the New York Demonstration Project (NYDP) in collaboration with Greater New York Hospital Association (Vladeck, 1997). Participation of hospitals was voluntary and the program began in two phases. Phase I started on July 1, 1997 and Phase II one year later. HCFA agreed to pay hospitals more than \$400 million as an incentive to significantly reduce the number of residents in their programs. The emphasis would be on increasing the proportion of primary care residents and reducing the number of specialists. In addition, the total



number of residents would have to be reduced over a five-year period in accordance with a formula agreed upon, and there were penalties for early withdrawals. The payments were intended to help the hospitals as they replaced residents with more expensive physician extenders.

When the program was announced, 42 hospitals joined with remarkable enthusiasm. However, it soon became clear to many hospitals in New York area that it was impossible to run clinical programs without residents. As a result, despite onerous penalties, many hospitals withdrew from the program. At the present, only a few of the hospitals that originally joined the program have remained in it. Even though it was not the stated objective, the outcome of the project involved an 11 percent reduction in the IMG component of the work force in two years and a slight increase in the number of USMGs.

The Balanced Budget Act of 1997 consisted of provisions for reduction in GME support by HCFA, similar to NYDP (Education, 2000). It was a nationwide project, and hospitals were given transitional funds for reducing their resident numbers. The act also reduced GME funding—especially the Indirect Medical Education Component (IME)—over a three-year period. For the purposes of calculating IME, it froze the number of residents at a 1996-level. This act also led to considerable financial difficulties for many hospitals and Congress had to pass amendments to restore funds to hospitals and make the reductions over a longer period of time

In 1999, the Medicare Payment Advisory Commission reevaluated Medicare's payment policies for GME and teaching hospitals ([www.medpac.org](http://www.medpac.org)), and recommended that Congress should try to influence work force policies through targeted programs rather than through a reduction of GME programs.

In May 2009, Senator Bill Nelson (D-FL) introduced the Resident Physician Shortage Reduction Act of 2009 in the U.S. Senate, and Rep. Joseph Crowley (D-NY) introduced identical legislation in the U.S. House of Representatives. This bill proposes to amend Title XVIII of the Social Security Act to increase the number of Medicare-supported residency positions across the United States by 15 percent, or approximately 15,000 positions. The bill also proposes changes in the distribution of currently available positions and encourages the creation of new positions in primary care and general surgery programs. At the time of publication this bill is still pending.

## Physician work force recommendation implications

The aforementioned organizations and analysts believed that there would be a physician surplus in the foreseeable future, that there was a shortage of primary care physicians and an excess of specialists, and that IMGs would contribute to that physician surplus, and as a result, their continued entry into the United States should be curtailed. The impact of periodic changes in the immigration laws and the ECFMG examination process was to lower the number of IMGs. The ECFMG examination process has continually evolved over the years, as detailed later in this paper. This has been done periodically since the inception of ECFMG. The most recent change involved introduction of a new examination, the Clinical Skills Assessment examination, which tests clinical skills through encounters with standardized patients. This examination was started in July 1998 and was administered only in Philadelphia. The location of the exam makes it difficult for IMGs because the U.S. consulates abroad do not readily issue visas for IMGs to enter the United States to take an examination. Additionally, the expense of a trip to the United States to take an examination without any guarantee of a residency position is beyond the financial reach of many IMGs. As a result, the number of applicants entering the USMLE process has diminished.

By the mid-2000s, it became apparent that the much-anticipated physician surplus had not materialized. In fact, work force analysts (led by Richard Cooper, MD) pointed out that by year 2020, the nation would experience a shortage of physicians. On the supply side, the following factors would contribute to fewer physicians: the baby boomers among physicians were retiring; the increasing number of female physicians, who work fewer number of hours than their male counterparts; and an increasing preference for an easier lifestyle by younger physicians. On the demand side, the following were factors: increasing life span, AIDS and other communicable diseases, and improved technology. All of these factors would increase the demand for health care. Consequently, in 2005 to 2006, AAMC, COGME and Health Resources and Services Administration (HRSA) called for increasing the output of U.S. medical schools, expressing concern that unless the Medicare caps on residency programs are lifted, there would not be an adequate number of physicians being trained. With an increase in the number of U.S. medical students and no increase in the number of residency positions, the number of IMGs going into GME positions would decrease.

## IMG contributions

### Gap filling or safety net role

Gap filling or safety net roles are unique roles that define IMGs' position in the U.S. health care delivery system. Gap filling or safety net roles are the roles that many IMGs fulfill in the physician work force because they provide health care to underserved populations by entering specialties and geographic areas that USMGs tend to avoid.

In a 1978 study, Politzer and others found that IMGs are distributed more evenly than USMGs and do not choose areas where USMGs are located (Politzer, 1978). Mick and others used distributional differences to compare IMGs and USMGs along these four parameters:

- Infant mortality rate
- Socioeconomic status
- Proportion non-white population
- Rural county designation

In the states that had a large number of IMGs, the IMGs were located in areas where the four parameters exist compared to areas that had higher percentages of USMGs where the four parameters did not exist or existed in smaller proportions. The magnitude of these differences was greater for IMGs than for USMGs, and there was a correlation between IMG disproportions and low physician-to-100,000 population ratios. Mick and Lee found that IMGs were frequently over-represented in counties where high infant mortality existed or where the physician-to-population ratio was well below average (Mick et al., 2000).

Furthermore, a report prepared for the Bureau of Health Professions on the distribution and professional activities of IMGs found very strong evidence for the gap filling role played by IMGs in American medicine (Mick et al., 1996). The researchers found that IMGs are concentrated in counties with the following characteristics:

- An infant mortality rate of 8.9/1,000 live births
- An average to below average socio-economic status score
- A per capita income of \$16,800
- A non-white population of greater than 12.5 percent
- A 65+ population greater than 14.9 percent
- A designation as a partially or fully health professions shortage
- A non-metropolitan population of less than 50,000
- A physician to population ratio of less than 120/100,000

More evidence of the vital role played by IMGs in the nation's health care system comes from a General Accounting Office Report that looked at the role of Exchange Visitor (EV) physicians in American medicine (GAO, 1996). The J-1 visa is a temporary non-immigrant visa and those IMGs who are in this category can apply to waive the requirement to return to their home countries by working in a health professions shortage area (HPSA). This visa waiver route has become a major source of physicians in rural and other HPSAs in the United States. Congress authorized the GAO to study this phenomenon and submit a report. In its report, the GAO made the following observations that support the contention of the gap filling function of IMGs in American medicine. The findings relevant to the physician work force debate are as follows:

- Governmental agencies requesting waivers for J-1 physicians have become a necessary source of providing physicians for undeserved areas. In 1994 to 1995, the number of waivers processed for these physicians equaled approximately one-third of the total identified need for physicians in the entire country and not in undeserved areas alone.
- The number of waivers from governmental agencies for physicians with J-1 visas to work in undeserved areas has risen from 70 in 1990 to more than 1,300 in 1995, and 64 percent of these physicians completing GME in 1995 chose to remain in the United States through the waiver system.
- Ninety percent of EV physicians complete their term of two-year employment for these agencies, and 28 percent of these physicians whose waivers were granted in 1990 to 1992 were still practicing in those areas in 1996.

The administrators of health care facilities in these HPSA areas strongly support the visa waiver system. Such administrators often turn to the visa waiver system as a last resort once they fail to recruit USMGs for vacant positions. One administrator stated that the elimination of the waiver system would be a "travesty" to health care in rural areas.

In specific areas of the country there is a very positive and significant concurrence between an IMG's native language, such as Spanish, and cultural familiarity, and that of the specific facility's patient population. The specialties seeking waivers were internal medicine, pediatrics, family medicine, obstetrics-gynecology, general practice and psychiatry, in that order. It is noteworthy that 28 percent of IMGs who seek these waivers continue to practice in these areas even after five years, whereas the retention rate for USMGs in the National Health Service Corps is around 11 percent.

Salsberg and others found that when comparing the post-residency career plans for IMGs and USMGs, IMGs holding

temporary visas are more likely than other IMGs to practice in health profession shortage areas (Salsberg, 2000). Baers and others found that IMGs in rural areas constitute a greater percentage of U.S. primary care physicians in rural areas with physician shortages than in rural areas without physician shortages (Baers, 1998). However, they also found that there was substantial interstate variation in the extent to which IMGs practice in rural underserved areas. Mick and others (Mick, 1999) found that IMGs serve in disproportionate numbers in cities, especially in the largest ones.

In another study about practice patterns of IMG and USMG psychiatrists, Blanco and others found that IMGs worked longer hours, worked more frequently in the public sector and treated a higher proportion of patients with psychotic disorders (Blanco, 1999). IMGs also received a higher percentage of their income from Medicaid and Medicare than USMGs, whereas the reverse ratio was true for self-payment by patients. The authors caution that policies that substantially decrease the availability of IMG psychiatrists may adversely affect the availability of psychiatrists to treat minorities and other underserved populations.

Mullan and others believe that IMGs locate their office-based practices similarly to USMGs with a slight IMG over-representation in the most densely populated counties and a slight under-representation in the non-metropolitan counties (Mullan, 1995). It is further stated by Mullan that IMGs fill residency and staff positions in smaller communities, but when they are free to relocate to another practice after completing their training, they select the same urban-orientated pattern of communities as their USMG counterparts. In another study, Politzer and others applied the Gini index of concentration (measure of inequality of [income](#) or [wealth](#)) to assess the geographic distribution of physicians and the contribution of IMGs to improving or exacerbating the distribution. The authors found that physician growth has not produced dividends in geographic distribution and that IMGs generally worsen these distributions (Politzer, 1998).

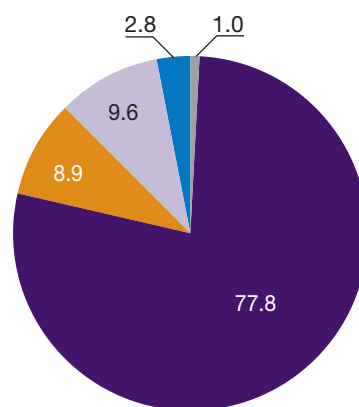
Whitcomb and others determined the impact of limiting IMGs participation in the GME in the delivery of hospital care to the poor (Whitcomb, 1995). They found only 77 out of 688 hospitals to be IMG-dependent. Hence, the authors state that the IMG participation in service delivery to the poor may be overstated. Salsberg and others found in a study conducted in New York, that few of USIMGs and IMGs who are naturalized citizens or permanent residents appear to go on to work in designated medically underserved areas and thus may not contribute to the gap filling phenomenon (Salsberg, 2000).

In a study looking at the characteristics of patients cared for by IMGs, Hing and Lin found that in 2005 to 2006, about one-quarter (24.6 percent) of all visits to office-based physicians were to IMGs. Hispanic or Latino and Asian or Pacific Islander patients made more visits to IMGs (24.9 percent) than to USMGs (12.4 percent). IMGs also saw a higher percentage of visits made by patients expecting to use Medicaid or State Children's Health

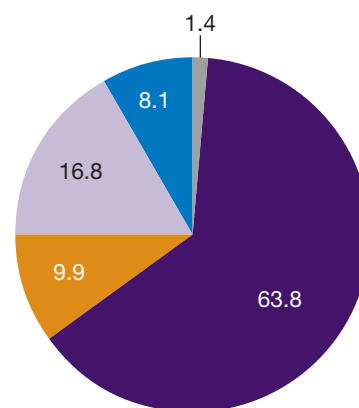
Insurance Program (SCHIP) as their primary payment source (17.6 percent) compared with USMGs (10.2 percent) (see Table 10). In 2005 to 2006, IMGs comprised 24.5 percent of all office-based physicians. IMGs were more likely to be of Asian or Pacific Islander descent (31.6 percent compared with 4.9 percent of USMGs) and Hispanic or Latino descent (6.7 percent compared with 1.5 percent of USMGs). IMGs were more likely to practice in primary care shortage areas outside of metropolitan statistical areas (67.8 percent) than USMGs (39.8 percent) (Hing, 2009).

TABLE 10

Percentage of office visits to USMGs and IMGs by patient race and ethnicity<sup>1</sup>



U.S. medical graduates



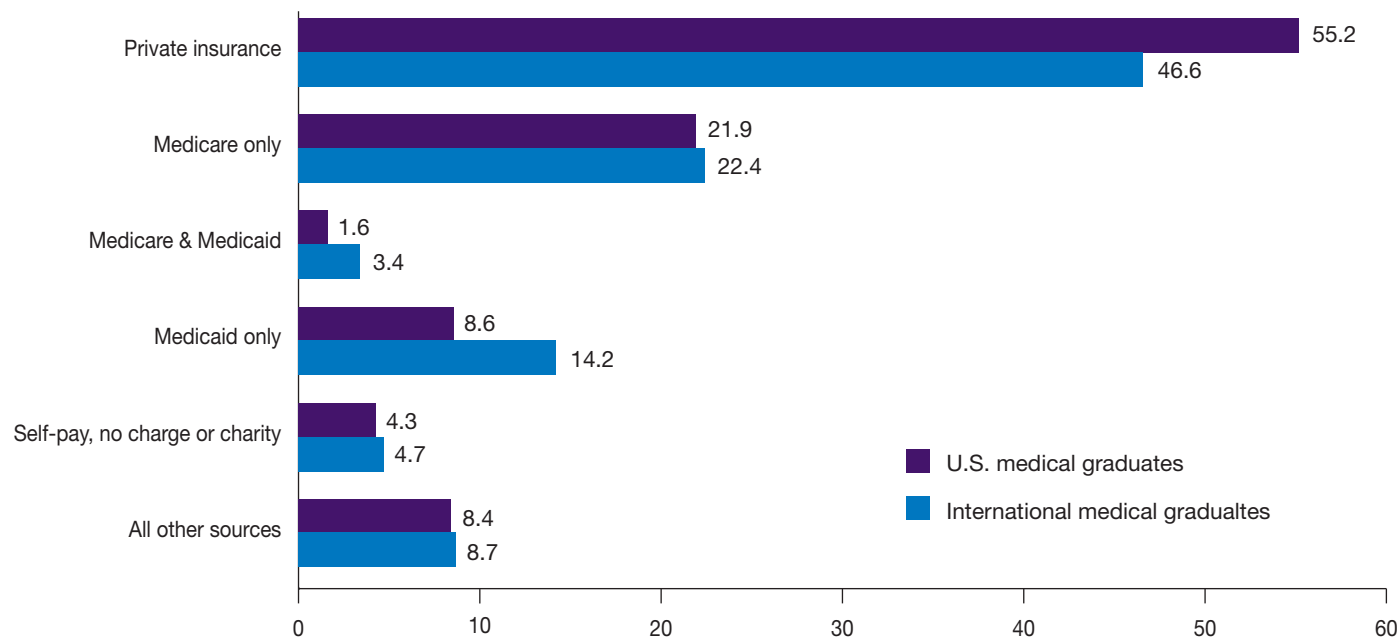
International medical graduates

- Non-Hispanic white
- Non-Hispanic black
- Asian or Pacific Islander
- Other race or ethnicity
- Hispanic or Latino

<sup>1</sup> Statistically significant difference between U.S. medical graduate and international medical graduate office visits. SOURCE: CDC/NCHS, National Ambulatory Medical Care Survey, 2005–2006.

TABLE 11

Percentage of office visits to USMGs and IMGs by patients' primary expected sources of payment<sup>1</sup>



<sup>1</sup> Statistically significant difference between U.S. medical graduate and international medical graduate office visits. SOURCE: CDC/NCHS, National Ambulatory Medical Care Survey, 2005–2006.

The argument that IMGs cause surplus suffers from several methodological issues. According to Mick, “The central problem in most of these studies is that they examined aggregate national or state level data only and ignored possible distributional differences of IMGs and USMGs within these boundaries” (Mick, 2000). These gap filling studies examine these work force shortfalls and have consistently shown that IMGs redress physician shortages in Health Professional Shortage Areas (HPSAs). The most thorough study conducted by the GAO, which lasted one year and involved site visits, interviews, and other thorough data collection methods, demonstrated a dire need for physicians in HPSAs—a need that IMGs are filling.

**IMGs in primary care**

An estimated 87 million people, one in every three Americans under the age of 65, were uninsured at some point in 2007 and 2008. One of the hardest-hit demographics in 2008 were part-time workers. In 2008, 1.1 million lost their health insurance, increasing the uninsured total for this demographic to 6.8 million. Compared to other industrialized nations, the United States has a poor track record regarding the delivery of primary health care services. More than 40 million people lack health insurance and almost 20 percent of the population lack a consistent provider of health care. The public health infrastructure remains weak and mental health care struggles for recognition and parity. Furthermore, the health care delivery system is highly fragmented when it needs to be seamlessly integrated.

As a nation, the United States continues to struggle with disparities in health and health care. Health care spending is at an all-time high with estimates as high as \$1.7 trillion spent annually, accelerating with a return to double-digit price escalation in health insurance premiums during a period of economic slump. The United States is in desperate need of a better functioning primary health care system, but our nation’s understanding of “primary care” is so rudimentary that in 1996 the IOM found it necessary to redefine its meaning ([www.annfam.org/cgi/content/full/2/suppl\\_1/s3-R30](http://www.annfam.org/cgi/content/full/2/suppl_1/s3-R30)). The IOM defined primary care as “not a discipline or specialty but a function as the essential foundation of a successful, sustainable health care system.”

Unfortunately, the rate of growth in the subspecialty physician pool has continued to far exceed the growth rate in family medicine and other primary care specialties. This disparity is reflected in the minimal growth of primary care physicians per 1,000 population compared with the growth experienced by non-primary-care specialists. The 2007 Survey of Hospital Physician Recruitment Trends showed family medicine as the first most heavily recruited specialty. The physician recruiting company reported an 18 percent increase in family medicine recruitment contracts, with 43 percent of all hospitals actively recruiting family doctors. During April 2006 to March 2007, family medicine and general internal medicine were the most requested physician assignments. Meanwhile, the interest expressed by medical students in family medicine has declined to near crisis proportions, as reflected in the declining resident match rates into family medicine programs.

The results of the 2007 resident match showed a decrease for the eighth consecutive year in the number of U.S. seniors from allopathic medical schools selecting primary care. In internal medicine, the number of U.S. seniors held steady, compared with last year, as did ob-gyn, while pediatrics saw a small upswing. According to Perry Pugno, MD, MPH, director of the American Academy of Family Physicians Medical Education Division, “It is of concern that since 1988 family medicine has reduced the positions offered by 511, while during that same period, U.S. medical school seniors selecting family medicine declined by 1,047. Currently, three out of five first-year residents in family medicine are IMGs.”

TABLE 12

**Residency positions in family medicine, 1994–2008**

	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999
Positions offered	2,636	2,603	2,711	2,761	2,864	2,920	2,962	3,074	3,183	3,244
Positions filled	1,370	2,299	2,307	2,275	2,256	2,227	2,342	2,346	2,684	2,683
% filled	90.6%	88.3%	85.0%	82.4%	78.8%	76.2%	79.1%	76.3%	81.2%	82.7%
Filled by U.S. seniors	1,156	1,096	1,123	1,117	1,185	1,226	1,399	1,503	1,817	2,015
% Filled by U.S. seniors	43.9%	42.1%	41.4%	40.5%	41.4%	42.0%	47.2%	49.0%	57.1%	62.0%

	1998	1997	1996	1995	1994
Positions offered	3,293	3,262	3,137	2,941	2,774
Positions filled	2,814	2,905	2,840	2,563	2,293
% filled	85.5%	89.1%	90.5%	87.1%	82.7%
Filled by U.S. seniors	2,179	2,340	2,276	2,081	1,850
% filled by U.S. seniors	66.2%	71.7%	72.6%	70.8%	66.7%

National Resident Matching Program, 2009

The result of this disturbing trend is a health care delivery system that is severely compromised in its ability to meet the growing primary care needs of our nation and is increasingly dependent on qualified IMGs to meet the accelerating demand for certified and skilled family physicians.

Many communities rely heavily on IMGs for its primary care needs. Civic leaders and work force analysts are concerned that visa restrictions and limited J-1 visa waivers may jeopardize the fragile health care delivery system. The shortage may lead to economic ripple effects because companies may not relocate in areas with limited access to medical care for their employees and existing businesses may lose qualified employees because they seek a better quality of life and improved medical care elsewhere.

IMGs are an indispensable part of a functional primary health care delivery system. The United States needs to make every effort to attract and retain qualified and skilled candidates for this challenging field of medicine. It is difficult to establish the total number of IMGs involved in delivering health care to the U.S. population. Several medical organizations indicate that they either do not tally the number of IMGs in their membership (e.g., the American Board of Anesthesiology), or do not record that information (e.g., the American Board of Allergy and Immunology). However, data

collected by certain medical specialties validate the claim that IMGs represent a significant portion of physicians providing care in various subspecialties.

Research by Salsberg published in the *Journal of American Medical Association (JAMA)* suggested that IMGs, particularly those with temporary visas, were more likely to train in primary care specialties, internal medicine subspecialties and psychiatry than USMGs (Salsberg et al., 2000). IMGs tend to further their skills by choosing specialization. According to Salsberg and others’ research, IMGs with temporary visas were more likely to subspecialize than were USMGs and 84 percent were planning to practice in designated health professional shortage areas.

The Bureau of Health Professions, Health Resources and Services Administration submitted a report to the U.S. Congress entitled, “The Critical Care Work force,” which indicated that the shortage of intensivists is getting worse due to the inability of qualified IMG intensivists to remain in the United States because of visa restrictions. This report further indicates that a large proportion of critical care fellows are IMGs.

Reportedly, there are 8,659 IMG diplomats certified by the American Board of Family Medicine, which represents 12.6

percent of the total membership. The American Board of Abdominal Surgery lists 3,170 IMGs as active members, for a total of 15.4 percent. The American Board of Colon and Rectal Surgery reports that 5.4 percent of its active diplomats are IMGs. IMGs are especially well represented in the field of psychiatry: 10,121, or 28 percent, of the membership of the American Psychiatric Association are IMGs. Of these, 7,151 were born outside the United States. In fact, according to a paper published in the *American Journal of Psychiatry* in March 1999, policies that substantially decrease the number of IMG psychiatrists may adversely affect the availability of psychiatrists to treat minorities and other underserved populations. A 2004 manuscript by Kostis and Ahmad, published in the *Journal of Cardiology*, indicated that among 156 active programs participating in cardiovascular disease match, 22 percent of positions were taken by IMGs (Kostis, 2004). According to the authors, the percentage of clinical faculty who are IMGs has been stable, and IMGs account for approximately 25 percent of the U.S. physician work force. It further stated that “IMGs adapt to and overcome challenges in many ways, including accepting inferior or lower paying positions early in their career” (Kostis, 2004).

Currently, there is growing concern among pediatric and internal medicine subspecialties because of an inability to recruit U.S. medical graduates into their programs. Although the numbers of IMGs are impressive, there are two unique areas where IMGs’ contributions to the delivery of health care are unsurpassed. IMGs are more willing than USIMGs or USMGs to practice in remote, rural areas through J-1 visa waiver requirements and IMGs often possess innate skills to better understand cross-cultural issues among their patients.

The diverse backgrounds of IMGs are especially valuable in caring for a multiethnic and increasingly diverse U.S. population. Not only do IMGs have diverse language capabilities and heightened sensitivity in caring for members of different ethnic groups, but they also are able to assist in developing sensitivity and understanding of cross-cultural issues among their non-IMG colleagues.

For some time, the openness, understanding and sensitivity of IMGs to other ethnic groups has been recognized in the delivery of psychiatric services. More recently, the recognition for understanding and sensitivity to ethnic and cultural issues has spread to other specialties, such as obstetrics-gynecology. One example is a program developed in Dearborn, Mich. by ACCESS, a cooperative venture between an Arab community center and the University of Michigan Health System, which serves the area’s large Middle Eastern population. As reported in the January 21, 2005 issue of *Psychiatric News*, these programs were established in order to provide “culturally competent, patient-centered services and programs to Middle-Eastern women.” IMGs are well placed not only to staff such programs, but also to interact with U.S. colleagues in delivering care to an increasingly diverse U.S. population.

## IMGs in academic medicine and research

The outlook for IMGs in the U.S. academic physician work force is affected by uncertainties in three major areas: the effects of policy adjustments arising from the Sept. 11, 2001 attacks, the current weak worldwide economy and developments affecting the U.S. physician work force. The eventual resolution of these issues and the related effects on U.S. academic medicine remain unclear, particularly because only a few of the relevant data series are available at this time.

Unless current retirement rates change dramatically, the science and engineering (S&E) work force, including academic physicians in the United States, will experience rapid growth in total retirements over the next two decades. More than half of those with S&E degrees are age 40 or older, and the 40 to 44 age group is nearly four times as large as the 60 to 64 age group. Without changes in degree output, retirement behavior or immigration, these figures imply that the U.S. S&E work force will continue to grow, but at a slower rate, and that the average age of the workforce will increase over the next two decades.

Even though a greater proportion of U.S. citizens enter higher education, the nation has lost the advantage it held for several decades as the country offering the most widespread access to higher education. Beginning in the late 1970s and accelerating in the 1990s, other countries built stronger post-secondary education systems. Many countries outside the United States now provide a college degree equivalent to the U.S. bachelor’s degree to at least one-third of their college-age cohort. There is evidence that many countries are trying to increase production of degrees in natural science and engineering. They appear to be succeeding in that goal well beyond what the United States has been able to achieve over the past 25 years.

Many in the scientific community have expressed concern, yet few have discussed the larger question: Just what is, or should be, the role of foreign scholars in U.S. science programs? In April 2005, the National Academy of Sciences released a study, “Policy Implications of International Graduate Students and Postdoctoral Scholars in the United States.” The key findings of this study are listed below:

- International students and scholars have advanced the U.S. S&E enterprise, as evidenced by numbers of patents, publications, Nobel prizes and other quantitative data.
- International graduate students and postdoctoral scholars are integral to the U.S. S&E enterprise. If the flow of these students and scholars were sharply reduced, research and academic work would suffer until an alternative source of talent could be found. There would be a fairly immediate effect in university graduate departments and laboratories and a later cumulative effect on hiring in universities, industry and government. There is no evidence that modest, gradual changes in the flow would have an adverse effect.

- Innovation is crucial to the success of the U.S. economy. To maintain excellence in S&E research, which fuels technological innovation, the United States must be able to recruit talented people. A substantial proportion of those people—students, postdoctoral scholars and researchers—come from other countries.

### 2009 Nobel Prize scientists

In 2009, four out of the six Nobel Prize winners in the science categories were U.S. citizens who were born outside of the United States. Elizabeth Blackburn (medicine category), a professor at the University of California, San Francisco, was born in Australia and moved to the United States in 1975. Charles Kao (physics category) was born in Shanghai and is a dual citizen of the United States and the United Kingdom. William Boyle (physics category) of Bell Laboratories was born in Nova Scotia. He is a dual citizen of Canada and the United States. Jack Szostak (medicine category) of Harvard Medical School was born in London, grew up in Canada and is now a U.S. citizen (O'Brien, 2009). Other examples include world leaders in their fields such as David Elder, Eric Kandel and Gunter Blobel, all of whom are past Nobel Prize Laureates.

According to statistics released in February 2009 from the National Science Foundation, “foreign-born science and engineering students in 2003 earned one-third of all Ph.D.s awarded in the U.S. Those who chose to pursue advanced study in the U.S. overwhelmingly choose to stay in the U.S. after earning their advanced degrees.”

### Trends among IMG faculty at U.S. medical schools: 1981–2000

From 1981 to 2000, the number of full-time U.S. medical school faculty reported to the Association of American Medical Colleges’ faculty roster increased by 86 percent. Similarly, the number of IMG faculty at U.S. medical schools doubled from 8,100 to 16,200 over the same period. Overall, IMG faculty as a proportion of U.S. medical school faculty has remained fairly constant: 17 percent in 1981 and 18 percent in 2000. The representation of IMGs among clinical faculty has been stable (16 percent to 17 percent over the past two decades). Meanwhile, IMG faculty as a proportion of basic science faculty gradually increased from 16 percent in 1981 to 21 percent in 2000. It is important to emphasize that

faculty with MD credentials as a percentage of the overall IMG faculty have declined from 74 percent in 1981 to 65 percent in 2000, while the proportion of such faculty with PhDs increased from 15 percent to 22 percent over the same period.

As were the physicists who fled Nazi Germany in the 1930s and later became crucial to the Manhattan Project, foreign-born scientists and artists are vital components of the U.S. scientific, cultural and humanitarian work force. “The sum total of their intellectual contributions is enormous,” says David Ward, president of the American Council on Education. Federal bodies such as the National Science Board also value the top-notch talent of foreign scientists, because this “brain gain” has helped ensure the United States’ postwar dominance in science and is crucial in order to maintain it.

The above data and sentiments indicate the need for academic physicians who are born and educated abroad. These physicians bring greater diversity in research backgrounds to United States; they also often assume positions of leadership in academic departments by leveraging their PhD credentials. One such physician is Abul Abbas, MD, professor and chair of the department of pathology at the University of California, San Francisco.

Finally, it should be noted that in addition to IMGs’ contribution to health care in the United States, a significant number of IMGs have turned their efforts and skills toward their home country and have initiated or become involved in medical missions serving their homeland.

### Immigration

In 2008, out of 26,783 IMGs, 4,366 (14.3 percent) were native U.S. citizens, 9.2 percent (2,705) were naturalized U.S. citizens, 20.2 percent (5,965) were permanent residents, 16.2 percent (4,777) were on H-1, H-1B, H-2 visas, 14.1 percent (4,152) J-1 and 0.3 percent (84) were immigrant refugees and another 14.1 percent (4,152) belonged to the miscellaneous category. In 1998, among the IMGs, the number of U.S. citizens (23 percent) and U.S. permanent residents (39 percent) in GME has increased while the number of IMGs who are on a temporary visas has decreased (33 percent). One can see that in 2008, the percentage of U.S. citizens and permanent residents decreased while the number of temporary visas remained stable (ACGME, 2009).

TABLE 13

**Citizenship/visa status of all resident physicians and IMGs on duty in ACGME-accredited and in combined specialty programs, December 1, 2008**

Citizenship/Visa status	Total	Resident physicians, No. (%) <sup>a</sup> IMGs <sup>b</sup>
Native U.S. citizen	69,740 (64.5)	4,366 (14.8)
Naturalized U.S. citizen	9,408 (8.7)	2,705 (9.2)
Permanent resident	8,620 (8.0)	5,965 (20.2)
B-1, B-2 temporary visitor	126 (0.1)	122 (0.4)
F-1 student	305 (0.3)	23 (<0.1)
H-1, H-1B, H-2, H-3 temporary worker	4,984 (4.6)	4,777 (16.2)
J-1, J-2 exchange visitor	4,280 (4.0)	4,152 (14.1)
Refugee/asylee/displaced person	89 (<0.1)	84 (0.3)
Other	534 (0.5)	437 (1.5)
Unknown citizenship/foreign born	6,009 (5.6)	4,152 (14.1)
Unknown citizenship/unknown birth country	4,081 (3.8)	2,705 (9.2)
<b>Total</b>	<b>108,176 (100.0)</b>	<b>29,488 (100.0)</b>

Accreditation Council for Graduate Medical Education (ACGME), 2009

a Includes resident physicians on duty as of December 1, 2008, reported through the 2008 National GME Census. A total of 181 programs (2.1 percent) did not provide updated information on residents by March 1, 2009. For these non-responding programs, resident physicians reported from the last received survey were moved into their next year in the program or graduated, and new residents were added from the 2008 National Resident Matching Program when available.

b Does not include graduates of Canadian medical schools.



## Graduate medical education

The following is an overview of relevant issues for IMGs seeking graduate medical education in the United States. This information is from the Web site of the Educational Commission for Foreign Medical Graduates ([www.ecfm.org](http://www.ecfm.org)), which contains other useful information. This information will help IMGs navigate the often-confusing initial few years of professional life in the United States.

To enter programs of graduate medical education in the United States accredited by the ACGME, international medical graduates must hold a standard ECFMG certificate without expired examination dates, if applicable. However, for IMGs, obtaining ECFMG certification is just one of the steps required to enter such programs. In many foreign countries, postgraduate medical education is offered mainly in medical schools and universities, and entrance to these courses is based on the candidate's performance as an undergraduate and in any qualifying exams for the postgraduate course. The selection process is under government control. However, in the United States, the federal or state government has very little direct control over GME. Autonomous professional bodies supported by professional organizations, hospital associations and specialty societies monitor medical education.

The ACGME is the body that accredits U.S. graduate medical education programs. The ACGME has established general requirements for all residencies and fellowships, as well as special requirements for each medical specialty and subspecialty. The ACGME accredits individual programs, not institutions. Institutions such as universities, Veterans Administration, local and state governments, the military, medical schools and religious organizations may sponsor graduate medical education. One institution may sponsor several GME programs in various specialties, each program with its own unique record with ACGME. Refer to the current edition of the AMA's *Graduate Medical Education Directory* for an official list of ACGME-accredited residency programs. Each program is approved for a certain number of residency positions by the ACGME based on the program's funding sources and its work force needs.

### Selecting residency programs

Before an IMG can begin the application process, he/she must select one or more medical specialties. Selecting a medical specialty is best done with the help of an advisor. It may be helpful to consult with physicians practicing in the medical specialties of interest. Also, IMGs must consider how professionally satisfying that specialty would be for them. For each specialty, it may be useful to research the overall number of positions available, the degree of competition typically experienced in obtaining a position, and the experience of prior international medical graduates, particularly graduates of your medical school, in obtaining residency

positions. Detailed information on the number of positions, by specialty, offered and filled through the National Resident Matching Program (NRMP) is available on the NRMP Web site ([www.nrmp.org](http://www.nrmp.org)).

After selecting a specialty or specialties, the IMG must decide to which programs within those specialties he or she will apply. There is no limit on the number of programs to which one can apply. Factors to consider include the location of individual programs, hospital affiliations, accreditation and the performance of their graduates.

### ECFMG certification

IMGs must hold a standard ECFMG certificate without expired examination dates, if applicable, before entering an ACGME-accredited residency program. IMGs must be ECFMG-certified before entering the program; however, they can apply to residency programs before being certified by ECFMG. If one applies to residency programs using the Electronic Residency Application Service (ERAS<sup>®</sup>), ECFMG will automatically transmit an ECFMG status report to the programs to which you apply. One also can participate in the NRMP prior to becoming ECFMG-certified, provided you have passed the exams required by the NRMP and the results of these exams are reported to the NRMP in time to participate. Prior to entering a program, the IMG should provide the hospital with a copy of his or her standard ECFMG certificate. Additionally, the hospital should contact ECFMG to confirm ECFMG certification status.

### Applying to graduate medical education programs

The ERAS was developed by the AAMC to transmit residency applications and supporting documents, such as transcripts, letters of recommendation and medical student performance evaluations to residency program directors over the Internet.

As the designated dean's office for all international medical students and graduates, ECFMG supports the ERAS application process for these applicants. ECFMG provides each applicant with a unique identification number, known as a token, which allows the applicant to access the AAMC's ERAS Web site to complete the ERAS application. The applicant also sends supporting documents to ECFMG for scanning and transmission. ECFMG transmits an ECFMG status report to all of the programs to which an international medical student/graduate applies and sends an updated status report to programs automatically when there is a change in the applicant's ECFMG certification status. Finally, ECFMG transmits the applicant's USMLE transcript, as requested by the applicant. All documents are transmitted to the ERAS post office, where they are accessible to the residency programs.

Most medical specialties participate in ERAS. For the list of specialties participating in ERAS 2009 (for residency

positions beginning in July 2009) visit the AAMC ERAS Web site ([www.aamc.org/students/eras/start.htm](http://www.aamc.org/students/eras/start.htm)). Additional specialties may participate in ERAS for residency positions beginning in July 2010. Information on participating specialties for ERAS 2010 will be posted on the AAMC ERAS Web site, as it becomes available. If the applicant applies to programs in participating specialties, the applicant must submit residency applications using ERAS. If the applicant applies to programs that do not participate in ERAS, the applicant must contact the program directors for a paper (hardcopy) application materials and instructions. In order to participate in ERAS, one must have access to the Internet. For information on ERAS, visit the AAMC ERAS Web site. Additional information for international medical students/graduates using ERAS is available on the ERAS Support Services section of their Web site or from ECFMG, upon request.

All applicants for residency positions, regardless of the method of application, should contact the residency program directors for specific requirements and deadlines. Applicants should also register with the NRMP.

### National Resident Matching Program

The National Resident Matching Program (NRMP), also known as “the Match,” matches applicants with available positions in programs of graduate medical education. Applicants submit a list of residency programs in order of preference to the NRMP. The programs listed are those programs to which they have applied (via ERAS or traditional paper applications). Program directors also submit to the NRMP ranked lists of the applicants they prefer for positions in their programs. These lists are referred to as rank order lists. Once the NRMP has collected all of this information, applicants and available positions are matched by computer using a mathematical algorithm. The Match results are announced in March for programs that begin in July. Both applicants and program directors agree to accept the results of the Match.

Most program directors consider the interview to be a critical part of the selection process. When compiling their rank order lists, program directors usually rank only the applicants they have interviewed. There is no guarantee that the programs to which you have applied will interview you or include you on their rank order lists. If an applicant is ranking programs, there is no guarantee that the applicant will be matched to any of these programs.

An applicant cannot match to a program if the program did not rank the applicant. Applicants can include any or all of the programs to which they applied (via ERAS or traditional paper applications) on their rank order list, regardless of whether or not the applicant interviewed with the programs; however, it is very unlikely that a program will rank an applicant if they did not have an interview with the applicant. When applicants compile their rank order list, they should consider which programs offer residencies that meet their

expectations. Data from the NRMP for 1996 to 2008 indicate that an applicant’s chances of being matched may increase with the number of programs that the applicant ranks. However, since it is possible to match with any program that an applicant ranks, even if the program ranks low on the applicant’s list, the applicant should not include programs on their rank list that they are not willing to accept. Important note: The NRMP and ERAS are distinct, complementary programs. ERAS is a method of applying to residency programs. The NRMP is a method of matching applicants with positions in these programs. Registering for the NRMP is a different process from applying to residency programs through ERAS. If an IMG wishes to participate in both the NRMP and ERAS, he/she must register separately with each service. Applying to residency programs through ERAS does not enroll you in the Match.

Three days prior to release of the general Match results in March, applicants find out whether or not they have matched to a program, although they do not learn the specific program to which they have matched. The following day, program directors are notified whether all of their positions were filled in the Match. Also, on this day, the list of unfilled programs becomes available to unmatched NRMP registrants on the NRMP Web site. Applicants must be registered for the Match by February in order to have access to unfilled program information.

To participate in the Match, applicants need access to the Internet and an e-mail address. Applicants in the Match use the Internet to register, pay fees and submit their rank order lists to the NRMP. They also use the Internet to access information resulting from the Match, such as whether they have matched, where they have matched, and information on unfilled programs. IMGs must register for the Match on the NRMP Web site ([www.nrmp.org](http://www.nrmp.org)). Applicants must provide their USMLE and ECFMG Identification Number at the time of registration. Applicants can register for the Match and submit rank order lists to the NRMP prior to meeting the NRMP exam requirements described below.

Students/graduates of international medical schools must have passed all exams necessary for ECFMG certification (see [www.ecfmg.org](http://www.ecfmg.org) for examination requirements), and the results must be reported to the NRMP in time to participate in the Match. Students/graduates of international medical schools are not required to have satisfied the medical education credential requirements for ECFMG certification in order to participate in the Match. Beginning in September, the NRMP will contact ECFMG directly to confirm that applicants have passed the necessary exams. After the rank order list certification deadline, the NRMP will automatically withdraw applicants who have not passed the necessary examinations; however, applicants who are withdrawn still will have access to the list of unfilled programs that is made available during Match Week.

Important note: If the applicant has passed the exam(s) through other organizations that may be used for ECFMG certification, such as the NBME or the Federation of State Medical Boards, the applicant should provide this information to ECFMG well in advance of the NRMP rank order list certification deadline in February. ECFMG will not report such exam information to the NRMP for the purpose of confirming the applicant’s eligibility to participate in the Match until such exam information has been verified by ECFMG with the appropriate organization and accepted by ECFMG.

Applicants must register by the deadline with the NRMP ([www.nrmp.org](http://www.nrmp.org)) in order to be matched with a hospital residency programs according to the applicant’s and the program’s rank order lists. It is very important for IMGs to adhere to all the Match deadlines if they wish to participate.

Certain residency programs require applicants to apply directly through the ERAS. ECFMG serves as the “dean’s office” for IMGs. Each year approximately 31,000 applicants compete for about 24,000 available residency slots. The NRMP Web site has an “Applicant User Guide” which contains specific information for IMGs. IMGs must pass all exams required for certification by the ECFMG, and the results must be available by the rank order list deadline. IMGs may, however, apply for residency positions outside of the Match.

Generally, application materials consist of a curriculum vitae, a copy of the universal residency application form, a cover letter addressed to each residency program director, evidence of graduation from medical school, ECFMG certification and

letters of recommendation from U.S. physicians, along with a one-page personal statement detailing the unique qualifications of the applicant.

While U.S. medical graduates apply to five to 10 programs, IMGs should submit applications to a minimum of 25 programs to have the best chance of being matched to a residency program. The more applications IMGs send out, the better their chances are for receiving requests for interviews and thus being accepted into residency programs. Applications should be sent in as early as possible, preferably September or mid-October at the latest. Upon review of the applications, residency program directors invite those applicants in whom they are interested to interview. Approximately 14 percent of applicants are granted an interview and only 8 percent of the entire applicant pool will be hired by any given hospital. Therefore, it is imperative that applicants make themselves stand out in their applications. Once invited to interview, an applicant needs to prepare in order to make the best possible impression. The interview is a critical part of the residency application process.

Tables 14 and 15 summarize the trends in the Match. The first table depicts the trend from 1982 to 2009 on the percent matched by demographic. As you can see, USMGs’ numbers remain steady and close to 100 percent. USIMGs have matched a little better than foreign national IMGs with some exceptions.

The next table (Table 15) shows the number of IMG physicians who matched into first-year residency positions by specialty from 2005 to 2009.

TABLE 14  
Percent matched, 1982–2009

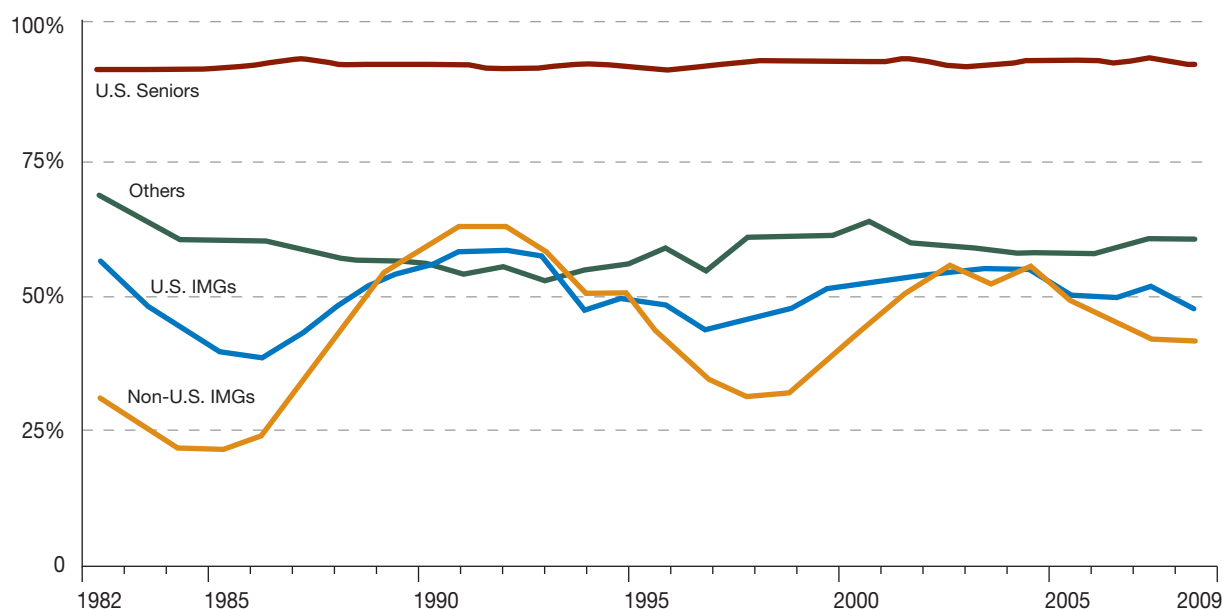


TABLE 15

**Foreign-trained physicians matched to PGY-1 positions by specialty, 2005–2009**

Specialty	2009		2008		2007		2006		2005	
	No.	%	No.	%	No.	%	No.	%	No.	%
Anesthesiology	54	1.1	63	1.4	56	1.2	52	1.2	68	1.6
Dermatology	0	0	2	0	1	0	2	0	0	0
Emergency Medicine	90	1.9	75	1.6	81	1.8	74	1.7	45	1.1
Emergency Med/Family Med	1	0	0	0	0	0	0	0	0	0
Family Medicine	902	19.1	891	19.2	873	19.3	888	20.3	838	19.8
Internal Medicine (Categorical)	1,805	38.2	1,720	37	1,695	37.4	1,647	37.6	1,646	38.9
Medicine-Dermatology	0	0	0	0	0	0	0	0	0	0
Medicine-Emergency Med	3	0.1	3	0.1	0	0	1	0	1	0
Medicine-Fam Med	0	0	0	0	1	0	0	0	0	0
Medicine-Medical Genetics	0	0	2	0	0	0	0	0	0	0
Medicine-Neurology	0	0	0	0	0	0	0	0	1	0
Medicine-Pediatrics	63	1.3	48	1	40	0.9	27	0.6	39	0.9
Medicine-Preliminary (PGY-1)	189	4	218	4.7	181	4	205	4.7	210	5
Medicine-Preventive Med	4	0.1	1	0	2	0	1	0	3	0.1
Medicine-Primary	69	1.5	75	1.6	69	1.5	97	2.2	90	2.1
Medicine-Psychiatry	6	0.1	5	0.1	4	0.1	6	0.1	4	0.1
Medical Genetics	0	0	0	0	0	0	0	0	0	0
Neurological Surgery	15	0.3	1	0	3	0.1	0	0	1	0
Neurology	61	1.3	48	1	60	1.3	10	0.2	13	0.3
Obstetrics-Gynecology	154	3.3	162	3.5	198	4.4	202	4.6	199	4.7
Ophthalmology	0	0	0	0	0	0	0	0	0	0
Orthopaedic Surgery	15	0.3	19	0.4	14	0.3	13	0.3	15	0.4
Otolaryngology	5	0.1	5	0.1	9	0.2	7	0.2	0	0
Pathology	109	2.3	104	2.2	97	2.1	109	2.5	84	2
Pediatrics (Categorical)	424	9	430	9.2	395	8.7	370	8.4	344	8.1
Pediatrics-Dermatology	0	0	0	0	0	0	0	0	0	0
Pediatrics-Emerg Med	1	0	0	0	0	0	0	0	0	0
Pediatrics-Medical Genetics	1	0	0	0	0	0	0	0	0	0
Pediatrics-PM & R	0	0	0	0	0	0	0	0	0	0
Pediatrics-Primary	31	0.7	33	0.7	33	0.7	26	0.6	33	0.8
Peds/Psych/Child Psych	2	0	2	0	2	0	1	0	1	0
Physical Medicine & Rehab	17	0.4	12	0.3	13	0.3	13	0.3	10	0.2
Plastic Surgery	4	0.1	4	0.1	1	0	1	0	3	0.1
Preventive Medicine	3	0.1	3	0.1	4	0.1	2	0	0	0
Psychiatry (Categorical)	255	5.4	291	6.3	247	5.5	233	5.3	224	5.3
Psychiatry-Family Medicine	2	0	0	0	1	0	0	0	0	0
Psychiatry-Neurology	0	0	0	0	0	0	0	0	0	0
Radiation Oncology	0	0	1	0	0	0	0	0	0	0
Radiology-Diagnostic	4	0.1	8	0.2	7	0.2	9	0.2	5	0.1
Surgery (Categorical)	126	2.7	104	2.2	130	2.9	99	2.3	112	2.6
Surgery-Preliminary (PGY-1)	242	5.1	259	5.6	259	5.7	238	5.4	202	4.8
Surgery-Plastic Surgery	0	0	0	0	0	0	0	0	0	0
Thoracic Surgery	0	0	0	0	0	0	0	0	0	0
Transitional (PGY-1)	70	1.5	58	1.2	51	1.1	48	1.1	38	0.9
Urology	0	0	0	0	0	0	1	0	1	0
Vascular Surgery	4	0.1	2	0	0	0	0	0	0	0
<b>TOTAL - PGY-1</b>	<b>4,731</b>	<b>100</b>	<b>4,649</b>	<b>100</b>	<b>4,527</b>	<b>100</b>	<b>4,382</b>	<b>100</b>	<b>4,230</b>	<b>100</b>

Table 16 below provides a racial and ethnic date breakdown of all residents based on their medical school (USMG, IMG and U.S. osteopathic). The ethnicity of IMGs has varied over the years. The majority of IMGs in the 1950s and the 1960s came to the United States from Europe and Latin America, whereas since the 1970s they have been from Asia. Since 1975, approximately 25 percent of all IMGs came from India. In 2008 to 2009, out of 29,489 (27.1 percent) IMG residents in GME, 7,569 (25.6 percent) were whites, 1,336 (4.53 percent) were black, 3,469 (21.9 percent) were Hispanics, 13,982 (47.4

percent) were Asians, and 123 (4.1 percent) were others. From 1998 to 1999, out of 5,137 (26.1 percent) IMG residents in GME, 1,498 (29.1 percent) were white, 232 (4.5 percent) were black, 401 (7.8 percent) were Hispanics, 1,748 (34 percent) were Asians, and 1,258 (24.5 percent) were others/unknown. In the past decade, Asian IMGs gained 13.4 percent and blacks remained the same, while Hispanics gained 14 percent and whites gained 3.5 percent. Asians have been increasing their percentage steadily, which leads to challenges in terms of acculturation and language issues.

TABLE 16

**Race and Hispanic ethnic origin of resident physicians on duty December 1, 2008, by type of medical school from which they graduated<sup>a</sup>**

Race and Hispanic ethnic origin <sup>b</sup>	No. (%)			
	U.S. and Canadian allopathic	U.S. osteopathic	Non-U.S.	Total
Black	4,744 (76.9)	92 (1.5)	1,336 (21.6)	6,172
American Indian/Alaskan Native	315 (96.9)	6 (1.8)	4 (1.2)	325
White	48,089 (82.7)	2,478 (4.3)	7,569 (13.0)	58,136
Asian	14,634 (49.8)	751 (2.6)	13,982 (47.6)	29,372
Native Hawaiian/Pacific Islander	163 (57.8)	13 (4.6)	106 (37.6)	282
Other/Unknown	3,500 (25.2)	3,897 (28.1)	6,492 (46.7)	13,889
Total	71,445 (66.0)	7,237 (6.7)	29,489 (27.3)	108,176
Hispanic origin	4,475 (55.3)	155 (1.9)	3,469 (42.8)	8,099
Non-Hispanic origin	66,970 (66.9)	7,082 (7.1)	26,025 (26.0)	100,077

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a Includes resident physicians on duty as of December 1, 2008, reported through the 2008 National GME Census. A total of 181 programs (2.1 percent) did not provide updated information on residents by March 1, 2009. For these non-responding programs, resident physicians reported from the last survey received, were moved into their next year in the program or graduated, and new residents were added from the 2008 National Resident Matching Program when available.

b Following the U.S. Census Bureau, the 2008 National GME Census asked for race and Hispanic ethnicity in two separate questions. A person of Hispanic ethnicity can be of any race.

**Obtaining a residency position in the United States**

IMGs must surmount many hurdles before becoming eligible to apply for residency training in the United States. ECFMG certification requires passing the USMLE Step 1, Step 2 CK and Step 2 CS. Additionally, the ECFMG must verify the graduate’s final medical diploma and medical school transcript with the medical school that issued these documents. The ECFMG verifies IMG medical school diplomas and transcripts with more than 1,500 medical schools worldwide and has developed unparalleled expertise in the area of credentialing IMGs.

Foreign national IMGs must obtain an appropriate visa (or immigration status or work authorization) in order to participate in U.S. residency training. There are various visa options available for physicians who seek entry into U.S. GME programs. Each visa classification carries unique regulatory requirements and guidelines. Currently the most common visas for residency training are the J-1 and H-1 B. In most cases foreign national IMGs will be required to coordinate their visa application with the training institution. There are fees and timelines associated with the visa application process.

Once an IMG becomes ECFMG certified, he or she then applies to enter a residency program in the United States. However, it is strongly recommended that IMGs participate in observership rotations in a clinical setting before applying to residency programs. Observerships provide IMGs with invaluable knowledge of U.S. medical clinical practice settings and with U.S. physicians who can serve as references.

The *Graduate Medical Education Directory*, known as the “Green Book,” provides information on more than 8,600 ACGME–accredited residency programs in the United States and is available for purchase from the AMA Bookstore ([www.amabookstore.com](http://www.amabookstore.com)). More detailed information on residency programs is available in the AMA Fellowship and Residency Electronic Interactive Database Access System (FREIDA) Online ([www.ama-assn.org/go/freida](http://www.ama-assn.org/go/freida)). FREIDA is an Internet database with information on all U.S. residency programs. Both the “Green Book” and FREIDA are good starting points for IMGs beginning the application process to residency programs.

## International medical schools

The International Medical Education Directory (IMED) is a Web-based database on world wide medical schools developed by the Foundation for Advancement of International Medical Education and Research (FAIMER). As of February 2007, IMED contains information on 2,074 medical schools worldwide. FAIMER was established in 2000 by the ECFMG. FAIMER's mission is to advance international medical education. Its activities include creating educational opportunities for health professions educators that support the exchange of educational expertise, acquisition of new methodologies in teaching and assessment, and pursuit of advanced degrees in health professions education. FAIMER's goals include the creation and enhancement of educational resources for those who teach physicians committed to improving and maintaining the health of the communities they serve. It also is committed to investigating and understanding the educational experiences and migration patterns of physicians and to determine their impact in population health.

The medical schools listed in IMED are recognized by the appropriate government agencies, usually the Ministry of Health, in the countries where the schools are located. FAIMER is not an accrediting agency. In many countries there are governmental or independent agencies that set standards and accredit medical schools.

Since April 2002, candidates for ECFMG certification must have graduated from a medical school listed in IMED and the candidate's year of graduation must be included in the medical school's IMED listing. ECFMG certification also requires that the IMG must have had at least four credit years in attendance at medical school. Prior to 2002, the ECFMG required that a medical school be listed in the World Directory of Medical Schools published by the World Health Organization (WHO). WHO does not accredit medical schools.

IMED provides the following information on international medical schools:

- Name of medical school
- University affiliations, if applicable
- Medical school address and contact information, including Web site address
- Former official names, if applicable
- Medical degree awarded
- Graduation years (calendar years school has been recognized)
- Year instruction commenced
- Language of instruction
- Duration of curriculum

- Entrance examination requirement
- Eligibility of foreign national students
- Total enrollment

FAIMER's Directory of Organizations that Recognize or Accredited Medical Schools is a developing resource of international organizations that recognize, authorize or certify medical schools and/or medical education programs. These organizations are often responsible for the establishment of national standards for medical education and the recognition of medical schools in their countries.

As of February 2007, there were 2,074 medical schools listed in the FAIMER database, of which 1,940 (94 percent) are currently in operation in 167 countries. The remaining 134 (6 percent) are no longer in operation due to closure or merger with another school. For example, the famous Guy's Hospital Medical School in London is listed as a medical school that is no longer in operation because it merged with another medical school and the newly created medical school subsequently merged with another medical school. IMED provides a full explanation.

International medical schools fall into two categories: (1) schools run by the government or (2) schools that are privately funded that admit only citizens. Admission is often through national competitive exams and with few openings available it is extremely difficult to gain admission. For example, in India, with a population of 1.1 billion there are 224 medical schools which provide 0.23 seats per 10,000 population, whereas the United States has 79 seats per 10,000 population.

In many countries, medical schools are patterned after the British system of education and testing and instruction is in English. Many countries have a long tradition of extremely well-developed medical education that predated the allopathic medical schools and are still educating physicians in their own discipline. An example would be the Ayurvedic system, the Unani system and the homeopathic system. It is not an exaggeration to say that the populace uses the various systems freely and interchangeably.

The second category of schools, the more recently conceived, caters to students from foreign countries and also admits a certain percentage of local students. Many of the schools in the Caribbean countries have patterned their curriculum after the system in the United States. The faculty are predominately from the United States and tend to be former faculty of U.S. medical schools. Clinical training is often in U.S. hospitals that are affiliated with the school. The students take the same board examinations as U.S. medical graduates.

## Observerships

An "observership" is a period of time spent observing clinical practice under the supervision of a physician preceptor. An observership program may be established by any state or

county medical association or interested group of physicians to assist IMGs who wish to observe clinical practice in a U.S. hospital setting. Observership programs should acculturate an IMGs into U.S. hospital settings, which will prepare them for their residency programs. Observerships should last between two to four weeks for each rotation (preceptor/specialty) and the observer can rotate among several preceptors if preceptors are available.

Observership programs are not intended to be organized for profit. Only actual costs (administrative costs, immunizations, etc.) may be itemized and paid for by the observer. Physician preceptors are expected to volunteer their time and efforts.

The following items are suggested learning objectives for an observership program:

- Observation of physician interactions with patients (history, examination, diagnosis, treatment, coding, writing prescriptions and entering information on the patient's chart, etc.)
- Observation of professional communication and interaction between the physician and all members of the health care delivery team and hospital administration
- Exposure to American colloquialisms (slang, euphemisms, etc.)
- Observation of the delivery of health care in a private practice, hospital or clinic setting
- Exposure to electronic medical records and observation of access and entry of data under supervision

Complete observerships guidelines and evaluation tools are available on the AMA-IMG Section Web site ([www.ama-assn.org/go/observership](http://www.ama-assn.org/go/observership)).

## Immigration and visas

Participation of IMGs in U.S. medicine involves a complex array of immigration laws, licensing and credentialing requirements. Foreign national IMGs enter the United States through either temporary or permanent visa categories. The temporary visas consist of the J-1 or exchange visitor (EV) visa or the H-1B visa. The foreign national IMGs can apply for an immigrant visa based on preference classification. The predominant preference classifications are either family sponsored or employer sponsored. Historically, the J-1 visa has been the dominant mode of temporary entry, while the family preference status has been the dominant mode of permanent entry for the foreign national IMGs.

The most common visa used to participate in U.S. GME programs has varied over the years. Currently, H-1B visas are preferred, whereas in the past, depending on the policies of the U.S. government, green cards and J-1 visas were in high demand. The J-1 visa is sponsored by the ECFMG. An IMG may apply for a J-1 visa after passing Step 1 and Step 2 of the USMLE, obtaining a valid ECFMG certificate at the time they begin training, holding a contract or an official letter of offer for a position in an accredited program of graduate medical education or training that is affiliated with a medical school, and providing a statement of need from the Ministry of Health of the country of last legal permanent residence. Upon completion of training, an IMG must either return to his or her home country for a period of two years or obtain a waiver of this obligation before being eligible to return to the U.S.

Under some circumstances, the two-year home residence requirement of the J-1 visa program can be waived. Rarely, the two-year residency requirement is waived if the applicant can demonstrate that he or she will be persecuted in his or her home country or if fulfillment of the residency requirement would bring significant hardship to the applicant's spouse and/or children who are U.S. citizens or permanent residents. More commonly, applicants find an Interested Governmental Agency to sponsor their waiver in exchange for agreeing to practice in an underserved area for at least three years

State departments of public health have become the primary source of J-1 visa waivers through the Conrad-30 Program, which allows sponsorship of up to 30 J-1 visa waivers per year. In 2005, these waivers accounted for more than 90 percent of J-1 visa waiver requests. Other agencies that sponsor J-1 visa waivers include the Appalachian Regional Commission, Delta Regional Authority, Department of Health and Human Services, and Department of Veterans Affairs. The U.S. Department of Agriculture previously sponsored waivers for physicians who agreed to serve in a rural Health Professions Shortage Areas, but terminated its involvement in sponsoring waivers in 2002 citing difficulty in addressing security considerations after the events of September 11, 2001.

Tables 17 through 19 depict the top countries of origin for J-1 visa holders, top states with J-1 visa holders and the top specialties with J-1 visa holders.

TABLE 17

**Total number of J-1 physicians sponsored in top countries of national origin\***

India	1,177
Canada	638
Pakistan	556
Lebanon	384
Philippines	380
Syria	228
Jordan	208
Peru	159
Thailand	140
Mexico	129

\* Sponsorship period July 1, 2007 through June 30, 2008

Educational Commission for Foreign Medical Graduates, 2009

TABLE 18

**Top states with J-1 physicians\***

New York	1,131
Michigan	410
Pennsylvania	401
Texas	396
Ohio	388
Massachusetts	352
Illinois	343
Minnesota	245
Connecticut	235
New Jersey	225

\* Sponsorship period July 1, 2007 through June 30, 2008

Educational Commission for Foreign Medical Graduates, 2009

TABLE 19

**Top specialties for J-1 physicians\***

Specialty	Count	% of total
Internal medicine	2,884	44.4%
Pediatrics	675	10.6%
Family medicine	503	7.5%
General surgery	486	7.4%
Psychiatry	369	5.7%
Neurology	236	3.7%
Obstetrics and gynecology	179	2.7%
Pathology	163	2.4%
Orthopaedic surgery	91	1.4%
Anesthesiology	88	1.3%

\* Sponsorship period July 1, 2007 through June 30, 2008

Educational Commission for Foreign Medical Graduates, 2009



## Temporary worker H-1B visa

The H-1B visa is for temporary workers in specialty occupations holding professional-level degrees, including graduates of foreign medical schools. Unlike the J-1 visa, the H-1B visa does not have a two-year home residence requirement and it allows a foreign national to remain in the United States for professional-level employment for up to six years. The current annual cap on the H-1B category is 65,000 with an additional 20,000 H-1B visas for foreign workers with a master's or higher-level degree from a U.S. academic institution. Obtaining an H-1B visa has become increasingly difficult as the number of applicants in this category has increased considerably. In addition, the number of visas granted to computer-related occupations is significantly higher than those granted to medical occupations. For example, in fiscal year 2005, 45.3 percent of H-1B visas were granted to computer-related occupations, while 6.2 percent were awarded to occupations in medicine and health.

## Immigrant visas

IMGs may qualify for an immigrant visa (also known as a “green card”), which permits a foreign citizen to remain permanently in the United States if they are an immediate relative of a U.S. citizen or lawful permanent resident, an employee of a sponsoring employer or prospective employer, or a “diversity immigrant” under a visa lottery program.

On a historical note, immigration laws also have been changed periodically to adapt to social, economic and political realities. As mentioned earlier, large numbers of foreign physicians entered the country as refugees and later as exchange visitors, consequent to the creation of EV visa status by the Congress in 1950. However, many physicians converted to permanent resident status and continued to live in the United States. There was criticism that the conversion of international physicians from exchange visitor to permanent resident status was depriving foreign nations of their trained professionals. Consequently, in 1955 a requirement was added to the EV visa that the physician return to his/her home country for two years before seeking permanent resident status.

In 1965, the Immigration Act was amended to give occupations in short supply, such as medicine, preference in granting permanent resident status. This act also did away with quotas based on national origins. The result of this law was to allow more physicians from the Asian continent to enter the United States as permanent residents. In 1978, this preferential treatment of physicians in the granting of immigrant visa was terminated. Consequent to the collapse of the Soviet Union, a large number of physicians from Eastern Europe were admitted to the United States as refugees.

## Significant dates in U.S. immigration policy affecting IMGs

- **1933–1948:** European IMGs immigrate as refugees in relatively small numbers.
- **1948:** Exchange visitor program lets IMGs train in the United States. Many stay.
- **1956:** AMA and others create IMG certification system—the ECFMG.
- **1965:** Easily obtainable visas in some specialties attract Third World IMGs.
- **1971:** IMGs get quicker job clearances for permanent residency status.
- **1976:** Congress raises immigration barriers against IMGs.
- **1980:** Federal study recommends IMG limits.
- **1985:** Federal legislation proposed to cut off GME funding for IMGs. Fails.
- **1990s:** Steep rise in incoming IMGs attributed to breakup of Soviet Union, changes in licensing exam and new immigration laws.
- **2001:** September 11 terrorist attacks.
- **2002:** President Bush signs Border Security and Visa Entry Reform Act.
- **2003:** Department of Homeland Security established, imposing stricter immigration policies, particularly in certain areas of the world.
- **2006:** Senate and House bills on reforming immigration policies spark national controversy and debate.
- **2006:** J-1 visa waiver legislation is reauthorized.
- **2007:** President Bush announces modifications to visa waiver program with an accelerated process for admissions to include central and eastern Europe and Republic of China.
- **2008:** Visa waiver program expanded to include Czech Republic, Estonia, Latvia, Lithuania, Hungary, Republic of Korea and Slovak Republic.
- **2008:** President Bush signs Conrad 30 (J-1 visa waiver) reauthorization.
- **2009:** President Obama releases a presidential memo for the Secretary of Homeland Security extending deferred enforced departure for Liberians.

## USIMGs

U.S. citizens who go abroad to medical school are mainly classified as USIMGs; foreign national IMGs, or FNIMGs, are based on the country of birth and citizenship. USIMGs are physicians either born in the United States or naturalized U.S. citizens who obtained their medical education in a foreign medical school (mostly in the Dominican Republic, Grenada, Mexico and Montserrat). This group of physicians consists largely of second-generation Americans. Some of these USIMGs sought education in the home country of their parents. These physicians include those who were not successful with applications to U.S. allopathic or osteopathic medical schools and others who preferred an international training experience. FNIMGs are physicians born and educated in foreign countries and are predominantly from Pakistan, the Philippines and India. In the context of the current physician shortage, it is important to understand the USIMG contingent of physicians.

The following observations are taken from a recent article in *Health Affairs*: “Of the total 28,931 USIMG applicants, 5,060 (17.8 percent) attended Ross University (Dominica), 4,719 (16.6 percent) attended St. George’s University (Grenada), 2,375 (8.3 percent) attended Universidad Autonomic de Guadalajara (Mexico), and 2,271 (8.0 percent) attended American University of the Caribbean (AUC) School of Medicine (Netherlands Antilles).” (Boulet, 2009)

For all USIMGs who submitted an initial application between 1992 and 1996, 66.2 percent achieved certification. In contrast, only 53.9 percent of non-USIMGs who applied during this time frame eventually achieved certification. For the more recent cohort (1997 to 2001 applicants), 70.9 percent of the USIMGs achieved certification, whereas only 52.6 percent of the non-USIMGs did so.

There was close to a four-fold increase in the number of USIMG applicants from 769 in 1992 to 2,772 in 2006. In 1999, following the introduction of the clinical skills assessment, there were 1,716 USIMG applications, representing 22.7 percent of the total applications in that year. Although the 2,772 USIMG applications in 2006 represented only 18.1 percent of the yearly applicant total, this corresponds to an increase in USIMG applications of nearly 62 percent in the previous seven years (1999–2006). USIMG certifications have increased steadily over the past ten years. In 1997, 907 ECFMG certificates were issued to U.S. citizens. By 2006, that number had more than doubled to 1,858. There were significant differences between USIMGs and non-USIMGs during the period studied. At the time of the initial application, USIMGs were younger than non-USIMGs (mean age at initial application: 28.8 years versus 29.2 years, respectively), less likely to be female (37.6 percent versus 39.4 percent, respectively), more apt to claim English as a native language (70.3 percent versus 9.8 percent, respectively), and more likely to have received medical school instruction in English (90.5 percent versus 66.3 percent, respectively).

Nearly 92 percent of the 10,840 USIMGs who achieved certification during 1992 to 2001 were found to be active in the 2005 AMA Physician Masterfile. In contrast, only 70.6 percent of the 73,074 non-USIMG applicants who achieved certification were listed as active in the 2005 AMA Physician Masterfile. Compared with non-USIMGs, practicing USIMGs were proportionately more likely to be male (66.2 percent versus 57.9 percent, respectively) and more likely to be involved in primary care activities (57.1 percent versus 50.6 percent, respectively). With respect to education, more than 66 percent (6,620) of the active USIMGs had attended medical school in the Caribbean, and more than 60 percent had attended medical schools in either Grenada, 2,348; Dominica, 2,156; or Netherlands Antilles, 1,456. The three universities in these countries accounted for 56 percent (5,569) of all active USIMG physicians in this cohort (AMA, 2006).

TABLE 20

**Citizenship status of IMGs with no prior U.S. graduate medical education in the first year of GME on duty, December 1, 2008<sup>a</sup>**

Specialty/subspecialty	U.S. citizen	U.S. permanent resident	Non-U.S. citizen	Unknown citizenship/Foreign-born	Unknown citizenship/Unknown birth country	Total
Anesthesiology	18	5	13	8	22	66
Emergency medicine	45	2	11	9	11	78
Family medicine	458	269	242	83	165	1,217
Internal medicine	552	468	1,081	284	1,005	3,390
Neurological surgery	1	1	4	0	0	6
Neurology	6	8	15	4	16	49
Obstetrics and gynecology	72	21	65	21	19	198
Orthopedic surgery	3	1	6	1	6	17
Otolaryngology	0	2	3	0	1	6
Pathology, anatomic and clinical	48	44	49	20	39	200
Pediatrics	141	71	187	75	155	629
Physical medicine and rehabilitation	10	0	3	0	1	14
Preventive medicine	0	2	0	0	0	2
Psychiatry	106	85	142	27	84	444
Radiology, diagnostic	2	0	0	0	0	2
Surgery, general	123	61	148	44	137	513
Vascular surgery, integrated <sup>b</sup>	1	0	0	0	0	1
Transitional year	15	14	14	5	27	75
Combined specialties: Internal medicine/emergency medicine	2	0	0	0	1	3
Internal medicine/medical genetics	0	0	1	0	0	1
Internal medicine/pediatrics	14	3	29	6	13	65
Internal medicine/preventive medicine	0	0	1	0	0	1
Internal medicine/psychiatry	0	1	3	0	2	6
Pediatrics/medical genetics	0	0	0	0	1	1
Pediatrics/physical medicine and rehabilitation	1	0	0	0	0	1
Pediatrics/psychiatry/child and adolescent psychiatry	2	0	0	0	0	2
<b>Total (%)</b>	<b>1,620 (23.2)</b>	<b>1,058 (15.1)</b>	<b>2,017 (28.9)</b>	<b>587 (8.4)</b>	<b>1,705 (24.4)</b>	<b>6,987</b>

a Includes only international medical graduate resident physicians entering U.S. GME for the first time; graduates of Canadian medical schools are not considered international medical graduates.

b Integrated programs differ from subspecialty programs in that they include core surgical education.

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## Dynamics of migration: Brain drain

Several reports have examined the social, economic, ethical and professional issues inherent in physician migration. According to Mullan, the United States, United Kingdom, Canada and Australia have been the beneficiaries of large-scale immigrations of physicians (Mullan, 2005). Meanwhile, developing nations such as India, Philippines, Pakistan and nations of Sub-Saharan Africa have been the donor countries of these physicians. Mullan believes that the poorer countries lose much more than professionals, they lose their health capabilities, even though there are some benefits to physician migration. The brain drain worsens the already depleted health care resources in poorer countries and widens the gap in health inequities worldwide. In Africa alone, around 23,000 health care professionals emigrate annually. In South Africa one-third to half of its graduates emigrate every year. Thirty-one percent of doctors in the United Kingdom were born abroad. The United Nations Conference on Trade and Development has estimated that each emigrating professional represents a loss of \$184,000 to Africa.

According to Hagopian, immigration theory informs us that “push factors” prompt professionals to leave poor countries in favor of settling in higher income countries. Regarding

the “push” factors, a number of foreign countries train many more physicians than their local economies can absorb, thus inadvertently encouraging their emigration (Hagopian, 2007). In addition, these physicians may have had their undergraduate training in medical education systems that reflect Western priorities of public health problems, Western normal lab values, etc., and have little relevance to local culture, health problems, and health care practices, thus making the expensive products of such systems ill-suited to practice their knowledge and skills in their native lands. Thus, migration becomes the only route to professional fulfillment. The motivations of these physicians to migrate, according to Viel, are a desire to study in a professional context regarded as more medically advanced, better pay, desire to escape political instability at home, inflation at home compared with the country of destination, possibility of improved social status in the new environment, fear of being sent to practice in remote areas in the home country and better opportunities for the migrant’s children (Viel, 1971). A study by Stevens and others found that the desire for medical specialization and the attraction of high medical salaries in the United States stand out as the most common reasons for migration (Stevens, et. al, 1978).

TABLE 21

Dynamics of migration: Brain drain

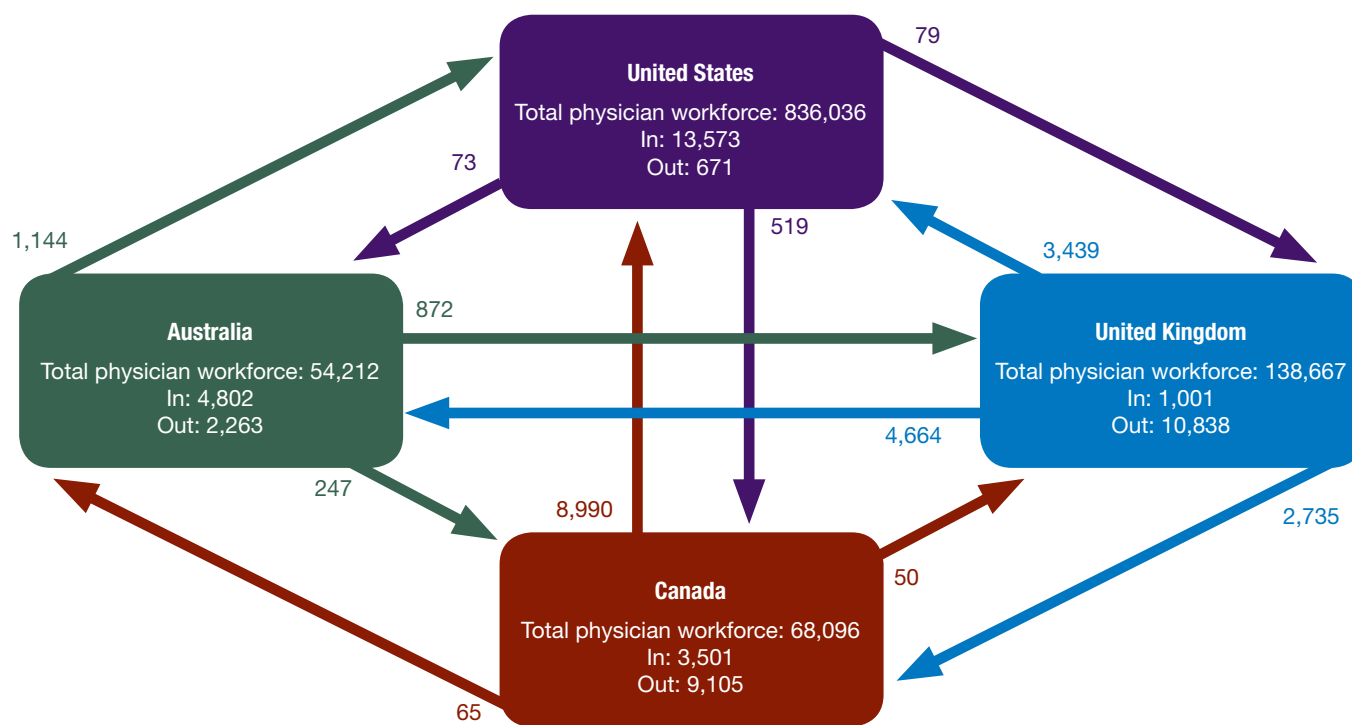


Figure 1. Cycling of physicians among the four recipient countries.

The rectangles list, in order, the number of physicians currently practicing in the country; the number practicing in the country but educated in one of the other three countries; and the number educated in the country but now practicing in one of the other three countries. The numbers of physicians who have moved from one to another of the four countries are shown on the arrows. The numbers are those from the most recent years for which data were available.

Mullan, 2005

Simultaneously, “pull factors” in wealthier countries systematically attract physicians. These include training opportunities, higher living standards, better practice conditions and more sophisticated research conditions. The “world systems framework theory” stresses the more permeable barriers between and among countries created by the standardized curriculum and English language used in world medical schools, the use of common research methods and shared scientific knowledge, the easy articulation of requirements of practice across countries, and the weakened nationalism that occurs as a result of professional training. Other theories characterize migration as a decision of family units, rather than individuals, emphasizing the insurance nature of establishing what are, in effect, “branch offices” in multiple locations.

Each country spends considerable resources to educate a physician with more than 15 to 20 years of education, and when they emigrate, the home country loses all the investments, and the citizens with the home country are deprived of the benefit of having the physician practice there. In other words, the home country is denied the health care it planned to have, and the recipient nations get a physician for free. In addition, even though the rich nations protest the injustice in the fleeing of talent from the poor nations, they indirectly encourage this physician migration through their policies. For example, in the United States, there are 6,000 more training positions than there are U.S. medical graduates to fill them in the first year of training. This difference attracts IMGs, and the U.S. government supports these positions through Medicare subsidy. In addition, the J-1 visa waiver system also encourages physician migration. As pointed out by Mullan, physicians move to countries with economic opportunities.

Similarly, the United Kingdom pursued an aggressive policy of attracting senior physicians from India and the Commonwealth in response to a shortage in senior consultants it faced, fully aware of the need for these doctors in these countries. For their part, the donor countries are either reluctant or tacitly encourage physician migration. For example, the Indian government believes that for the nation of one billion people, a few thousand physicians emigrating each year is not a major problem. The ostensible reasons for the donor countries are the remittances of valuable foreign exchange by these physicians as well as transfer of advanced knowledge and medical skills. The critics point out that the donor countries end up losing much more than a few physicians in this bargain. Mullan points out, for example, “The negative impact of the scarcity of physicians on health equity, health disparities and the fight against HIV infection and the AIDS” (Mullan, 2005).

Article XIII of the 1948 Universal Declaration of Human Rights asserts that “Everyone has the right to leave any country.” This particular right ensures the ability of the physician to move from one country to another.

The issue of brain drain is a very complex issue that defies easy categorization or solutions. The three major actors in this drama are: the donor countries, the recipient countries and the physicians themselves. The adoption of the “holier than thou attitude” is too simplistic and muddies the waters. A more sophisticated approach to this problem includes a cooperative effort between the donor and recipient countries, financial aid from the wealthy to the poor and reform in medical education in donor countries.

## Conclusion

In this position paper, the AMA-IMG Section Governing Council has examined numerous aspects of the presence of IMGs in the U.S. physician work force. The story of the IMG and the challenges IMGs have faced and continue to face have been outlined. While the presence of IMGs is beset with controversies and misconceptions, we feel we have presented data to clarify and address many of these biases and misconceptions.

Historically, IMGs have served patients in the United States in the highest professional manner and make up one-quarter (25.3 percent) of the physician work force, and more than one-quarter (27.8 percent) of resident physicians. IMGs serve in the neediest communities and are over-represented in primary care specialties.

The AMA-IMG Section Governing Council has presented data to illustrate the following:

- IMGs are more likely to serve in medically underserved areas.
- IMGs comprise more than 30 percent of the work force in primary care specialties.
- IMGs comprise close to 40 percent of the physician work force in inner-city areas in large metropolitan cities.
- IMGs comprise a significant portion of critical care physicians in this country.
- IMGs have participated in mainstream medical organizations and are increasingly being appointed/elected to leadership positions.
- IMGs are undoubtedly an integral part of health care delivery in the country.
- IMGs generally go through a unique set of challenges in getting a residency position, securing legal immigration and finding the right job.

In this position paper, the AMA-IMG Section Workforce Paper Committee has reviewed various aspects of IMG presence in the United States. IMGs are no longer a transitory phenomenon, but a permanent aspect of American medicine. There has been an increase in the volume of professional literature that addresses IMG issues. However, much more needs to be studied: quality of IMG educational and clinical performance, the impact of globalization on IMGs, various aspects of brain drain, and effective acculturation strategies. In addition to IMG faculty becoming culturally competent and effective, train-the-trainer programs need to be offered by more organizations.

It is not too often that one finds IMGs writing about IMG issues for the mainstream audience. We thank the AMA for giving us the opportunity and support to write this document. If this paper generates interest to further enhance research on various aspects of IMGs, it will immensely benefit patients and the field of medicine at large.

## Recommendations

The AMA-IMG Section Governing Council proposes the following recommendations:

### Work force

1. Unless the Medicare funded GME cap is lifted, due to increasing numbers of USMGs and osteopaths entering GME, there will be fewer positions left for IMGs and consequent negative effects on our society. It is imperative that the AMA lobby for the removal of GME caps and expand GME positions.

### Licensure parity

2. Advocate for evidence-based change in the passing scores of various USMLE exams rather than an arbitrary change in passing scores which could increase failure rates of IMGs (i.e., an arbitrary increase in clinical skills exam score increased IMG failure rate, but did not affect USMGs).
3. Collaborate with the Federation of State Medical Boards to develop guidelines for uniform licensure requirements for USMGs and IMGs alike to be applied by individual state medical boards.
4. Encourage all state licensing agencies to consider ECFMG certification as a standard primary source verification of an IMG's medical education.
5. Encourage all medical licensing boards to utilize the IMED database to verify medical school credentials and avoid creating arbitrary lists of approved and unapproved medical schools.
6. Establish state medical license portability across the United States as a top priority for all physicians. If medical licenses were portable, the physician work force could redistribute itself more efficiently, especially in times of disasters (e.g., Hurricane Katrina).

### Visa issues

7. Lobby relevant governmental agencies to streamline the visa issuance process to avoid unnecessary delays affecting the timely entry of IMGs in graduate medical education programs.
8. Congress should increase the number of positions of the J-1 visa waiver slots, (currently 30 per state) especially in states with the greatest projected shortages.

### Graduate medical education

9. Advocate for IMG and USMG residency parity. Residency programs must consider IMG applications equivalent to the USMG applications by using the same evaluation

criteria. It is important to have transparency and nondiscrimination in the selection process.

10. Increase the number of GME positions so that ECFMG-certified and Clinical Skills Assessment-qualified IMGs who are waiting for residency positions can enter the physician work force immediately.
11. Increase IMG representation on national and regional medical boards, regulatory bodies and organizational administrative positions responsible for regulation and policymaking. For IMG concerns to be heard, they must be voiced and addressed. Boards such as ECFMG, and most recently NRMP, which have included IMG representation, have benefited greatly. It is recommended that ECFMG consult with USMLE before making changes in its structure.
12. Continuously study challenges and issues pertinent to IMGs because these issues are evolving as our country's health system is changing. The federal government should fund studies through the National Institutes of Health, for example, to review issues and experiences encountered by IMGs.

### Observerships

13. Create more observerships or job shadowing opportunities for IMG physicians to work in clinical settings under the supervision of a licensed physician with privileges. This will enable IMGs to familiarize themselves with the American system of health care delivery and provide them with the experience they need to enter into a residency program. Also, these types of programs will keep the IMG in touch with clinical medicine and assist them in sharpening their communication skills.
14. Create observership positions in hospitals and use the unemployed qualified IMGs who are awaiting residency to help hospitals with data collection on performance improvement and safety projects that can improve the overall quality of hospital care.

### Global physician migration

We encourage more study and analysis on global physician migration before we can offer any recommendations or analysis on this topic. It is premature to make a determination on the effects of the global physician migration. The current debate regarding "brain drain" has been biased and inconclusive. The money and transfer of medical knowledge between donor and recipient countries has not been quantified nor studied sufficiently.

## IMGs in organized medicine

The AMA-IMG Section was established as an official section of the AMA in 1997. In 2004, the AMA Bylaws were amended to allow for the automatic enrollment of IMGs into the AMA-IMG Section upon joining the AMA. Today, the AMA-IMG Section has approximately 33,000 members and holds two IMG Section Congress meetings a year to develop AMA policy and directives. The section also lists more than 50 ethnic medical associations on its Web site ([www.ama-assn.org/go/imgs](http://www.ama-assn.org/go/imgs)) as a networking and cultural resource for its members and new immigrants to the United States.

### 2009–2010 AMA-IMG Section Governing Council

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Hugo Alvarez, MD, immediate past chair

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Padmini Ranasinghe, MD, alternate delegate

Nyapati Rao, MD, member-at-large

Sarala Rao, MD, member-at-large

Anagh Vora, MD, resident/fellow

### State medical societies with IMG sections

The following state and specialty IMG sections elect leadership and hold regular membership meetings. For more information on these sections and other state medical societies, visit the AMA-IMG Web site ([www.ama-assn.org/go/pub/category/1568.html](http://www.ama-assn.org/go/pub/category/1568.html)).

Florida Medical Association (*inactive*)

Illinois State Medical Society

Medical and Chirurgical Faculty of Maryland

Medical Association of Georgia

Massachusetts Medical Society

Michigan State Medical Society

Missouri State Medical Association

Medical Society of the State of New York

Nebraska Medical Association

Oklahoma State Medical Society

Pennsylvania Medical Society

Texas Medical Association

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### IMG committees:

American Psychiatric Association (Arlington, Va.)

American Academy of Family Physicians (Leawood, Kan.)

American College of Physicians

American Society of Internal Medicine



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