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Acknowledgements

From Nyapati Raghu Rao, MD, editor

I would like to thank the members of the work force committee, who are all experts in the field of IMG studies, immigration and work force, for their valuable contributions. Further, I extend my deepest gratitude to the AMA staff led by J. Mori Johnson and Carolyn Carter-Ellis for their extraordinary support of this project. I thank the governing council for giving me a free hand in writing and editing this document, and I am grateful to my colleague, Chella Kamarajan, for his insightful comments and extreme dedication to the timely completion of this project.

From the American Medical Association International Medical Graduates Section Governing Council

The American Medical Association 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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The history of this document began with Rajam Ramamurthy, MD, who served as chair of the American Medical Association International Medical Graduates (IMG) Governing Council from 2004 to 2005. During her tenure, the governing council addressed issues related to the IMGs’ role in the U.S. physician work force by creating a document entitled “IMGs in American medicine: A discussion paper.” This paper was updated each year by the governing council’s work force committee. In 2010, the discussion paper was thoroughly revised and expanded to include IMGs’ role in the U.S. health care system at large. The title was also changed to “International medical graduates in American medicine: Contemporary challenges and opportunities.”

Since the paper’s 2010 publication, much has changed for IMGs. Health care reform has become law in the United States. Similarly, U.S. physician work force reforms are gathering momentum without directly addressing IMG presence in American medicine. There is evidence that the United States may be losing its attraction as the favorite destination for IMGs the world over, which may be due to restrictive U.S. immigration policies, the exorbitant cost associated with the qualifying examination and the dwindling of graduate medical education opportunities. As a result of these developments, the future of IMGs in U.S. medicine has become uncertain.

Much has been written, mostly by American authors, about IMGs in American medicine. Scholarly contributions by IMGs on this subject are lacking. This document is the work of an IMG who was assisted in its development by several committee members who are also IMGs. The document begins with a description of the history of IMGs in the United States against the backdrop 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, it discusses the brain drain phenomenon and its ethics, as well asIMGs’ role in the organizational structure at the AMA. The document concludes with recommendations arising from the issues discussed.

As the editor of this document, I found the experience extremely stimulating and enriching. We hope you find this newest iteration both enlightening and informative.

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International medical graduates (IMGs) have been an integral part of American medicine since the late 1940s. They come from 1,078 medical schools located in 135 countries and speak 130 different languages.1

Their cultural and religious roots include Christianity, Catholicism, Confucianism, Hinduism, Islam, Judaism and the religions of Africa. This vast heterogeneity in their cultural and linguistic backgrounds does not deter them in their search for training in medical institutions of higher learning in the United States. The cultural engagement between IMGs from all across the world and their training faculties, their employers and, most importantly, their patients in the United States is an incredibly complex human drama. Journeying to the United States often forces IMGs to confront many challenges, make many sacrifices, encounter many disappointments and hopefully, celebrate many successes.

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 ground-breaking discoveries in biomedical research, introduced new surgical techniques, pioneered innovative teaching methods, and more.”2 It is true—IMGs have multiple accomplishments to their credit. Among all the advanced nations, the United States is the most welcoming country to IMGs. Nonetheless, the presence of IMGs in the United States has prompted many questions about the soundness and adequacy of their medical education, the quality of medical care they deliver, their ostensible contributions to increasing the physician supply and deepening the physician maldistribution and, finally, the ethical consequences of their migration. At the same time IMGs, while likely appreciative for the opportunity to receive world-class medical training, often feel perplexed, overwhelmed and discriminated against by the ambivalent reception they receive from their host.

From a historical perspective, it is important to note that IMG presence in the United States is just the latest episode in “medical migration,” which is an age-old phenomenon. From the U.S. 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. While nearly three-quarters of IMGs do not return to their native lands after completing their training, their reasons for not returning are many and varied, including greater opportunities for themselves and their children, improved quality of life, substantially higher salaries than in their native countries and avoidance of political instability in their homelands.

Understandably, there are considerable concerns over the brain drain phenomenon—that is, depletion of the intellectual resources of a nation by mass exodus of that nation’s professionals. At the same time, there are those on the other side of the issue who feel there is insufficient appreciation by brain drain critics of the fact that American values, quality control systems and American currency are sent back by émigré physicians to help improve 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 (yet intangible) aspect of the interaction between the United States and IMGs.

Another important development is the globalization of the U.S. health care system. The Accreditation Council for Graduate Medical Education (ACGME) has begun international accreditation of postgraduate training programs, with Singapore leading the way as the venue for the first ACGME-designed graduate medical education program.3 Many U.S. medical schools have established international campuses, and the Joint Commission for Accreditation has begun the difficult task of surveying foreign hospitals in various countries. The Educational Commission for Foreign Medical Graduates has announced the need for foreign medical schools to be accredited starting in 2023.4 As the United States opens up to the world, there are initial signs that IMGs are reconsidering their choice of the United States as their favored destination for graduate medical education. The fresh registrations for the United States Medical Licensing Examination, Step 1, are beginning to decline in source countries,5 while some well-settled IMGs in the United States are returning to their native countries as part of a reverse migration phenomenon that is, in part, helping to support medical tourism in developing nations. There is a likelihood of IMGs not being part of the U.S. physician work force at some point in the not-too-distant future.

It is clear that the IMG story is a very complex one, indeed. Examining the historical context of IMGs is

critical to appreciating and understanding the issues facing IMGs today. When looking at the history of IMGs in the United States, it is closely intertwined with the evolution of the country’s graduate medical education (GME). In the following pages, major themes in GME will be discussed to provide an understanding of IMGs’ role and contribution to the U.S. physician workforce. 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 must confront this orderly clinical teaching enterprise of GME, which is vastly different from their own disparate system. (The review of the history of GME is obtained primarily from Kenneth Ludmerer’s landmark publications, Learning to Heal and Time to Heal.)

**Early American medicine**

In the 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 neither 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.”

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 Barnard and Xavier Bichat. The phrase *peu lire, beaucoup voir, beaucoup faire*, “read little, see much, do much,” embodied the principle of education in France. 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 influences 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 United States 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 due to superior quality of medicine, greater opportunities for professional advancement, higher income as physicians, better opportunities for education of their children and more desirable living conditions.

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State of medical education

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." 9

Flexner Report and aftermath

Against this backdrop the Carnegie Foundation in 1908 appointed Abraham Flexner, a head master of a high school, 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.” 10 “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 the 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.

The evolution of American medicine: Three-legged stool of teaching, patient care and research

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 World War I and World War II was seen as the era of teaching, a time when 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, after 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.

Creation of modern GME

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 interns spent half their 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 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.

Hospital, which originated in the medical clinics of German universities and was based upon the system of “house assistants.” The Hopkins residency was designed to be an academic experience for mature scholars.

The Hopkins residency system was similar to the British system of postgraduate training and was also used in countries like India where postgraduate training was 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. Today, in 2012, more than 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.

Flexner’s impact on U.S. medical schools

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 Professionals Act of 1963, which, contingent upon a 5 percent increase in class sizes, 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 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 underway 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 graduated 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 of 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 led an overwhelming majority of IMGs to become 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 its number of home-grown physicians, it also 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.
IMGs: The work force dynamics

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 the 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 ill-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. Today, rulers of these donor countries tacitly encourage emigration of their talented physicians for multiple reasons, and there has been an outcry in the west against the ethics of wealthy nations taking advantage of more vulnerable, developing nations.

The presence of IMGs has ebbed and flowed during the past 70 years. These fluctuations have been influenced by major economic, immigration and social priorities of the United States. It has been noted by work force researcher Steven Mick that IMG presence usually diminishes in response to an ECFMG certification or immigration-related policy change aimed at restricting IMGs’ entry into the United States. Subsequently, as IMGs find a way around the new policy due to structural weakness in the economy and the vast health care system, their numbers tend to increase. While the 1950s and 1960s were marked by the migration of European and Latin American physicians, the 1970s and subsequent decades were marked by Asian physician dominance in the IMG work force. The turning point came when U.S. immigration priority was changed from family reunion to preference for high-skilled professionals. In addition, the advent of Medicare, which resulted in the expansion of health care coverage to seniors, the disabled and the poor, required employment of a large number of physicians. This opened the doors widely to the IMGs. On the other hand, in the 1980s and early 1990s, the influence of managed care resulted in the contraction of clinical services with fewer physicians needed to run those services.

Around this period, there were significant concerns that the United States had a physician surplus and that IMGs’ entry should be curtailed. This coincided with the failed Clintonian health care reform effort. Simultaneously, many professional organizations offered remedies to curtail physician surplus like the 110 percent solution, which addressed the work force surplus by capping the number of GME positions at 110 percent of the number of U.S. medical graduates. However, not much came out of these recommendations, and the number of IMGs continued to rise unabated in the 2000s. Even the introduction of the Clinical Skills Assessment (CSA) exam by ECFMG—to be held only in the United States—had only a temporary impact on the number of IMGs who entered the U.S. work force.

The tragedy of 9/11 and its aftermath did, however, adversely affect the climate for immigrants in general and IMGs as part of that population. Yet, the movement towards Obama’s health care act, which has impacted 37 million more Americans as well as 15 million more Medicare recipients due to the aging of baby-boomers, has increased the demand for physicians. (This massive expansion is similar to the expansion that occurred following the introduction of Medicare in 1965.)

The United States has responded to this demand by increasing its domestic output of physicians while taking an ambiguous approach to the presence of IMGs in American medicine. However, the increase in the number of undergraduate medical education (UME) positions is not matched in a correlative increase in the number of GME positions. The disconnect between UME and GME has resulted in the likelihood of IMGs being removed from GME positions due to a 1997 cap imposed on expanding the number of GME positions. Thus, the tool that was used to curtail the number of IMGs entering U.S. GME is now restricting any increase in Medicare financing of GME for U.S. graduates.

Parenthetically, one must mention that there has been a large number of IMGs who entered the United States legally but have not succeeded in obtaining GME positions, in spite of possessing all the requisite ECFMG certificates. The flow-chart demonstrates clearly various paths IMGs traverse to obtain residency positions, details of which can be found in the chapter on immigration in this publication. The plight of these individuals (20 percent per year) is becoming known across the IMG world. It is aided by the perception amongst IMGs in major source countries that the United States is not as welcoming as originally thought and that going to the United States can be a very frustrating exercise. Consequently, the number of IMGs in the United States is beginning to fall.
The field of GME underwent a major paradigm shift when the Accreditation Council for Graduate Medical Education (ACGME) moved from a structure and process-oriented accreditation system to one that is marked by outcomes called the “next accreditation system.” Similarly, the National Residency Matching Program (NRMP) changed its match system by requiring an All-In Policy, which may also have an impact on IMG migration. At this point, how all these developments will play out—whether the IMGs’ presence will vanish or have a resurgence—remains to be seen.
The profile of IMGs in 2011

• Performance on USMLE in 2010–2011:
  ◦ The foreign IMGs perform better than U.S. citizens on USMLE Step 1: 71 percent vs 66 percent
  ◦ USMLE Step 2 CK: 79 percent vs 71 percent
  ◦ USMLE Step 2 CS U.S. citizens perform better than foreign citizens: 83 percent vs 75 percent

• IMGs holding J-1 visas:
  ◦ Top five countries of origin: India, Canada, Pakistan, Lebanon, Philippines
  ◦ Top five states with J-1 visas: New York, Michigan, Texas, Massachusetts, Illinois
  ◦ Top five specialties with J-1 visas: Internal medicine, pediatrics, family medicine, general surgery and psychiatry

Exhibit 8: Top 10 nations of origin for J-1 physicians, 2010-2011 academic year

<table>
<thead>
<tr>
<th>Nation</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>India</td>
<td>2,023</td>
</tr>
<tr>
<td>Canada</td>
<td>902</td>
</tr>
<tr>
<td>Pakistan</td>
<td>511</td>
</tr>
<tr>
<td>Lebanon</td>
<td>392</td>
</tr>
<tr>
<td>Philippines</td>
<td>324</td>
</tr>
<tr>
<td>Jordan</td>
<td>274</td>
</tr>
<tr>
<td>Syria</td>
<td>241</td>
</tr>
<tr>
<td>Peru</td>
<td>172</td>
</tr>
<tr>
<td>Nepal</td>
<td>162</td>
</tr>
<tr>
<td>Thailand</td>
<td>157</td>
</tr>
</tbody>
</table>

Source: ECFMG

Exhibit 9: States with highest numbers of J-1 physicians, 2010-2011 academic year

<table>
<thead>
<tr>
<th>State</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>New York</td>
<td>1,227</td>
</tr>
<tr>
<td>Michigan</td>
<td>552</td>
</tr>
<tr>
<td>Texas</td>
<td>474</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>444</td>
</tr>
<tr>
<td>Illinois</td>
<td>440</td>
</tr>
<tr>
<td>Ohio</td>
<td>436</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>388</td>
</tr>
<tr>
<td>New Jersey</td>
<td>312</td>
</tr>
<tr>
<td>Florida</td>
<td>285</td>
</tr>
<tr>
<td>Maryland</td>
<td>265</td>
</tr>
</tbody>
</table>

Source: ECFMG

Exhibit 10: Specialties pursued by J-1 physicians, 2010-2011 academic year

<table>
<thead>
<tr>
<th>Specialty</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal medicine</td>
<td>3,603</td>
<td>45.8%</td>
</tr>
<tr>
<td>Pediatrics</td>
<td>861</td>
<td>11.0%</td>
</tr>
<tr>
<td>Family medicine</td>
<td>622</td>
<td>7.9%</td>
</tr>
<tr>
<td>General surgery</td>
<td>566</td>
<td>7.2%</td>
</tr>
<tr>
<td>Psychiatry</td>
<td>412</td>
<td>5.2%</td>
</tr>
<tr>
<td>Neurology</td>
<td>324</td>
<td>4.1%</td>
</tr>
<tr>
<td>Obstetrics and gynecology</td>
<td>151</td>
<td>1.9%</td>
</tr>
<tr>
<td>Orthopaedic surgery</td>
<td>113</td>
<td>1.4%</td>
</tr>
<tr>
<td>Diagnostic radiology</td>
<td>108</td>
<td>1.4%</td>
</tr>
<tr>
<td>Anesthesiology</td>
<td>104</td>
<td>1.2%</td>
</tr>
</tbody>
</table>

Source: ECFMG

3. Ibid.
4. Ibid.
• Of the 9,791 standard ECFMG certificates issued in 2011, India and Dominica had the largest number of recipients based upon country of medical school; 1,590 (16.2 percent) of the recipients were graduates of Indian medical schools, and 793 (8.1 percent) received their medical degrees in Dominica.

• With respect to citizenship at entrance into medical school, nationals from either India or the United States typically have received the largest number of certificates each year. In 2011, 26.9 percent of certificates were issued to U.S. citizens, and 17.1 percent of certificates were issued to Indian citizens.

• The 9,791 international medical graduates certified by ECFMG in 2011 graduated from 1,078 medical schools located in 135 countries or territories. Approximately one-half of these medical schools report that English is one of their languages of instruction.

• Aggregate data from the last 25 years reveal that the top five countries with medical school applicants achieving certification have been India, Pakistan, Philippines, Grenada, and Dominica.

• India, United States, Pakistan, Philippines and China have been the top five countries of citizenship for applicants achieving certification over the last 25 years.

U.S. citizens pursuing ECFMG certification

• There is much interest in U.S. citizens who receive their medical education abroad. U.S. citizens accounted for 26.8 percent of the international medical students/graduates registered for examination in 2011. The largest numbers of U.S. citizen registrants were students/graduates of medical schools in Dominica (1,773), Grenada (1,432), Antigua and Barbuda (1,067), Saint Kitts and Nevis (853) and Mexico (715).

• In 2011, 2,631 standard ECFMG certificates were issued to U.S. citizens. The largest numbers of U.S. citizen certificate holders were graduates of medical schools in Dominica (651), Grenada (532), Saint Maarten (211), Antigua and Barbuda (165) and Cayman Islands (158).

• The 2,631 U.S. citizens certified by ECFMG in 2011 graduated from 210 medical schools located in
78 countries or territories. Approximately three-quarters of these medical schools report that English is one of their languages of instruction.

- English was the most common native language reported by U.S. citizens certified by ECFMG in 2011 (76.3 percent). More than 50 other native languages were reported, including Spanish (3.8 percent), Urdu (1.5 percent), Gujarati (1.3 percent), and Arabic (1.2 percent).

- Some 57 percent of the U.S. citizens certified by ECFMG in 2011 were men, and 43 percent were women. Their average age at the time of certification was 29.7 years. The average time between when these U.S. citizens received their medical degree and when they were certified by ECFMG was 0.6 years.

### Post-residency IMGs

- There are 254,396 (25.8 percent) IMG physicians out of a total of 985,375 in the United States.
- In this group of IMGs, 75.5 percent are in patient care (55.1 percent are office-based and 20.4 percent are hospital-based).
- 19.9 percent in research, 16.7 percent in medical teaching, 12 percent in administration.
- Approximately 30 percent of IMGs hold full-time, salaried positions.
- The IMG population is aging: 22.3 percent are over age 65; 19 percent are aged 55–64; 21.2 percent are aged 45–54; 22.8 percent are aged 35–44; 14.7 percent are under 35.
- A trend analysis shows that between 1975 and 2010, the number of IMGs grew by 214.7 percent; whereas, non-IMGs grew by 133.6 percent.

<table>
<thead>
<tr>
<th>Number of physicians in the United States</th>
<th>985,375</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of IMG physicians</td>
<td>254,396</td>
</tr>
<tr>
<td>% IMG physicians in United States</td>
<td>25.8%</td>
</tr>
<tr>
<td>% IMGs in residency programs</td>
<td>26.3%*</td>
</tr>
<tr>
<td>% IMGs in patient care</td>
<td>75.5%</td>
</tr>
<tr>
<td>% IMG's in full-time staff</td>
<td>29.9%</td>
</tr>
<tr>
<td>% IMGs in research</td>
<td>19.9%</td>
</tr>
<tr>
<td>% IMGs in medical teaching</td>
<td>16.7%*</td>
</tr>
<tr>
<td>% IMGs in administration</td>
<td>12%</td>
</tr>
</tbody>
</table>

* Percentages exclude resident/fellows unless otherwise noted.

### Top 20 countries of medical education for IMG physicians

Percentage of total IMG population (number of physicians)

| Exhibit 10: Specialties pursued by J-1 physicians, 2010-2011 academic year |
|-----------------------------|------------------------------|
| India | 51,330 | 20.4% |
| Philippines | 20,476 | 8.1% |
| Pakistan | 15,104 | 6.0% |
| Mexico | 13,817 | 5.4% |
| Dominican Republic | 8,082 | 3.2% |
| Grenada | 7,599 | 3.0% |
| Dominica | 6,793 | 2.7% |
| USSR | 6,450 | 2.6% |
| China | 5,912 | 2.3% |
| Egypt | 5,447 | 2.2% |
| Iran | 5,088 | 2.0% |
| South Korea | 4,815 | 1.9% |
| Italy | 4,626 | 1.8% |
| Germany | 4,183 | 1.6% |
| Spain | 4,031 | 1.6% |
| Syria | 4,012 | 1.6% |
| United Kingdom | 3,696 | 1.5% |
| Colombia | 3,650 | 1.4% |
| Montserrat | 3,569 | 1.4% |
| Nigeria | 3,489 | 1.4% |

8. Ibid.
### Top 20 states where IMGs practice, 2009

<table>
<thead>
<tr>
<th>State</th>
<th>Total number of IMGs</th>
<th>Percentage of total physician work force</th>
</tr>
</thead>
<tbody>
<tr>
<td>New York</td>
<td>35,900</td>
<td>37%</td>
</tr>
<tr>
<td>California</td>
<td>27,271</td>
<td>28%</td>
</tr>
<tr>
<td>Florida</td>
<td>21,225</td>
<td>22%</td>
</tr>
<tr>
<td>Texas</td>
<td>14,642</td>
<td>15%</td>
</tr>
<tr>
<td>Illinois</td>
<td>13,938</td>
<td>14%</td>
</tr>
<tr>
<td>New Jersey</td>
<td>13,907</td>
<td>14%</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>11,616</td>
<td>12%</td>
</tr>
<tr>
<td>Ohio</td>
<td>10,358</td>
<td>11%</td>
</tr>
<tr>
<td>Michigan</td>
<td>10,118</td>
<td>10%</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>7,688</td>
<td>8%</td>
</tr>
<tr>
<td>Maryland</td>
<td>7,428</td>
<td>8%</td>
</tr>
<tr>
<td>Virginia</td>
<td>5,505</td>
<td>8%</td>
</tr>
<tr>
<td>Georgia</td>
<td>4,905</td>
<td>5%</td>
</tr>
<tr>
<td>Connecticut</td>
<td>4,495</td>
<td>5%</td>
</tr>
<tr>
<td>Arizona</td>
<td>3,819</td>
<td>4%</td>
</tr>
<tr>
<td>Missouri</td>
<td>3,769</td>
<td>4%</td>
</tr>
<tr>
<td>North Carolina</td>
<td>3,726</td>
<td>4%</td>
</tr>
<tr>
<td>Indiana</td>
<td>3,348</td>
<td>3.4%</td>
</tr>
<tr>
<td>Tennessee</td>
<td>3,189</td>
<td>3.3%</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>3,142</td>
<td>3.2%</td>
</tr>
</tbody>
</table>

### IMGs by age and major professional activity

- **Patient care**: 77.8%
- **Office-based**: 55.1%
- **Hospital-based**: 29.7%
- **All other categories**: 24.5%
- **Over 65**: 22.3%
- **Under 35**: 14.7%
- **55-64**: 19.0%
- **45-54**: 21.20%
- **35-44**: 22.80%
- **Under 35**: 14.70%

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10. Ibid.
### Distribution of IMGs by sex and year of graduation

Percent distribution of international medical graduates compared with total physicians by sex and year of graduation, 2010

<table>
<thead>
<tr>
<th>Year of Graduation</th>
<th>Male</th>
<th>Female</th>
<th>IMGs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prior to 1970</td>
<td>6.70%</td>
<td>6.70%</td>
<td>22.70%</td>
</tr>
<tr>
<td>1970-1979</td>
<td>9.60%</td>
<td>9.60%</td>
<td>18.60%</td>
</tr>
<tr>
<td>1980-1989</td>
<td>17.15%</td>
<td>17.15%</td>
<td>21.40%</td>
</tr>
<tr>
<td>1990-2010</td>
<td>21.50%</td>
<td>21.50%</td>
<td>23.40%</td>
</tr>
</tbody>
</table>

Source: Tables 2.4, 2.5, and 2.6

Physician Characteristics and Distribution in the U.S. 2012

### Distribution of IMGs by age and sex

<table>
<thead>
<tr>
<th>Sex</th>
<th>Total</th>
<th>Under 35</th>
<th>35-44</th>
<th>45-54</th>
<th>55-64</th>
<th>65 and over</th>
</tr>
</thead>
<tbody>
<tr>
<td>Both</td>
<td>100.0</td>
<td>14.7</td>
<td>22.8</td>
<td>21.2</td>
<td>19.0</td>
<td>22.3</td>
</tr>
<tr>
<td>Male</td>
<td>100.0</td>
<td>12.0</td>
<td>19.8</td>
<td>21.3</td>
<td>20.7</td>
<td>26.2</td>
</tr>
<tr>
<td>Female</td>
<td>100.0</td>
<td>20.5</td>
<td>29.2</td>
<td>21.1</td>
<td>15.3</td>
<td>14.0</td>
</tr>
</tbody>
</table>

Source: Tables 2.4, 2.5, and 2.6

Physician Characteristics and Distribution in the U.S. 2012

### Percentages of IMGs in highest IMG self-designated specialties, ranked by size, 20 (number of IMG physicians)

<table>
<thead>
<tr>
<th>Specialty</th>
<th>%</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anesthesiology</td>
<td>4.5%</td>
<td>(11,466)</td>
</tr>
<tr>
<td>Psychiatry</td>
<td>5.2%</td>
<td>(12,996)</td>
</tr>
<tr>
<td>Pediatrics</td>
<td>6.4%</td>
<td>(16,110)</td>
</tr>
<tr>
<td>Family medicine</td>
<td>8%</td>
<td>(19,471)</td>
</tr>
<tr>
<td>Obstetrics</td>
<td>2.3%</td>
<td>(6,479)</td>
</tr>
<tr>
<td>Radiology</td>
<td>0.7%</td>
<td>(1,695)</td>
</tr>
<tr>
<td>General surgery</td>
<td>3%</td>
<td>(7,087)</td>
</tr>
</tbody>
</table>

* Percentages exclude resident/fellows unless otherwise noted

12. Ibid.
13. Ibid.
The Educational Commission for Foreign Medical Graduates and IMGs

Medical students all over the world who aspire to receive U.S. training have looked upon the Educational Commission for Foreign Medical Graduates (ECFMG) as a symbol of American preeminence in medicine. Furthermore, once they reach the shores of America, they tend to view ECFMG as their intellectual portal of entry into American medicine, the gate keeper to their fortunes, and their *loco parentis*, as it were, that watches over their well-being in America. Whether or not any of these expectations is realistic or has a chance to be realized is debatable. The ECFMG is primarily an organization sponsored by several major U.S. professional medical associations to test and certify the readiness of IMGs to enter graduate medical education in the United States. Consequently, the ECFMG has been placed in an unequivocal role of being an arbiter and an advocate all at once by virtue of its structure and the institutional transference it evokes in thousands of foreign physicians. While it endeavors to make the transition to the United States as painless as possible for the IMG, its principal role is that of a testing organization. Therefore, it cannot succeed in both roles because it is, after all, a U.S. agency that has to implement its sponsoring organizations’ policies. In some instances, such as the decision to hold the Clinical Skills Assessment (CSA) only in the United States, the ECFMG might have disappointed many students abroad by changing its usual practice of holding examinations all over the world. Similarly, IMGs may unfairly criticize ECFMG for the immigration imbroglio they currently face. Furthermore, the growing number of fully qualified IMG applicants in the United States who are unable to enter graduate medical education is a significant sore point for the IMG community.

On the other hand, looking at all the constraints that the ECFMG has been working under, it has done a remarkable job in many areas that impact the professional and personal lives of IMGs. It conducts a gargantuan, spotlessly clean, mindbogglingly complex process of certification and verification of credentials of thousands of foreign and U.S. IMGs. It is responsive to the needs of U.S. training directors in ensuring timely entry of IMGs into residency classes. It has demonstrated enormous sensitivity to IMGs’ plight by starting many effective acculturation and mentorship programs. In its new role as an international accrediting agency, it will be a positive force in enhancing the quality of medical education in countries with ineffectual or nonexistent accreditation systems. Its Foundation for Advancement of International Medical Education and Research (FAIMER) has done a remarkable job in training foreign doctors as medical educators. Therefore, in balance, one could say that the ECFMG is neither friend nor foe of IMGs, and it has done more good to help advance the international medical agenda. It is an incredibly productive and creative organization in international medicine. Following is an update on the history of ECFMG, its initiatives, the profile of IMGs and ECFMG’s acculturation programs. The statistics are from the 2011 ECFMG Annual Report.

In the early 1950s the immigration of foreign physicians had led to concerns over their language and medical skills, and a decision to test their readiness to undergo training was made by the leadership of medical organizations such as the American Medical Association. Consequently, a private, nonprofit organization, the Evaluation Service for Foreign Medical Graduates, 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, the ECFMG administered its first medical science examination and test of written English knowledge in 17 centers to 298 IMGs. 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 89-236) abolished national quotas and gave preference to individuals with occupations designated as “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 that IMGs had previously enjoyed in the United States began changing in the mid-1970s. The Health Professions Educational Assistance Act 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, PL 94-484 mandated specific examination requirements for foreign national physicians. In response, an

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examination that met the new requirements, the Visa Qualifying Exam (VQE), was introduced. The VQE was essentially a shorter version of the then current NBME Part I and Part II examinations given to U.S. medical school students and graduates. The VQE was replaced in 1984 by the Foreign Medical Graduate Examination in the Medical Sciences. However, all through this evolution of the examination process, there was a move toward finding one examination common to both U.S. medical graduates and IMGs.

**ECFMG timeline**

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1958</td>
<td>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.</td>
</tr>
<tr>
<td>1962</td>
<td>The AMQ is renamed the ECFMG examination.</td>
</tr>
<tr>
<td>1969</td>
<td>The ECFMG assumes responsibility for administering the examinations, which had previously been administered by the NBME.</td>
</tr>
<tr>
<td>1972</td>
<td>The ECFMG reports examination results in a standard and scaled format similar to the NBME reporting format.</td>
</tr>
<tr>
<td>1974</td>
<td>A new ECFMG English test is introduced.</td>
</tr>
<tr>
<td>1977</td>
<td>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.</td>
</tr>
<tr>
<td>1979</td>
<td>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.</td>
</tr>
<tr>
<td>1981</td>
<td>The Federation Licensing Examination (FLEX) is accepted as an alternative examination for ECFMG certification.</td>
</tr>
<tr>
<td>1984</td>
<td>The Foreign Medical Graduate Examination in the Medical Sciences (FMGEMS), developed by the NBME, replaces the ECFMG examination and the VQE.</td>
</tr>
<tr>
<td>1989</td>
<td>The ECFMG begins administering the NBME Part I and Part II examinations as an alternative to FMGEMS.</td>
</tr>
<tr>
<td>1992</td>
<td>The United States Medical Licensing Examination (USMLE) Step 1 and Step 2 examinations are introduced.</td>
</tr>
<tr>
<td>1993</td>
<td>FMGEMS is administered for the last time; it is replaced by the USMLE Step 1 and Step 2 examinations.</td>
</tr>
<tr>
<td>1998</td>
<td>The ECFMG Clinical Skills Assessment (CSA) is introduced.</td>
</tr>
<tr>
<td>1999</td>
<td>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).</td>
</tr>
<tr>
<td>2004</td>
<td>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.</td>
</tr>
<tr>
<td>2006</td>
<td>ECFMG launches the Acculturation Program to assist IMGs who plan to attend U.S. training programs with their transition to training and living in the United States. It includes the IMG Advisors Network that connects the IMGs with advisors with experience in U.S. graduate medical education.</td>
</tr>
<tr>
<td>2008</td>
<td>Pilot programs are begun to obtain results and other documents directly from international medical schools through electronic means.</td>
</tr>
<tr>
<td>2009</td>
<td>A summit is hosted in Philadelphia on current and upcoming international activities related to supporting licensing, certifying, accrediting, and educating physicians and the health systems in which they work.</td>
</tr>
<tr>
<td>2010</td>
<td>ECFMG announces that, effective in 2023, graduation from appropriately accredited medical schools will be required for applying for ECFMG certification. Foreign medical schools will begin to be accredited by international accrediting agencies.</td>
</tr>
<tr>
<td>2011</td>
<td>ECFMG Certificate Holders Office (ECHO) is piloted to provide resources to IMGs to help them integrate into U.S. healthcare.</td>
</tr>
</tbody>
</table>

Beginning in 1989, IMGs were eligible to take the NBME Part I and Part II examinations. Beginning in 1994, the United States Medical Licensing Examination (USMLE) Steps 1, 2 and 3 were required of both IMGs and U.S. medical graduates for licensure in the United States. The USMLE Step 1, Step 2 Clinical Knowledge (CK), and Step 2 Clinical Skills (CS) are the current examinations required for ECFMG certification, a requirement for IMGs to enter graduate medical training. In 1999, computer-based testing for all steps of the USMLE was introduced. The ECFMG serves as the registration entity for IMGs for Step 1, Step 2 CK and Step 2 CS. 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. A total of 656,813 candidates started the ECFMG certification process between 1958 and 2005, and 292,287 of these (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 the exam format and financial cycles.

Other notable contributions of the ECFMG

The ECFMG’s commitment to promoting excellence in international medical education led to the establishment of its nonprofit foundation FAIMER, formed to advance ECFMG’s programs for international medical educators and its research agenda. Through FAIMER, the ECFMG offers training in leadership and in health professional education; creates and maintains data resources on medical education worldwide; and conducts research on international medical education programs, physician migration and U.S. physician work force issues.

Customized consultation and instruction

FAIMER provides customized consultation and instruction to educational institutions, professional organizations and accrediting agencies worldwide. Through consultation, FAIMER staff members provide guidance and resources to help individual institutions meet their unique challenges and achieve identified objectives. Instruction includes lectures and/or workshops conducted by FAIMER staff. These services are available in the following areas:

**Accreditation:** Design, implementation and evaluation of quality assurance processes for medical schools. Topics include: an overview of quality assurance, medical school evaluation and improving the quality assurance process.

**Assessment:** Design, implementation and periodic evaluation of assessments of knowledge, skills and competence of students, programs or health professionals. Topics include: identifying education objectives, determining and developing examination content, standard setting and evaluation of programs.

**Educational methods:** Teaching and learning techniques for a variety of settings/situations. Topics include: problem-based learning (PBL), interactive learning, large- and small-group techniques, one-on-one teaching and the one-minute preceptor.

**Educational research:** Processes used at each stage of educational research that facilitate both individual and collaborative efforts. Topics include: conducting a literature review, evaluating published research, design and methodology, sampling, data collection and data analysis.

**Program evaluation:** Design and testing of innovative program evaluation methods that foster an understanding of the impact of education programs and faculty development and their link to longer-term objectives. Topics include: stakeholder identification, selection of program evaluation models, identification of outputs and outcomes, program rationale, methods of analysis and dissemination of information.
There have been several other major initiatives by ECFMG in the past few years.

1. The ECFMG launched a pilot program in January 2012 to verify electronically the medical education credentials of the candidates for its certification examinations. The electronic verification process, which is conducted through the secure Web-based ECFMG Medical School Web Portal, includes features that help ensure timely and complete verifications. It also eliminates the transit time and potential postal delays associated with mailing paper documents. Like the paper process, the electronic verification process includes security measures to ensure that only authorized medical school officials are able to verify credentials. This process will be of great help to the candidates as well as the medical schools abroad.

2. In 2010 the ECFMG Board of Trustees approved creation of the ECFMG Certificate Holders Office (ECHO), an initiative to provide services to IMGs who have been certified by ECFMG and those nearing certification. ECHO will provide IMGs with a comprehensive collection of resources related to issues central to IMGs' successful integration into U.S. health care. Initial ECHO offerings will include information about the residency application process, specialty and program selection, IMGs in U.S. graduate medical education, U.S. medical licensure, the U.S. health care system, visa sponsorship options, specialty certification, fellowship options and advanced degrees. Available in a variety of formats and media, these resources will allow IMGs to be better prepared, organized and engaged when pursuing U.S. residencies; will enhance their learning opportunities; and will enable them to make more informed career decisions. ECHO is expected to be launched in 2012.

In addition, ECFMG's role in accrediting foreign medical schools was recently launched. In September 2010, the ECFMG announced that, effective in 2023, physicians applying for ECFMG certification will be required to graduate from a medical school that has been appropriately accredited. To satisfy this requirement, the physician's medical school must be accredited through a formal process that uses criteria comparable to those established by the Liaison Committee on Medical Education or other globally accepted criteria, such as those put forth by the World Federation for Medical Education. The ECFMG believes that this additional requirement for ECFMG certification will stimulate the development of a meaningful, universally accepted system of accreditation for undergraduate medical education outside the United States and Canada.

The majority of IMGs in the United States are from non-Western cultures. Consequently, they experience significant differences with the medical and popular culture of the United States. Despite scoring high in their qualifying examinations, some of them need help in adjusting to newer models of the physician-patient, physician-teacher and interdisciplinary relationships. They need help in understanding the health care delivery, payment and accreditation systems, as well as the organization of training and their own potential contribution to their success. Some specialties, such as psychiatry, offer orientation tools like the IMG Institute, a day-long conference on successful cultural adaptation for IMGs that is presented at their annual meeting. However, the majority of specialties do not have such learning experiences. The ECFMG has performed yeoman’s service in this regard by creating an acculturation program that all educators and residents may download for free. The following program description is an excerpt from the ECFMG Annual Report for 2011.
New ECFMG® program provides support and service to international medical graduates

As of July 2012, The Educational Commission for Foreign Medical Graduates (ECFMG) announced the launch of the ECFMG Certificate Holders Office (ECHO), a new program that provides support and service to ECFMG-certified physicians, and physicians about to be certified, as they plan their careers. ECHO expands on the resources offered by ECFMG’s former Acculturation Program.

International medical graduates (IMGs)—physicians who received their medical degrees outside the United States and Canada—make up more than one-quarter of the U.S. physician workforce. Through its program of certification, ECFMG evaluates whether these physicians are ready to enter U.S. graduate medical education (GME) programs, where they receive medical specialty training and provide supervised patient care.

ECHO provides free resources that allow IMGs to be better prepared and organized in making important career decisions. These resources will provide guidance on important milestones for entering the U.S. health care system, such as applying to U.S. GME programs, obtaining a U.S. medical license, and medical specialty certification. ECHO will also strive to provide information on non-clinical careers for certified IMGs who do not enter U.S. GME.

In addition to allowing IMGs to access ECFMG’s expertise, ECHO enables IMGs to connect with other experts and organizations, and with each other, to learn, share, and network. ECHO’s feedback mechanisms offer new ways for IMGs to communicate with ECFMG on an ongoing basis, establishing a dialogue between ECFMG and the physicians it certifies.

As ECFMG’s current President and Chief Executive Officer, Emmanuel G. Cassimatis, M.D., observes, “Providing these additional services to the physicians we certify enhances their professional development. ECHO also strengthens the relationship between ECFMG and IMGs, extending our connection beyond ECFMG Certification and ensuring opportunities for IMGs to tell us what they need and how we can better meet these needs.”

For more information, visit the ECHO section of the ECFMG website at www.ecfmg.org/echo, where IMGs can access ECHO’s resources, which are updated monthly, and subscribe to ECHO’s free monthly e-newsletter.


In summary, the ECFMG, which was started primarily to examine and certify the readiness of foreign physicians to enter graduate medical education in the United States, has expanded the scope of its activities to include, inside the United States, programs to help IMGs adapt more easily to American culture and subcultures, and on the international scene, accreditation of foreign schools and teaching medical education skills and knowledge to foreign medical professionals.
IMGs in the context of physician shortage in the United States

Impact of health care reform on physician work force

Our celebration of the U.S. Supreme Court action reaffirming the legitimacy and constitutionality of the health care reform law has been tempered by the realization that the United States may not have an adequate number of physicians to care for the 37 million more Americans who will be insured through health care reform. According to the Association of American Medical Colleges (AAMC), the supply and demand of physicians are estimated as follows:\(^1\):

The demand for increased physician services is multi-sourced. The U.S. Department of Health and Human Services estimates that the supply of physicians will increase by 7 percent; whereas, the increase in demand will be far more than that in the next decade.

The increased demand will be due to the following:\(^2\):

1. Thirty-seven million Americans will be joining the ranks of the insured as a result of health care reform.
2. The graying of baby-boomers will add 15 million more patients who are eligible for Medicare.
3. The impact of obesity and poor diet will increase demand, as will longer life expectancies resulting from advances in medical care. As the population lives longer, the incidence of severe illness such as cancer will increase.
4. The shortfall in the number of available physicians will affect vulnerable and underserved populations more than other groups. Some health care analysts see a relationship between poverty levels and increasing demand for health care. The recent major recession has resulted in higher unemployment rates, which in turn cause an increased demand for services.

Over the past several years a growing number of national, state and specialty-specific studies have concluded that the U.S. physician work force is facing current or future shortages. Recent work force studies indicate that we face current and future shortages in a wide array of specialties. In addition to potential shortages in primary care, as the population ages, the demand for specialists who provide care for patients over 65 years of age will increase significantly. The aging of the population is expected to contribute to shortages in many of these specialties.

On the side of physician supply, the following factors are implicated:

1. The dynamics among the physicians themselves are changing.
2. There is increasing feminization of the physician work force, with female physician work efforts being less than that of male counterparts because of family and child-rearing responsibilities. This change will result in the need for more full-time equivalent physicians to accomplish the same tasks.
3. Physicians are aging, with nearly one-third of them to retire in the next decade.\(^3\)
4. Younger physicians work fewer hours and take more vacations due to differences in quality-of-life priorities.

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5. The number of U.S. medical schools has not expanded in proportion to long-standing demand.

Various organizations have offered their solutions to the problem of physician shortage. There is extensive recent literature on physician shortage in various specialties and geographic locations.

**Council on Graduate Medical Education findings**

The Council on Graduate Medical Education (COGME) forecasts that the supply of practicing physicians will number approximately 1.02 million by 2020, and the demand is likely to grow by 1.03 million to 1.24 million physicians. The COGME report discusses at length various factors that will impact these physician workforce projections. On the basis of its observations, COGME recommends that the number of residents trained should be increased by 3,000 at entry level, with a 15 percent increase in total enrollment from the 2002 level. In addition, COGME recommends greater Medicare support by an increase in the number of residency and fellowship positions in parallel to the increase in U.S. medical school graduates.

Following are the comprehensive recommendations offered by the AAMC, which is one of the national organizations addressing the international medical graduate’s (IMG’s) role in the work force.

1. Enrollment in Liaison Committee on Medical Education (LCME)-accredited medical schools should be increased by 30 percent from the 2002 level over the next decade. This expansion should be accomplished by increased enrollment in existing schools as well as by establishing new medical schools.

2. The aggregate number of graduate medical education (GME) positions should be expanded to accommodate the additional graduates from accredited medical schools.

3. The AAMC should assist medical schools with expanding enrollment in a cost-effective manner, assuring appropriate medical education for traditional and nontraditional students and increase the number and preparedness of applicants.

4. The AAMC should continue to advocate for and promote efforts to increase enrollment and graduation of racial and ethnic minorities from medical school and promote the education and training of leaders in medical education and health care from racial and ethnic minorities.

5. The AAMC should examine options for development of (1) a formal, voluntary process for assessing medical schools outside the United States, and (2) a mechanism for overseeing the clinical training experiences in the United States of medical students enrolled in foreign medical education programs.

6. The AAMC should take a more active role in supporting and assisting associations of medical schools in other countries, especially in less developed parts of the world. The AAMC should work with its members to expand collaboration between medical schools and teaching hospitals in the United States with those in less developed countries.

7. The J-1 visa is the most appropriate visa for non-U.S. citizen graduates of foreign medical schools entering graduate medical education programs in the United States and should be encouraged.

8. The AAMC should undertake a study of the geographic distribution of physicians and develop recommendations to address maldistribution in the United States.

9. National Health Service Corps (NHSC) awards should be increased by at least 1,500 per year to help meet the need for physicians caring for underserved populations and to help address rising medical student indebtedness.

10. Studies of the relationship between physician preparation (i.e., medical education and residency training) and the quality and outcomes of care should be conducted and supported by public and private funding.

11. Ongoing and stable funding should be provided to track the physician workforce, including monitoring the supply of, the demand for and the contributions made by foreign medical graduates.

12. Individual medical students and physicians should be free to determine for themselves which area of medicine they wish to pursue, and GME programs and teaching hospitals should be free to offer training in specialties they wish to offer if accredited by the ACGME. The AAMC should provide students, physicians, programs and hospitals with the best available and timely data on physician workforce.

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needs in order to support informed decisions. The AAMC should support efforts to promote a health care delivery and financing system that can better align marketplace demand for physicians with health care needs of the population.

Health Resources and Services Administration

The Health Resources and Services Administration in the U.S. Department of Health and Human Services released a report in 2006 that projected a shortfall of approximately 55,000 physicians in 2020. If current trends continue, the full-time equivalent physician supply is projected to grow to 866,400 by 2020, while demand for physicians will increase to 921,500 due to the growth and aging of the U.S. population. The report projected that the shortages will be greatest in non-primary care specialties.6

Association of Academic Health Centers

In a report by the Association of Academic Health Centers, the dysfunction of public and private health work force planning is highlighted, and a call is given to implement a comprehensive national policy with effective solutions. The study claims that too many entities are controlling health work force policy-making, which leads to a limited focus instead of a broad strategic vision and to short-term decisions driven by responses to crisis rather than long-term planning. A broader, integrated approach is recommended in which the federal government is in charge of work force planning, and this planning becomes a priority domestic policy issue.7

It is distinctly clear that a current and future shortage of physicians in individual states, as well as in specialties, is a reality. In this regard, the current discussion is different from the one in the 1990s. Overall, the convergent ideas comprise four areas of discussion.

There is agreement on these three areas: (1) there is a shortage of physicians, and a 30 percent expansion of output from U.S. medical schools by 2015 should address this shortage; (2) there is a greater need for primary care physicians; and (3) there should be a concomitant residency expansion in proportion to medical school expansion. The fourth area, the role of IMGs, is left ambiguous.

These areas will be addressed as follows:

Expansion of medical school output

Regarding the AAMC’s recommendation—“enrollment in LCME-accredited medical schools should be increased by 30 percent from the 2002 level over the next decade. This expansion should be accomplished by increased enrollment in existing schools as well as by establishing new medical schools.” Accordingly, as per the following chart, American medical schools have increased their output by 35.5 percent, which is hardly sufficient to plug the shortage forecasted to be around 90,000. Therefore, the solution is literally to double the output of the medical schools, which may not be possible in the current climate of economic hardship. Another possible solution is to reexamine the role of IMGs and include this vital and dependable source of physicians for the work force.

A positive step: A surge of medical and osteopathic schools and enrollment

| Preliminarily accredited schools and applicant schools: |
| University of California–Riverside, Calif. |
| Paul Foster School of Medicine, Texas |
| Western Michigan University, Mich. |
| Central Michigan University, Mich. |
| Oakland University, Mich. |
| Hofstra University, N.Y. |
| Touro University, N.Y. |
| Rowan University, N.J. |
| Commonwealth Medical College, Pa. |
| Virginia Tech, Va. |
| University of South Carolina, S.C. |
| University of Central Florida, Fla. |
| Palm Beach Medical College, Fla. |
| Florida Atlantic University School of Medicine, Fla. |
| Florida International, Fla. |

| Possible schools to open in the following states: |
| California, Oklahoma, Texas (3), Pennsylvania, Louisiana and New York |

| New osteopathic schools in the following states: |
| Washington, North Dakota, Colorado, Montana, Tennessee, South Carolina and Florida |


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The role of IMGs in the workforce

IMGs total 25.8 percent of all post-residency physicians and 26.3 percent of residency physicians in the United States. Their strengths are in patient care (75.5 percent), but they are less represented in research, medical teaching and administration9 (see table below).

<table>
<thead>
<tr>
<th>Number of physicians in United States</th>
<th>985,375</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of IMG physicians in United States</td>
<td>254,396</td>
</tr>
<tr>
<td>% IMG physicians in United States</td>
<td>25.8</td>
</tr>
<tr>
<td>% IMGs in residency programs</td>
<td>26.3*</td>
</tr>
<tr>
<td>% IMGs in patient care</td>
<td>75.5</td>
</tr>
<tr>
<td>% IMGs on full-time staff</td>
<td>29.9</td>
</tr>
<tr>
<td>% IMGs in research</td>
<td>19.9</td>
</tr>
<tr>
<td>% IMGs in medical teaching</td>
<td>16.7*</td>
</tr>
<tr>
<td>% IMGs in administration</td>
<td>12.0</td>
</tr>
</tbody>
</table>

*Percentages exclude residents/fellows unless otherwise noted.

IMGs have been a part of American health care for the last 75 years.10 They have played a critical role in caring for underserved populations and a corrective role in physician maldistribution and in the survival of specialties such as pathology and nuclear medicine. The heterogeneity among IMGs may be an asset in a multicultural society with an expanding minority population that will eventually outstrip the current racial majority.

Relative to the preceding point, it should be noted that the percentage of U.S. minorities entering medical schools in the United States has remained constant for a long period of time despite concerted efforts to increase their presence in the physician workforce. It must be noted, further, that foreign medical education is the preferred route to becoming a physician for U.S. minority students.

In these times of budget deficits and uninsured individuals who will enter the health care system, the IMGs, as physicians who are ready and eligible to enter U.S. GME, may play an important role in serving our country’s patients. Simple arithmetic confirms that without either doubling the output of U.S. medical graduates or keeping IMGs as part of the solution, the physician workforce shortage will not be resolved. Following are some IMG-focused strategies to address the workforce shortage.

Recommendations

1. Fund more graduate medical education positions. If the number of graduate medical education slots were determined by the needs of the system, the physician shortage could more realistically be addressed. The graphic on pageXX illustrates the interrelationships among the four major groups in the U.S. residency workforce. With the total number of U.S. medical graduates slated to grow by 30 percent by 2014, it is highly unlikely that IMGs will find space in residency training, or their numbers will be so diminished due to the residency cap imposed by Medicare. The best solution would be to lift the cap and see how the market forces would correct the demand for physicians. If this change is not made, most likely there will be an impact on care for the underserved and in primary care because of the central role IMGs play in those areas. See the table on page XX.

2. Redesign immigration visa categories by permitting dual intent for individuals with temporary visas or by doing away with temporary visas altogether: A new visa type similar to category O (a temporary visa for “aliens of extraordinary ability”) should be created for physicians to allow flexibility during the various phases of their training and careers.

3. Plan for the long term—if the current physician shortage is not addressed by the measures suggested, the following long-range solutions should be considered:

   a) Undertake active recruitment of foreign physicians. This idea is a radical one that would allow IMGs with postgraduate degrees from certain English-speaking countries to enter the United States and start practicing right away. (The requirement would be that any foreign physician, no matter how senior, who wishes to obtain a license to practice medicine in the United States, must complete a residency program here.) Active recruitment was used by the United Kingdom to recruit a large number of senior physicians from India and South Africa to run its National Health Service.11,9 However, one important point that must be remembered is that it is unethical for the recruiter to rescind these physicians’ employment when the native physician supply improves.

b) Develop a truly global medical education system in which the undergraduate and graduate medical education standards of the United States shape medical education abroad. This development would allow professionals to move back and forth between the United States and their countries of origin, as individuals are able to do within countries and between Eurozone countries. Recently, the Accreditation Council for Graduate Medical Education accredited Singapore’s graduate medical education program, and many U.S. medical schools have established satellite campuses abroad. The Educational Commission for Foreign Medical Graduates (ECFMG) will require international accreditation of foreign medical schools starting in 2023.12

With the exception of the AAMC, which calls for continued entry of IMGs with the J-1 visa, none of the major organizations have explicitly addressed the relevance of IMGs in correcting the physician shortfall. Not addressing the role of IMGs in the workforce shortage is a cause for concern. Reports from the ECFMG mention a double-digit reduction in first-time registrants from India and other South Asian countries.

In conclusion, we have discussed the problem of physician shortage and its causes and have highlighted the role of IMGs in relation to this issue. A balanced physician workforce is critically needed due to the cultural and economic changes occurring in the United States. A partial solution will make the current problem worse, and the country will have to then turn to more expensive solutions or to solutions involving less well-trained individuals—an outcome not supported by any party at this time.

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Number of residents entering the pipeline, by medical school type and academic year

![Graph showing number of residents entering the pipeline by medical school type and academic year](https://example.com/graph.png)


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Graduate medical education

The following is an overview of relevant issues for IMGs intending to seek graduate medical education in the United States. This information is from the Educational Commission for Foreign Medical Graduates (ECFMG) website (ecfmg.org), which contains other useful information as well, and will help IMGs navigate the often confusing initial few years of professional life in the United States.

To enter programs of graduate medical education (GME) in the United States accredited by the Accreditation Council for Graduate Medical Education (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 website (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®), ECFMG will automatically transmit an ECFMG status report to those programs. One also can participate in the NRMP prior to becoming ECFMG-certified, provided the IMG has 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 Association of American Medical Colleges (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 website 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 that an international medical student/graduate applies to 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. Visit the AAMC ERAS website (aamc.org/students/eras/start.htm) for the list of specialties participating in ERAS 2012 (for residency positions beginning in July 2012). Additional specialties may participate in ERAS for residency positions beginning in July 2013. Information on participating specialties for ERAS 2013 will be posted on the AAMC ERAS website 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 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 website. Additional information for international medical students/graduates using ERAS is available on the ERAS support services section of their website 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 NRMP is a U.S.-based private, nonprofit, non-governmental organization created in 1952 to help match medical school students with residency programs. The NRMP is sponsored by the American Board of Medical Specialties, the American Medical Association, the AAMC, the American Hospital Association and the Council of Medical Specialty Societies.

The NRMP began in 1952 in response to dissatisfaction with the process and results of matching applicants to residency programs via the decentralized, competitive market. In general, hospitals benefited from filling their positions as early as possible, and applicants benefited from delaying acceptance of positions. The combination of these factors led to offers being made for positions up to two years in advance. While efforts made to delay the start of the application process were somewhat effective, they ultimately resulted in very short deadlines for responses by applicants, and the opportunities for dissatisfaction on the part of both applicants and hospitals remained.

After its institution in 1952, the NRMP algorithm saw only minor and incremental changes until 1995, when controversy arose regarding whether the program was susceptible to manipulation or was unreasonably fair to employers. Indeed, it was shown that in simple cases (i.e., those that exclude couples, second-year programs and special cases for handling unfilled slots) that had multiple “stable” matching, the algorithm would return the solution that was best for the hospitals and worst for the applicants. It was also susceptible to collusion on the part of hospitals. As a result, in 1995 the board of directors of the NRMP commissioned the design of a new algorithm for conducting the match (that would be as favorable as possible to the applicants), and a study comparing it to the existing NRMP algorithm. The new algorithm was adopted in May 1997 and has been in use since its first application in March 1998, although the study showed that the net effect of the change on actual matches has been minimal.

“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.

To participate in the NRMP, an international medical graduate is required to have an ECFMG certification (with the exception of MD graduates from Canadian medical schools who are not considered IMGs in the United States) by the “rank order list certification

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1. The information contained in this chapter has been taken from this website: www.nrmp.org/. Accessed Jan. 10, 2013.
To acquire an ECFMG certification, the main requirements are:

- Completion of USMLE Step 1, USMLE Step 2 Clinical Knowledge and USMLE Step 2 Clinical Skills
- A medical diploma of medical education from an institution registered in the International Medical Education Directory (IMED)

In comparison, regular graduates from medical schools in the United States or Canada need to complete USMLE Steps 1 and 2 as well, but can participate in the NRMP while still doing their final year of medical school before acquiring their medical diplomas. In effect, taking regular administrative delays into account and with residency programs starting around July, there is a gap of at least half a year for IMGs between graduation from medical school and beginning a residency program; in contrast to U.S. graduates who may start residency directly after completing medical school.

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 applicants have applied will interview them or include them 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. Data from the NRMP indicate that an applicant’s chances of being matched may increase with the number of programs that the applicant ranks.

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. Upon review of the applications, residency program directors invite those applicants they would like 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.

**NRMP All-In Policy**

Beginning with the 2013 Main Residency Match, any program that participates in The Match must register and attempt to fill all of its positions through The Match.

As stated by NRMP, “Beginning with the 2013 Main Residency Match, any program that participates in The Match must register and attempt to fill all of its positions through The Match or another national matching plan. A program is defined by its ACGME number. The All-In Policy applies to positions for which the NRMP offers matching services, including PGY-1 preliminary and categorical positions and PGY-2 positions in advanced programs. However, PGY-2 or higher positions in categorical programs and PGY-3 or higher positions in advanced programs are not subject to the policy because the NRMP does not match for those positions. This policy does not apply to fellowship programs.”

This recent change to NRMP policy creates a disadvantage for the non-U.S. IMGs who may need a visa to begin their residency training. This policy might create a situation where many will not be able to have “on-time” arrivals. However, NRMP does not think that will be the case because “ECFMG data averaged over the last five appointment years (2007–2011) shows that 90 percent of International Medical Graduates (IMGs) approved for J-1 visas were able to begin training on time. With such a high percentage of “on-time” arrivals, an exception to the All-In Policy is not warranted.”

**Supplemental Offer and Acceptance Program**

During Match Week 2012 the National Resident Matching Program launched the Match Week Application Process.
Supplemental Offer and Acceptance Program (SOAP) that was designed to replace the Scramble and provide an equitable, transparent and orderly process for applying to, offering and accepting positions in programs that did not fill in the algorithm phase of the Main Residency Match. In its inaugural run, SOAP accomplished those objectives. Ninety-three percent of unfilled positions were placed in SOAP. By the end of the two, day-one offer rounds, 76 percent of SOAP positions had been filled, rising to 91 percent by the time SOAP concluded on Friday. The ramifications of this policy on IMGs will need to be closely monitored.

In the following, some interesting data on IMG performance in The Match is presented. The graphics and the data for this section were taken from “IMGs in 2012 Match: A Resource of ECFMG Certificate Holders Office Publication, August 2012”. It contains extremely useful information about IMGs and The Match. As is known, U.S. IMGs perform better on The Match in comparison to foreign national IMGs. Internal medicine-C, family medicine, pediatrics-C, psychiatry-C, and internal medicine-P are the top five specialties that matched IMGs.

Forty-one percent of candidates did not match; 43 percent matched; 14 percent found residency positions outside The Match, and 2 percent in the SOAP. It appears that 79 percent of IMGs were matched in the institution where they had their pre-residency rotation or observship, proving the value of these labor-intensive and somewhat ambiguous experiences where hospitals accept IMGs to learn by observing and not doing.

For IMG applicants who would like to know the optimum number of programs that they should apply to in order to ensure acceptance into training, an answer has been found.

Candidates who had the greatest success in obtaining a residency position applied to 101–250 programs, in contrast to those who had applied to 50 or less and between 51 and 100 programs. In addition, candidates who applied to only one discipline had the most success in getting residency in and out of The Match, in comparison to those who applied to two to four or more than four disciplines. In other words, IMGs should choose one discipline and apply to as many programs as they can to maximize their chances of success.

The following few graphs are from the NRMP and the ECFMG, and they give a snapshot of IMGs in GME.
How many GME programs did you apply to through ERAS for the 2012 Match?
How many clinical disciplines (specialties) did you apply to (e.g., internal medicine, family medicine, pediatrics, general surgery, etc.) through ERAS for the 2012 Match?

Before applying for a residency position, did you have any clinical experiences (i.e., observership, clerkship rotation, medical research position) in the United States?
Were you able to secure a residency position at the U.S. institution where you engaged in a clinical experience (e.g., observership, clerkship, medical research)?

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 applications 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 (amabookstore.com). More detailed information on residency programs is available in the AMA Fellowship and Residency Electronic Interactive Database Access System (FREIDA) Online (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 worldwide 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 who are 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 have 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). The 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 website 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 Accredit 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 2012, there were more than 2,500 medical schools listed in the FAIMER database. More than 100 of the medical schools 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 that 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. Faculty members 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 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

Visit the AMA-IMG Section website (ama-assn.org/go/observership) for complete observerships guidelines and evaluation tools.
Immigration and visas

Participation of foreign national international medical graduates (IMGs) in U.S. medicine involves a complex array of immigration laws, licensing and credentialing requirements.

Foreign national IMGs and graduate medical education

As a rule, foreign national IMGs, as with U.S. IMGs and U.S. MGs, must complete graduate medical education (GME) in the United States prior to practicing medicine in the United States. The vast majority of foreign nationals enter the United States in nonimmigrant visa status (or “NIV”) rather than any long-term immigrant visa to carry out their GME in the United States. The primary NIV categories are those of H-1B (specialty occupation) or J-1/J-2 (exchange visitor) categories.

H-1B visa category

The H-1B visa is an employment-based nonimmigrant visa for physician positions, including GME positions, and other specialty occupations requiring a bachelor’s degree or higher in a specific field. The current annual cap on first-time H-1Bs for the private sector is 65,000, with an additional 20,000 H-1B visas available for those who obtained a master’s or higher-level degree from a U.S. institution of higher education. These H-1B visas, called “cap-subject” H-1Bs, first become effective on October 1 of any given year. The first date of application for such H-1Bs is April 1 of the same year. The annual limit, or “cap,” on these visas can vary. In some years, the cap is reached on April 1, (the first date that applications are accepted), and in other years, the limit has been reached as late as January of the following calendar year. Historically, most GME positions have not been subject to this limit, or cap. As such, most GME-based H-1Bs have been permitted to start alongside their colleagues at the commencement of the training year in the summer due to GME programs’ traditional affiliation-based exemptions from the H-1B cap. (Adjudication practices in this arena have shifted recently, as will be discussed later.)

The H-1B category permits foreign national IMGs to enter with “dual intent,” meaning a short-term intent to stay in the United States on an initial, temporary basis and a long-term intent to remain in the United States permanently. The H-1B category permits an admission period of up to three years for a given stay, with an aggregate of an initial six years of stay in H-1B status prior to a required departure from the United States for one year or longer. Additionally, provided certain progress is made toward legal permanent residence status, or “green card,” prior to the end of the fifth year of a person’s H-1B status, the H-1B status can be extended beyond the initial six years until the person receives his/her green card.

J-1/J-2 visa category

The J-1/J-2 visa for foreign national IMGs participating in GME programs is sponsored by the Educational Commission for Foreign Medical Graduates (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, holding a contract or an official letter of offer for a position in an accredited program of GME that is affiliated with a medical school, and providing a statement of need from the Ministry of Health of his or her home country or country of last legal permanent residence.

The J-1/J-2 category prohibits “immigrant intent.” In other words, physicians applying for a J-1/J-2 visa must demonstrate that they have ties to their home country and intend to leave the United States after their GME is completed. Moreover, since the passage of the Health Professions Educational Assistance Act of 1976 (HPEA), physicians undergoing GME in J-1/J-2 status are categorically subject to a requirement to return to their home country or country of last residence for two years after they complete their GME in the United States, and do not have available the “no objection” basis for a waiver available to other J-1 visa holders.

The two-year return requirement of the J-1 visa program can be waived. In some instances, the two-year requirement is waived if the applicant can demonstrate that he or she will be persecuted in his or her home country or that fulfillment of the residency requirement would bring exceptional hardship to the applicant’s U.S. citizen or legal permanent resident spouse and/or children. More commonly, applicants pursue a waiver through the support of an interested governmental agency (IGA) to sponsor their waiver in exchange for a service or research commitment. The most common IGA waiver is the Conrad State 30 program, which was recently reauthorized. The Conrad J waiver program, created in 1994, grew in popularity such that Conrad waivers accounted for more than 90 percent of all J waivers requested by 2004. In addition, due to the heavy demands on the Conrad waiver program because of recent record numbers of J-1 waiver applicants, it is anticipated that other IGAs,

1. Physicians must graduate from ACGME-accredited programs to be eligible to take their board certification examinations in the U.S. In addition, many states within the U.S. require completion of an ACGME-accredited residency program for physician licensure. The exception to this requirement are those physicians who hold a Licensee of the Medical Council of Canada (LMCC), which several states consider to serve as evidence of passing an acceptable licensing examination.
such as the Delta Regional Authority, the Appalachian Regional Commission, and the Department of Health and Human Services, will be invited to increase their waiver sponsorships as well.

**Trends in J vs. H-1B visa for graduate medical education**

The distribution of H-1B visa holders versus J visa holders within the GME population has varied over time. In the 1990s, J visas were the dominant mode of NIV status, at a J-to-H ratio of 35-to-9. This changed over time such that by 2009, work force analysts reported that H-1Bs had overtaken J visas as being the more popular NIV category for GME, with 4.6 percent of all IMGs carrying out GME in H-1B status, as compared to 4 percent in J-1 status.³

More recently, however, there appears to be a return to the J visa as the more typical nonimmigrant visa category for foreign national IMGs in GME programs. ECFMG reports a 13 percent increase in J-1 applications for the first five months of the current calendar year as compared with the prior year; whereas, the total number of foreign national IMG applications matches in the NRMP Match remained relatively constant between the two years. The recent increased popularity in the J category could be attributable to a combination of factors. First, there is increased uncertainty of the all-important H-1B “cap exemption” for physicians in GME. In approximately late 2010, United States Citizenship and Immigration Services (USCIS) began adjudicating affiliation-based H-1B cap exemption of GME programs and teaching hospitals in a manner that led to denials of the exemption. In 2011, USCIS issued an interim policy that gave deference to prior determinations of cap exemption issued on or after June 2006. However, the interim policy was coupled with a statement that additional clarification of the cap exemption would be forthcoming. The additional clarification has not yet been issued, whether through rule-making or less binding guidance, and continued concerns remain that forthcoming guidance will not be favorable to GME programs and similar institutions.

Second, even without the uncertainty of cap exemption, the H-1B program has become more burdensome for GME programs and other employers through increased fees, the institution of an audit site visit program administered by USCIS, and increased Department of Labor enforcement involving a component of H-1Bs called the labor condition application, or “LCA,” and prevailing wage. Third, the number of U.S. medical graduates applying for and successfully matching to GME slots has increased and is expected to continue to increase while government funding for GME slots remains frozen at 1997 levels. Accordingly, one could infer that the relative bargaining power of foreign national IMGs to determine the status in which they will carry out their GME may be on the decline. Thus, as the H-1B becomes disfavored by GME administrators, it will become more difficult for foreign national IMGs to persuade GME programs to sponsor H-1B visas rather than the less programmatically burdensome J-1/J-2 visas.

**Legal permanent residence or “green card” status**

Foreign national IMGs can apply for legal permanent residence, or “green card” status, through the adjustment-of-status process while within the United States or through applying for an immigrant visa at a U.S. consulate or embassy abroad. Of those foreign national IMGs who pursue a green card, most do not file the final step of the process until some point after completing their GME in the United States. Indeed, the majority of J-1/J-2 visa holders are prohibited from filing the final step of the green card process until after completing their required service commitment, which, in turn, cannot commence until after their GME is completed.⁴ Most IMGs pursue employment-based preference classifications while some pursue family-sponsored classifications.⁵

The two primary employment-based green card paths for physicians are the physician National Interest Waiver and the labor certification, or “PERM” process. The physician National Interest Waiver requires a commitment to serve in a Health and Human Services-designated shortage area(s) for an aggregate of five years, accompanied by recognition from the relevant state health agency (ies) that the service is in the public interest. There is no requirement for an independent test of the U.S. labor market, and the immigrant

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². Marvin R. Dunn, et al., *Graduate Medical Education*, 1997–1998, 280 J. Am. Med. Ass’n 809, 812 (1998) (reporting 34.8% of IMGs were on J-1 or J-2 visas, 9% were on H-1 or H-1B visas, and 49% were either U.S. Citizens or permanent residents).
⁴. The exception to this is for those physician National Interest Waiver applicants born in a country that is current” in the “EB-2” preference category.
⁵. Among family-sponsored classifications, the preferred classification is that of “immediate relative” of a U.S. citizen spouse, a category that is outside of the preference-based system and for which immigrant visa numbers remain continuously available.
petition can be self-sponsored. Physicians from most countries are able to apply for the final step of the green card process, as well as corollary interim work authorization for the physician and qualifying family members, at the onset of the case.

The PERM process, in contrast, requires a sponsoring employer to test the labor market to establish that there are no U.S. workers willing, qualified and available for the offered job opportunity. The sponsoring employer must pay for and carry out required recruitment outlined by the Department of Labor, as well as submit an application with the Department of Labor before the employer may file an immigrant petition for the foreign national. It is only after certification by the Department of Labor that the employer can file an immigration petition on behalf of the physician. Interim work authorization through the PERM process cannot be obtained until labor certification is obtained from the Department of Labor.

**Recent trends in the pursuit of green card status**
The physician National Interest Waiver has grown and is likely to continue to grow in popularity at eligible work locations due to a number of factors. First, the Department of Labor increased the financial burden of the PERM process upon employers through regulations adopted in 2007 that require an employer to pay for all labor certification-related costs, including advertisements and attorney fees. There is no parallel regulation regarding the payment of the physician National Interest waiver process. Second, PERM audit rates have recently increased dramatically from a historical 31 percent to 80 percent, and standard PERM audits have increased in the breadth of information and documentation requested. This, in turn, has placed increased burdens upon sponsoring employers. Third, recent shifts in the interpretation of the existing regulations by the Department of Labor and the Board of Alien Labor Certification Appeals (BALCA) have led to increased denials and uncertainty of success with pending PERM applications. Accordingly, it would appear that at least in the near term, the physician National Interest Waiver will enjoy growing popularity.

The following tables are from the 2011 Educational Commission for Foreign Medical Graduates Annual Report.
USIMGs

U.S. citizens who attend medical school abroad are mainly classified as U.S. IMGs (USIMGs) based on their country of birth and citizenship. USIMGs are physicians either born in the United States or naturalized U.S. citizens who obtain their undergraduate medical education at 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. Foreign national IMGs 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 an article in Health Affairs written by Jack Boulet, PhD, of FAIMER in 2009. “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 percent) attended American University of the Caribbean (AUC) School of Medicine (Netherlands Antilles).” According to the ECFMG, for all USIMGs who submitted an initial application between 1992 and 1996, 66.2 percent achieved certification. In contrast, only 53.9 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). According to the AMA Physician Masterfile in 2006, 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.

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 was 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). According to the AMA Physician Masterfile in 2006, 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.
Citizenship status of international medical graduates with no prior U.S. graduate medical education in the first year of GME on duty December 31, 2010

<table>
<thead>
<tr>
<th>Specialty/subspecialty</th>
<th>U.S. citizen</th>
<th>U.S. permanent Resident</th>
<th>Non-U.S. Citizen</th>
<th>Unknown Citizenship/foreign born</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anesthesiology</td>
<td>34</td>
<td>5</td>
<td>15</td>
<td>24</td>
<td>78</td>
</tr>
<tr>
<td>Emergency medicine</td>
<td>67</td>
<td>6</td>
<td>8</td>
<td>6</td>
<td>87</td>
</tr>
<tr>
<td>Family medicine</td>
<td>658</td>
<td>195</td>
<td>209</td>
<td>109</td>
<td>1171</td>
</tr>
<tr>
<td>Internal medicine</td>
<td>889</td>
<td>473</td>
<td>974</td>
<td>820</td>
<td>3156</td>
</tr>
<tr>
<td>Neurological surgery</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>7</td>
<td>12</td>
</tr>
<tr>
<td>Neurology</td>
<td>16</td>
<td>5</td>
<td>21</td>
<td>26</td>
<td>68</td>
</tr>
<tr>
<td>Obstetrics and gynecology</td>
<td>90</td>
<td>14</td>
<td>43</td>
<td>20</td>
<td>167</td>
</tr>
<tr>
<td>Orthopaedic surgery</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>Otolaryngology</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Pathology-anatomic and clinical</td>
<td>51</td>
<td>58</td>
<td>50</td>
<td>50</td>
<td>209</td>
</tr>
<tr>
<td>Pediatrics</td>
<td>190</td>
<td>51</td>
<td>203</td>
<td>167</td>
<td>611</td>
</tr>
<tr>
<td>Physical medicine and rehabilitation</td>
<td>10</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>16</td>
</tr>
<tr>
<td>Preventive medicine</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Psychiatry</td>
<td>175</td>
<td>73</td>
<td>91</td>
<td>72</td>
<td>411</td>
</tr>
<tr>
<td>Radiology-diagnostic</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Surgery-general</td>
<td>204</td>
<td>53</td>
<td>109</td>
<td>84</td>
<td>450</td>
</tr>
<tr>
<td>Transitional year</td>
<td>42</td>
<td>3</td>
<td>20</td>
<td>28</td>
<td>93</td>
</tr>
<tr>
<td>Combined specialties</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internal medicine/emergency medicine</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Internal medicine/family medicine</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Internal medicine/pediatrics</td>
<td>17</td>
<td>0</td>
<td>8</td>
<td>5</td>
<td>30</td>
</tr>
<tr>
<td>Internal medicine/preventive medicine</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Internal medicine/psychiatry</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Pediatrics/medical genetics</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Pediatrics/psychiatry/child and adolescent psychiatry</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total (%)</strong></td>
<td><strong>2456 (37.3)</strong></td>
<td><strong>942 (14.3)</strong></td>
<td><strong>1765 (26.8)</strong></td>
<td><strong>1427 (21.7)</strong></td>
<td><strong>6590</strong></td>
</tr>
</tbody>
</table>

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.

Dynamics of migration: Brain drain

Several reports have examined the social, economic, ethical and professional issues inherent in physician migration.1,2 The four large wealthy English-speaking countries (United States, United Kingdom, Canada and Australia) have been the beneficiaries of large-scale immigration of physicians for decades.3 Meanwhile, middle- and low-income developing nations such as India, the Philippines, Pakistan and nations of Sub-Saharan Africa have been the donor countries of these physicians. Several authors have written that poorer countries lose many assets other than health care with large-scale outmigration of physicians; this is especially concerning to unstable democracies when they lose important members of a middle-class base to support democratic processes and to create demand for quality primary education.4,5,6 The depletion of health professionals from lower-income countries threatens the right to health in poorer countries and widens the gap in health inequities worldwide.7 In Africa alone, around 23,000 health care professionals emigrate annually.8 In South Africa, one-third to half of its graduates emigrate every year.9

Immigration theory informs us that “push factors” prompt professionals to leave poor countries in favor of settling in higher income countries. Unfortunately, a number of foreign countries are unable to fully employ all the physicians they train, in part because of macro-economic restrictions placed on them by international monetary authorities.10,11 Additionally, the nature of medical education in many countries prepares physician graduates all too well for migration rather than for the medical and public health problems in their own countries.12,13

An early study by Viel outlined “pull factors,” which haven’t changed much in several decades.14 These include a desire to study in a professional context regarded as more medically advanced, better pay, the desire to escape political instability at home, economic conditions in home countries, the possibility of improved social status in wealthier countries, fear of being sent to practice in remote areas in the home country and better opportunities for the migrant’s children. Another early study by Stevens and others found a desire for medical specialization in the United States stood out as the most common reason for migration.15 A more recent study of “pull factors” in wealthier countries pointed to training opportunities, higher living standards, better practice conditions and more sophisticated research conditions.16

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.17

In the case of people with a tertiary education who have been prepared for professional service by 15 to 20 years of education, their emigration takes with them the expensive training afforded them by the institutions and governments of their home countries.

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7. See footnote 4 above
Those investments are made, in part, to improve the living conditions of the collective citizenry of the country. Educational investments are afforded by a collective contribution of taxes and donations by all (or many) of a state’s citizens, as tuition almost never pays anything approaching the full cost of an education in any country. In fact, a recent estimate is that nine African nations hardest hit by the AIDS epidemic have cumulatively lost about $2.2 billion by investing in physician training for individuals who subsequently migrated.

The United States requires medical doctors to complete postgraduate residency in one of its recognized specialty training programs. Nearly 6,000 physicians who trained abroad come to the United States each year to train in residency positions, usually with the intent to stay. Ironically, during their residency training, these physicians are providing considerable amounts of low-cost care to America’s uninsured population on the public wards and in emergency departments of training hospitals. As the United States lurched into a form of health reform that will expand coverage, it is anticipated that demand for care will expand even further, creating an even stronger pull for physicians to migrate here from abroad. The New York Times editorialized once (August, 2004) that “The obvious solution is for wealthier countries to reimburse Africa’s health and educational systems for the cost of poaching their professionals.” And although one in four U.S. physicians has been trained abroad (about 200,000 of them), thousands more foreign-trained doctors are working in the United States in positions that do not require licensure, creating a form of brain waste.

The United Kingdom also pursued, for decades, an aggressive policy of attracting physicians from India and Africa, but in 2003 it adopted a Code of Practice discouraging recruitment of physicians from lower-income countries without a reciprocal agreement with the other government. This policy has been strengthened a couple of times since then, and has started to show results in a reduced number of physicians and nurses coming to the U.K. from such source countries.

One way to overcome some of the worst effects of physician shortages, especially in low-income countries, is to ensure they are well distributed to practice in areas where they are most needed and least likely to select—rural areas. We know what works to accomplish this: recruiting health workers with rural roots, offering strong primary and secondary education for their children, and providing good practice information, resources and collegial relations.

The progress on the United Nation’s Millennium Development Goals for 2015 (see undp.org/content/undp/en/home/mdgooverview.html for more information) related to maternal, newborn and child health outcomes has been slow and is heavily reliant on the health work force. We have learned that childbirth emergencies, the leading cause of maternal deaths, can only be managed by competent professional health workers including midwives. Further, childhood immunizations along with the management of childhood illnesses are extremely reliant on health work force staffing levels.

Article XIII of the 1948 Universal Declaration of Human Rights asserts “Everyone has the right to leave any country.” This particular right ensures that physicians can rightfully move from one country to another. Sometimes the rights of physicians to move clash


tions General Assembly resolution 217 A (III); 1948.
with the rights of populations left behind to enjoy full health. That makes this a challenging and interesting area of discussion and policymaking. There are no obvious black and white or right and wrong answers. Despite Immanuel Kant’s groundbreaking ethical assertion in 1784 that common ownership of the earth entitles world citizens the right to free movement, it would be ideal if the majority of people were content in their own countries so that few would permanently migrate anyway.\(^3\) Making well-educated people content to live in poor countries, however, is a tall order and will require worldwide efforts to eradicate poverty, poor working conditions, structural inequities and other stubborn problems.

Table: Emigration factors for countries in eight regions of the world\(^3\)

<table>
<thead>
<tr>
<th>Region and source country</th>
<th>Location of physician’s practice</th>
<th>Emigration factor*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>East Asia and the Pacific</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Zealand</td>
<td>2,483 8,491</td>
<td>22.6</td>
</tr>
<tr>
<td>Philippines</td>
<td>18,303 91,408</td>
<td>16.7</td>
</tr>
<tr>
<td>Singapore</td>
<td>750 5,747</td>
<td>11.5</td>
</tr>
<tr>
<td>Thailand</td>
<td>1,562 18,140</td>
<td>7.9</td>
</tr>
<tr>
<td>South Korea</td>
<td>4,455 84,611</td>
<td>5.0</td>
</tr>
<tr>
<td>Australia</td>
<td>2,263 54,212</td>
<td>4.0</td>
</tr>
<tr>
<td><strong>Europe and Central Asia</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ireland</td>
<td>6,423 9,166</td>
<td>41.2</td>
</tr>
<tr>
<td>Malta</td>
<td>204 1,144</td>
<td>15.1</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>10,838 138,667</td>
<td>7.2</td>
</tr>
<tr>
<td>Romania</td>
<td>2,562 42,339</td>
<td>5.7</td>
</tr>
<tr>
<td>Hungary</td>
<td>1,367 31,768</td>
<td>4.1</td>
</tr>
<tr>
<td>Greece</td>
<td>1,987 47,944</td>
<td>4.0</td>
</tr>
<tr>
<td><strong>Caribbean</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jamaica</td>
<td>1,589 2,253</td>
<td>41.4</td>
</tr>
<tr>
<td>Haiti</td>
<td>1,067 1,949</td>
<td>35.4</td>
</tr>
<tr>
<td>Dominican Republic</td>
<td>3,262 15,670</td>
<td>17.2</td>
</tr>
<tr>
<td>Cuba</td>
<td>2,069 66,567</td>
<td>3.0</td>
</tr>
<tr>
<td>Trinidad and Tobago</td>
<td>23 1,004</td>
<td>2.2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Region</th>
<th>Recipient country† source country no. of physicians</th>
<th>Emigration factor*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>North America</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Canada</td>
<td>9,105 68,096</td>
<td>11.8</td>
</tr>
<tr>
<td>Mexico</td>
<td>4,741 172,266</td>
<td>2.7</td>
</tr>
<tr>
<td>United States</td>
<td>673 836,036</td>
<td>0.1</td>
</tr>
<tr>
<td><strong>Central and South America</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peru</td>
<td>1,631 29,799</td>
<td>5.2</td>
</tr>
<tr>
<td>Bolivia</td>
<td>305 6,220</td>
<td>4.7</td>
</tr>
<tr>
<td>Guatemala</td>
<td>472 9,965</td>
<td>4.5</td>
</tr>
<tr>
<td>Panama</td>
<td>229 4,942</td>
<td>4.4</td>
</tr>
<tr>
<td>Costa Rica</td>
<td>304 6,788</td>
<td>4.3</td>
</tr>
<tr>
<td>Colombia</td>
<td>2,464 58,761</td>
<td>4.0</td>
</tr>
<tr>
<td><strong>Middle East and North Africa</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lebanon</td>
<td>2,749 11,505</td>
<td>19.3</td>
</tr>
<tr>
<td>Iraq</td>
<td>2,327 12,955</td>
<td>15.2</td>
</tr>
<tr>
<td>Syria</td>
<td>3,577 23,742</td>
<td>13.1</td>
</tr>
<tr>
<td>Libya</td>
<td>624 6,371</td>
<td>8.9</td>
</tr>
<tr>
<td>Israel</td>
<td>1,959 24,140</td>
<td>7.5</td>
</tr>
<tr>
<td>Jordan</td>
<td>732 10,623</td>
<td>6.4</td>
</tr>
<tr>
<td><strong>Indian Subcontinent</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>3,027 7,963</td>
<td>27.5</td>
</tr>
<tr>
<td>Pakistan</td>
<td>12,813 96,900</td>
<td>11.7</td>
</tr>
<tr>
<td>India</td>
<td>59,523 503,900</td>
<td>10.6</td>
</tr>
<tr>
<td>Myanmar</td>
<td>1,545 14,356</td>
<td>9.7</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>1,718 32,498</td>
<td>5.0</td>
</tr>
<tr>
<td>Nepal</td>
<td>54 1,259</td>
<td>4.1</td>
</tr>
<tr>
<td><strong>Sub-Saharan Africa</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ghana</td>
<td>791 1,842</td>
<td>30.0</td>
</tr>
<tr>
<td>South Africa</td>
<td>6,993 30,740</td>
<td>18.5</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>359 1,971</td>
<td>15.4</td>
</tr>
<tr>
<td>Uganda</td>
<td>195 1,175</td>
<td>14.2</td>
</tr>
<tr>
<td>Nigeria</td>
<td>4,053 30,885</td>
<td>11.6</td>
</tr>
<tr>
<td>Sudan</td>
<td>622 4,973</td>
<td>11.1</td>
</tr>
</tbody>
</table>

* The emigration factor was computed as \[\frac{A}{A+B} \times 100\], where A is the number of physicians from a source country practicing in the recipient countries and B is the total number of physicians practicing in the source country.

† The recipient countries are the United States, the United Kingdom, Canada, and Australia.


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.

The numbers are those from the most recent years for which data were available.  

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Gap-filling or safety-net role

Gap-filling or safety-net roles are unique positions that are often filled by international medical graduates (IMGs) in the U.S. health care delivery system. This phenomenon refers to the tendency of IMGs to enter specialties and practice in areas that U.S. medical graduates (USMGs) avoid. However, there is considerable controversy about the gap-filling role.

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.1 Mick and others used distributional differences to compare IMGs and USMGs along these four parameters:

1. Infant mortality rate
2. Socioeconomic status
3. Proportion nonwhite population
4. 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.2

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.3 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 socioeconomic status score
- A per capita income of $16,800
- A nonwhite population of greater than 12.5 percent
- A 65+ population greater than 14.9 percent
- A designation as a partial or full health professions shortage
- A nonmetropolitan 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 (GAO) report that looked at the role of exchange visitor (EV) physicians in American medicine (GAO, 1996).4 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 professional shortage area (HPSA). This visa waiver route has become a major source of physicians in rural and other HPSAs in the United States.

The administrators of health care facilities in these HPSAs 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 (2000) found that when comparing the post-residency career plans for IMGs and USMGs,

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IMGs holding temporary visas are more likely than other IMGs to practice in health profession shortage areas.5 Baers and others found that IMGs constitute a greater percentage of the primary care physician population in rural areas with physician shortages than in rural areas without physician shortages.6 However, they also found that there was substantial interstate variation in the extent to which IMGs practice in rural, underserved areas. Mick and others7 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 (1999) found that IMGS worked longer hours, worked more frequently in the public sector and treated a higher proportion of patients with psychotic disorders.8 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 (1995) believe that IMGs locate their office-based practices similarly to USMGs with a slight IMG overrepresentation in the most densely populated counties and a slight under representation in the nonmetropolitan counties.9 They add 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.10

Whitcomb and others (1995) determined the impact of limiting IMGS participation in graduate medical education (GME) to the delivery of hospital care to the poor.11 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 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.12

In a study looking at the characteristics of patients cared for by IMGS, Hing and Lin (2009) 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).13

Table 10
Percentage of office visits to USMGs and IMGs by patient race and ethnicity

Figure 1. Percentage of office visits to U.S. medical graduates and international medical graduates by patient race and ethnicity

![Percentage of office visits to USMGs and IMGs by patient race and ethnicity](image)

Statistically significant difference between U.S. medical graduate and international medical graduate office visits.

Table 11
Percentage of office visits to USMGs and IMGs by patients' primary expected sources of payment

Figure 2. Percentage of office visits to U.S. medical graduates and international medical graduates by patients' primary expected sources of payment

![Percentage of office visits to USMGs and IMGs by patients' primary expected sources of payment](image)

Statistically significant difference between U.S. medical graduate and international medical graduate office visits.
The evidence that IMGs cause surplus suffers from several methodological issues. According to Mick,14 “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.” These gap-filling studies examine work force shortfalls and have consistently shown that IMGs redress physician shortages in health professional shortage areas. 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 was 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 lacks 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 Institute of Medicine (IOM) found it necessary to redefine its meaning.15 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 most heavily recruited specialty. The physician recruiting company reported an 18 percent increase in family practice 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 the prior 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.”

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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 their 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 are seeking a better quality of life and improved medical care elsewhere.

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 validates 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. 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 the positions were taken by IMGs. 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.”

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 typically 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 is 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 work force 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 is 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.


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 workforce. “The sum total of their intellectual contributions is enormous,” says David Ward, president of the American Council on Education. Federal bodies like the National Science Board also value the top-notch talent of foreign scientists—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 the United States; they also often assume positions of leadership in academic departments by leveraging their PhD credentials.

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 countries and have initiated or become involved in medical missions serving their homeland.

Immigration

In 2011, out of 30,300 IMGs, 5921 (19.5 percent) were native U.S. citizens; 11.9 percent (3,612) were naturalized U.S. citizens; 17.8 percent (5,382) were permanent residents; 15.3 percent (4,634) were on H-1, H-1B, H-2 visas; 16.7 percent (5,053) were on J-1 visas; 0.2 percent (60) were immigrant refugees, and another 18.4 percent (5,564) 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 increased while the number of IMGs who were on a temporary visa 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.18

The American Medical Association (AMA) International Medical Graduates (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 34,000 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 website (ama-assn.org/go/imgs) as a networking and cultural resource for its members and new immigrants to the United States.

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Sabesan Karuppiah, MD, MPH, delegate
Ved Gossain, MD, alternate delegate
Ronit Ben Abraham Katz, MD, member-at-large
Rajendra Seth, MD, member-at-large
Andres Deik, MD, resident/fellow

AMA-IMG services staff
J. Mori Johnson, MA, director
Carolyn Carter-Ellis, MBA, policy analyst

State medical societies with IMG sections
The following state and specialty IMG sections elect leadership and hold regular membership meetings. Visit the AMA-IMG website at ama-assn.org/go/imgs for more information on these sections and other state medical societies.
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 New Jersey
Medical Society of the State of New York
Medical Society of Virginia (inactive)
Nebraska Medical Association
Oklahoma State Medical Society
Pennsylvania Medical Society
Texas Medical Association

IMG committees:
American Psychiatric Association (Arlington, Va.)
American Academy of Family Physicians (Leawood, Kan.)
American College of Physicians
American Society of Internal Medicine
American Academy of Pediatrics
Recommendations

The American Medical Association International Medical Graduates (IMG) Section Governing Council proposes the following recommendations:

Work force

1. The United States is in the throws of an acute physician shortage caused by demographic changes, changes in physician work effort, increased demand for physician services caused by health care reform, among other reasons. One way to address this shortage is to permit an increase in graduate medical education (GME) positions by lifting the cap on their expansion. The IMG section strongly endorses the stated positions by the AMA and the AAMC on this issue.

2. The mechanism being used to address the shortage of physicians is to increase domestic output of physicians. Given the fixed number of GME positions, solely depending on domestic increases will exclude IMGs from GME, which will have an adverse impact on patient populations that traditionally depend on IMGs. It is imperative that the AMA and the AAMC lobby for the removal of GME caps and expand GME positions by creating alternative funding mechanisms, reallocating GME positions and stipends.

3. Explore accrediting and recognizing international GME programs outside the United States/Canada in order for IMGs to enter and exit residencies more efficiently.

4. Launch a strategic grassroots campaign to inform members of Congress and the U.S. Senate in IMG-rich states (power states) about the physician shortage, IMG contributions and visa issues that will affect their constituencies both positively and negatively.

5. Work with the Council on Medical Education on work force and IMG issues.

6. Create a new societal obligation for ALL medical students and residents to serve in a shortage area or underserved community for two years.

Licensure parity

7. Continue to collaborate with and support the Federation of State Medical Boards (FSMB) efforts to develop guidelines for uniform licensure requirements for USMGs and IMGs alike to be applied by individual state medical boards.

8. Encourage IMGs to use the Federation Credentials Verification Service (FCVS) as a standard, primary source verification for their medical education to facilitate their ability to obtain a medical license from state medical boards.

9. Encourage all state medical licensing boards to utilize the International Medical Education Directory (IMED) to verify medical school credentials and avoid creating arbitrary lists of approved and unapproved medical schools.

10. 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.

11. Encourage state medical boards to collect practice data information from physicians during the licensure renewal process. This data will be helpful in accurate work force planning and policies.


Visa issues

13. 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.

14. Congress should increase the number of J-1 visa waiver positions (currently 30 per state) especially in states with the greatest projected shortages.

15. Lobby for the creation of an “MD visa” as a separate visa classification for physicians.

Graduate medical education

16. Advocate for equal consideration for IMG and USMG residency acceptance. Residency programs must consider IMG applications equivalent to the USMG applications by using the same evaluation criteria. It is imperative to have transparency and nondiscrimination in the selection process.

17. Study the National Resident Match Program (NRMP) All-In Policy’s impact on IMGs.
18. Increase the number of GME positions so ECFMG-certified IMGs who are waiting for residency positions can enter the physician workforce immediately. One alternative funding mechanism suggestion is to reevaluate residents’ stipends and length of training.

19. 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.

20. 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 and the patients they serve.

21. Recent data revealed that IMGs commonly have higher USMLE scores and provide quality medical care on par with that of their USMG colleagues. Encourage and incentivize GME program directors and residents/fellows to provide a more welcoming and appreciative culture towards IMGs and minorities. Diversity within a GME program is a mark of excellence for the profession and the diverse patient population it serves.

22. Explore research funding as one way to fund GME positions.

23. Acculturation programs and resident/fellow orientations should be created by local medical societies and GME program directors. The AMA-IMG Section and the ECFMG (via ECHO) should serve as a clearinghouse for these resources.

24. Reach out to USIMGs to present a uniform voice and messaging about GME.

25. Shift some of our GME programs to other countries.

**Observerships**

27. 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. The AMA-IMG Section’s Observership Guide at ama-assn.org/go/observership can be used as a resource.

28. Create positions in hospitals and use unemployed, qualified IMGs who are awaiting residency to help hospitals with performance improvement and safety projects that can improve the overall quality of hospital care.

**Global physician migration**

29. Encourage more study and analysis on global physician migration patterns 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.

30. Explore collaborations with host countries in order to create partnerships on undergraduate and graduate medical education.

**Scholarly research**

26. Sponsor a research competition for IMG studies and offer substantial prize money.
In this discussion paper, the AMA-IMG Section Governing Council has examined numerous aspects concerning the presence of IMGs in the U.S. physician work force. The IMG story—including the challenges IMGs have faced and continue to face—has been outlined. While the presence of IMGs is beset with controversies, biases and misconceptions, we feel we have presented data to clarify and address many of these issues.

Historically, IMGs have served patients in the United States in the highest professional manner, making up one-quarter (25.3 percent) of the physician work force and more than one-quarter (27.8 percent) of resident physicians. IMGs often 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 points:

• 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 this country
• IMGs generally go through a unique set of challenges in getting a residency position, securing legal immigration and finding the right job

We will continue to monitor and study IMG issues, as well as revise this discussion paper every other year. Please send an email to img@ama-assn.org with any comments or questions.

Thank you for your interest.