

International Medical Graduates in the U.S. Workforce

A discussion paper

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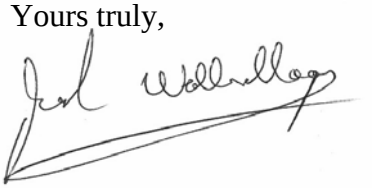
Dear Doctor,

Your 2005-2006 AMA IMG Governing Council is pleased to provide you with a revised copy of *International Medical Graduates in the U.S. Physician Workforce: A Discussion Paper* for your use and information. The background of this document begins with Dr. Rajam Ramamurthy, 2004-2005 AMA IMG Governing Council Chair. Her governing council wanted to address the issues related to the IMGs role in the U.S. physician workforce by creating a document that would be based on relevant statistics and original editorial contributions. Your 2005-2006 AMA IMG Governing Council decided to build upon that governing council's work and transform the document into a discussion paper that would be updated annually by that year's IMG Governing Council.

The purpose of this document is to spark constructive and frank dialogue among IMGs and between IMGs and non-IMGs. Since this document will be updated annually, we welcome your feedback and suggestions for next year's edition. If you have an idea for an additional section or some additional articles that should be included, please forward that information to our AMA IMG Staff at img@ama-assn.org or call 312-464-5678.

I hope you find this discussion paper useful. Feel free to request additional copies for your physician colleagues, medical students, and residents by contacting AMA staff at the aforementioned e-mail address or phone number. Please get in involved in your AMA IMG Section because together we are stronger. Visit our Web site www.ama-assn.org/go/imgs to learn how to contribute to our work.

Yours truly,



Bernd A. Wollschlaeger, MD
Chair, 2005-2006 AMA IMG Governing Council
info@miamihealth.com

Table of Contents

Preface

In late 2003 through June 2004, the IMG Section Governing Council took on the enormous task of addressing an issue of great impact and importance to the IMG community: the U.S. physician workforce debate. In preparation for the 2004 AMA-IMG Section Annual Meeting in Chicago, the IMG Governing Council compiled this document for distribution using the resources of many individuals. The authors include IMG Governing Council members Zoltan Gombos, MD, Marie-Claude Rigaud, MD, Shailendra Vaidya, MD, and Bernd Wollschlaeger, MD. Chief contributor and editor Rajam Ramamurthy, MD, served as chair of the IMG Governing Council 2004-2005. Ashish Bajaj, former Director of the AMA Department of IMG Services assisted in collecting and gathering data.

We thank the individuals who have given valuable suggestions and enriched the final product released one year later at the 2006 AMA-IMG Section Annual Meeting. We hope to continue to add to this document which will be a historic chronicle of physician migration and its psychological, social, and economic impact on the IMG community.

Introduction

Predicting the physician workforce in the United States has been a contentious issue dating as far back as 1910. In 1992 the massive oversupply of physicians anticipated for the nation by 2000 were not only inaccurate, but the opposite occurred; an undersupply of physicians, particularly in certain specialties resulted. The potential consequences for miscalculations are serious and have a great and lasting impact on the delivery of health care in America. One in four physicians in the U.S. are international medical graduates (IMGs). A disproportionate share of health care in the medically underserved areas is provided by these physicians. Nevertheless, at any given time there are 5,000 – 7,000 IMG physicians who are unemployed in the U.S.

In this discussion paper, there will be a greater understanding for the vital role that IMG physicians play in health care delivery to the people of this country. This paper also will evaluate the deterrents to non-utilization of a massive pool of qualified physicians in the face of a physician shortage and provide possible solutions to the constant struggle IMG physicians face in practicing their profession.

The history of physician workforce and the role of IMGs

The Flexner Report written in 1910 was a sweeping indictment of the quality of medical education in the U.S. that resulted in the closure of many inferior medical schools. In the 1930s, the physician to population ratio decreased from 173 per 100,000 to 125 per 100,000. Following World War II with improved living conditions there was a demand for better health care that was not addressed until 1959 when the U.S. Surgeon General's consultant group on Medical Education released the Bane Report, which predicted that the

U.S. would suffer a 40,000 physician deficit by the mid 1970s. As a result of the Bane Report, from 1965 to today, the number of allopathic and osteopathic medical schools increased from 93 to 140, an increase of 52%. The number of graduates increased from 7,000 to 16,950 (+142%) by 1981.

As early as the 1940s, legislation facilitated foreign-trained physicians' entry into the U.S. In 1946 the Fulbright Amendments (PL 79-584) authorized international medical education. Interestingly, this also included cultural exchange. The U.S. Information and Education Act of 1948 (Smith-Mundt Act PL 80-402) established the exchange visitor (J-1 Visa) program. The U.S. exchange visitor program, implemented in 1949, allowed any foreign student to enroll in a U.S. government-approved program and remain until the program completion. During the 1950s the need for a formal program of evaluation of "Foreign Medical Graduates" intensified due to the explosive growth in the demand for health care services, and a greater dependence on physicians in training to provide medical care. In 1954 the Cooperating Committee of Foreign Medical Graduates (CCFMG) was formed by the Association of American Medical Colleges (AAMC), American Heart Association (AHA) the American Medical Association, (AMA), and Federation of State Medical Boards (FSMB) as a first step toward filling this need. In exploring methodologies that would uniformly evaluate the qualifications of foreign medical graduates, CCFMG recommended validating medical education credentials, and creating examinations to evaluate skills in the medical sciences and English language proficiency.

In 1956, the private, non-profit organization, Evaluation Services for Foreign Medical Graduates (ESFMG) was formed and later changed its name to Educational Commission for Foreign Medical Graduates (ECFMG). With the help of National Board of Medical Examiners (NBME) a medical science examination and English language proficiency test was developed. In March 1958, ECFMG administered the first examination in 17 centers to 298 international medical graduates. It was the function of another body, the Commission on Foreign Medical Graduates to monitor the visa sponsorship of medical exchange visitors in the U.S. and to conduct research on international medical graduates. In 1965, the Immigration Act (PL 89-236) abolished national quotas and gave preference to individuals with occupations designated "in short supply" by the 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 that monitored issuance of visas merged to ultimately become the Educational Commission for Foreign Medical Graduates (ECFMG).

The welcoming climate for IMGs began changing in the mid-1970s. The Health Professions Education Assistance Act (HPEA) of 1976 (PL 94-484) declared an end to the physician shortage. IMGs were no longer given preferential visas that were meant for professions with shortages. As a result, examinations for IMGs began to be administered. The HPEA established the Visa Qualifying Exam (VQE) which was similar to Part I & II of the National Board of Medical Examiners (NBME), the examination required for

licensure of U.S. Medical Graduates (USMGs). The VQE was replaced by Foreign Medical Graduates Examination in the Medical Sciences (FEMGEMS) in 1984.

In 1989, IMG physicians began taking the National Board Part I & II Examinations and in 1994 the United States Medical Licensing Examination (USMLE Part I & II) became the exam for all physicians, IMGs and USMGs, for licensure in the U.S. While completion of USMLE Step 1 & 2 along with the Clinical Skills Exam is a requirement for IMGs to enter graduate medical training, it was initially not required for USMGs. Residency programs have different requirements regarding completion of USMLE exams for USMGs. In 1986, the ECFMG began to verify the medical education credentials of its applicants directly with the medical schools.

Currently, the ECFMG verifies the medical school diploma from more than 1,700 schools worldwide and has developed unparalleled expertise in the area of credentialing IMGs. Since 2000, the ECFMG has made its expertise available to medical licensing authorities. In 1999, the ECFMG along with NBME developed computer-based testing for the USMLE Step I & II. While the ECFMG continues to credential applicants, the tests are delivered by a private company, Thomson Learning Inc., through its worldwide network.

Enabling IMGs to practice in the U.S. has always provided a beacon of hope for physicians worldwide who want to receive advanced training and excel beyond what their country provides. This opportunity allows for more education, a greater ability to provide for themselves and their families and greater hope to live fuller lives in a safe and peaceful environment.

The growth of the IMG workforce

In 1983, generous support for graduate medical education positions led to an influx of IMGs, while residency slots grew 40 percent over the annual number of U.S. graduates. In 1991, the Council on Graduate Medical Examination (COGME) predicted a surplus of 80,000 physicians by 2000 and a rise of 24% by 2010. COGME also recommended capping the numbers of residency positions to 10% over the annual number of U.S. graduates. This appeared to be a direct attempt to control the influx of IMGs. In 2001-2002, there were 100,958 graduates in ACGME accredited residency training programs; 26% were from non-U.S. schools.

U.S. and IMG physician population overview

Number of Physicians in U.S	794,893
Number of IMG Physicians	185,234 (from 127 countries)
% of IMG Physicians in U.S.	23.3%
% of IMG in Residency Programs	24%
% of IMGs in primary care	44%
% of USMGs in primary care	33%

% of IMGs in patient care	85%
% of IMGs in academics	5%

Source: 2005 AMA Membership Fact Book

From 1970 to 1994, the U.S. physician population increased by 104.9%, over 350,000 physicians. IMGs accounted for 27.8% of that growth comprising 97,359 physicians. In that 24-year period USMGs increased by 91.4%, while IMGs grew by 170.2%. A full decade later (2004), despite barriers, the IMG physician population has kept pace with USMG physicians, increasing over 50%.

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

1. India - 24.0% (44,585)
2. Philippines - 10.6% (19,656)
3. Mexico - 6.7% (12,448)
4. Pakistan - 5.7% (10,689)
5. Dominican Republic - 3.8% (7,147)
6. Russia - 2.9% (5,343)
7. Grenada - 2.8% (5,196)
8. Egypt - 2.6% (4,884)
9. Italy - 2.5% (4,755)
10. South Korea - 2.5% (4,676)
11. China - 2.4% (4,523)
12. Iran - 2.3% (4,355)
13. Spain - 2.3% (4,332)
14. Germany - 2.3% (4,269)
15. Dominica - 2.1% (4,050)
16. Syria - 1.8% (3,491)
17. Israel - 1.6% (3,098)
18. Colombia 1.6% (3,095)
19. England- 1.6% (3,071)
20. Lebanon 1.5% (2,871)

Source: 2005 AMA Membership Fact Book

Top 20 U.S. states IMGs practice - number of IMG practicing physicians in state (% of state physician workforce)

1. New York	25,603	(38.6%)	8. Ohio	7,623	(24.4%)
2. California	21,426	(22.6%)	9. Michigan	7,021	(26.7%)
3. Florida	16,056	(33.6%)	10. Maryland	5,768	(26.9%)
4. New Jersey	10,904	(39.6%)	11. Massachusetts	5,432	(26.7%)
5. Illinois	10,609	(32.3%)	12. Virginia	3,954	(20.0%)
6. Texas	10,478	(22.4%)	13. Georgia	3,386	(17.5%)
7. Pennsylvania	7,877	(20.4%)	14. Connecticut	3,022	(25.1%)

15. Indiana	2,656	(19.2%)	19. Arizona	2,414	(18.0%)
16. North Carolina	2,544	(12.1%)	20. Tennessee	2,185	(14.5%)
17. Missouri	2,509	(17.8%)			
18. Wisconsin	2,312	(16.2%)			

Source: 2005 AMA Membership Fact Book

IMG contributions to the delivery of health care in the U.S.

IMGs have, and continue to make, significant contributions to the delivery of health care in the United States. Their expertise covers a wide range of specialty areas. In most specialties, such contributions are multifaceted, and extend beyond mere numbers. There is growing recognition that IMGs are a valuable resource for their unique skills and experience.

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 (i.e., The American Board of Anesthesiology), or do not record that information (i.e., The American Board of Allergy and Immunology). However, data collected by certain medical specialties validate the claim that IMGs represent a significant portion of physicians providing care in various sub-specialties.

The American Board of Physical Medicine and Rehabilitation identified 2,181 IMGs certified as Diplomates since 1947. This compares to 5,509 USMGs. Reportedly, there are 8,659 IMG Diplomates certified by the American Board of Family Medicine, which represents 12.6% of the total membership. The American Board of Abdominal Surgery lists 3,170 IMGs as active members, for a total of 15.4%. The American Board of Colon and Rectal Surgery reports that 5.4% of its active diplomates are IMGs. IMGs are especially well represented in the field of psychiatry where 10,121 or 28% of the membership of the American Psychiatric Association are IMGs. Of these, 7,151 were born outside the United States. Currently, there is growing concern among pediatric and internal medicine subspecialties because of an inability to recruit U.S. medical school graduates into their programs (Salsberg).

Although the numbers of IMGs are impressive, there are two unique areas where IMGs contributions to the delivery of health care are unsurpassed:

- IMGs are more willing than U.S. IMGs or U.S. medical school graduates to practice in remote, rural areas (through J-1 visa waiver requirements)
- IMGs are more likely to possess innate skills to better understand cross-cultural issues among their patients.

These two assertions are described in greater detail below:

Willingness to practice in underserved areas - IMGs with temporary visas practice in medically underserved areas at a greater rate than USMGs. IMGs with a different status are less likely to go into underserved areas (Salsberg). However, many IMGs are more amenable than their U.S. counterparts to establish a practice in remote areas, inner cities and small rural towns. As a result, IMGs provide health care for underserved populations of these towns and areas. For instance, in a small town in eastern Ohio, IMGs are the main providers for pediatrics and obstetric needs. They are well respected in the community, integrate with the local social and political life and enrich the community with their cultural and family values. There are also a high number of "physician couples" among IMGs which often provides two physicians to the community. (Source: National Resident Matching Program)

Sensitivity to cross-cultural issues - 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 the natural openness and 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 and gynecology. One example is a program developed in Dearborn, Michigan 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 ever-increasingly diverse U.S. population.

Primary specialty of IMGs – percentage in specialty (number of IMG physicians)

Internal Medicine	30.1% (57,675)
Anesthesiology	29.6% (12,404)
Psychiatry	29.5% (14,510)
Pediatrics	28.3% (18,831)
Other	22.3% (27,193)
Family Medicine	17.3% (19,303)
Obstetrics/Gynecology	16.6% (7,408)
Radiology	15.1% (5,822)
General Surgery	13.8% (17,362)

Source: 2005 AMA Membership Fact Book

IMGs in primary care

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% of the population lack a consistent provider of health care. The public health infrastructure remains weak and mental health care struggles for recognition and parity. Furthermore, the health care delivery system is highly fragmented when it needs to be seamlessly integrated.

As a nation, the U.S. 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 U.S. is in desperate need for 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. 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 2003 Survey of Hospital Physician Recruitment Trends, the recent survey published online by Merritt, Hawkins & Associates, showed family medicine as the fourth most heavily recruited specialty. The physician recruiting company reported a 35 percent increase in family practice recruitment contracts, with 45 percent of all hospitals actively recruiting family doctors. That demand is likely to increase, particularly if Congress agrees with the Bush administration's plan to expand the nation's community health centers by 40 new sites for a total of 1,200 serving 6.1 million patients by next year. Those additional centers will depend largely on family physicians for their medical staff. 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 2005 resident match showed a decrease for the eighth consecutive year in the number of U.S. seniors from allopathic medical schools heading into family medicine. In internal medicine, the number of U.S seniors held steady, compared with last year, as did obstetrics-gynecology, while pediatrics saw a small upswing. According to Perry Pugno, M.D, M.P.H., director of AAFP's 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. seniors selecting family medicine declined by 1,047. Currently, three out of five first year residents in family medicine are IMGs."

Residency positions in primary care 1994-2005

	2005	2004	2003	2002	2001	2000	1999	1998	1997	1996	1995	1994
Positions Offered	2,782	2,884	2,940	2,983	3,096	3,206	3,265	3,293	3,262	3,137	2,941	2,774
Positions Filled	2,292	2,273	2,239	2,357	2,363	2,603	2,697	2,814	2,905	2,840	2,563	2,293
% Filled	82.4%	78.8%	76.2%	79.0%	76.3%	81.2%	82.6%	85.5%	89.1%	90.5%	87.1%	82.7%
Filled US Seniors	1,132	1,198	1,234	1,413	1,516	1,833	2,024	2,179	2,340	2,276	2,081	1,850
% Filled US Seniors	40.7%	41.5%	42.0%	47.4%	49.0%	57.2%	62.0%	66.2%	71.7%	72.6%	70.8%	66.7%

Source: 2005 NRMP

The result of this disturbing trend is a health care delivery system that is severely compromised in its ability to meet the growing 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 and civic leaders are concerned that visa restrictions and limited J-1 visa waivers may jeopardize the fragile health care delivery system. The economic ripple effects are predictable because companies will not relocate in areas with limited access to medical care for their employees and existing business entities may lose qualified employees because they seek a better quality of life and improved medical care elsewhere.

IMGs are an indispensable part of a functional primary health care delivery system. The U.S. needs to make every effort to attract and retain qualified and skilled candidates for this challenging field of medicine.

AMA-IMG Section: IMG physicians in organized medicine

Here is a brief historical overview of the AMA and the international medical graduate community.

1989 - 1996: The Advisory Committee on International Medical Graduates
This Advisory Committee, consisting of nine AMA members appointed by the AMA Board of Trustees and one IMG resident physician recommended by the Resident

Physicians Section, was first chartered in 1989 and rechartered thereafter until June 1996. Its responsibilities included assuring communication on IMG issues with state licensing boards, national ethnic medical organizations, the ECFMG, COGME, and other related groups; advising the AMA staff and Board of Trustees on IMG issues; providing regular progress reports to the Board of Trustees and the AMA House of Delegates; promoting AMA membership among IMGs; and advocating for equal opportunities and requirements for all international medical graduates either in residency training or in practice in the United States. The IMG advocacy function of this committee was transferred to the IMG Caucus Steering Committee in June 1996.

1996 - 1997: The International Medical Graduates Caucus
The IMG Caucus had been in formation for two years, as a result of a direct charge to the IMG Advisory Committee, from the AMA Board of Trustees, to create a mechanism by which the issues and concerns of IMGs would be more adequately addressed within the structure of the AMA. At an IMG Caucus meeting in June 1995, an IMG Caucus Steering Committee, composed of seven members, was elected from the Caucus membership. The Steering Committee spent considerable time defining a structure that would be broadly representative and effective in an IMG advocacy role. It needed to also be in a position to assume the duties and responsibilities of the IMG Advisory Committee when its charter expired in June 1996. The transfer of duties from the IMG Advisory Committee to the IMG Caucus Steering Committee occurred on schedule in June 1996. The IMG Caucus held a plenary session in June, with over 80 IMGs attending and participating.

1997 - Present: The International Medical Graduates Section
At the IMG Caucus meeting in June 1996, a firm decision was made to petition the AMA House of Delegates for the creation of an IMG Section within the framework of the AMA. It also directed the IMG Caucus Steering Committee to appoint an IMG Section Strategy Team to implement this recommendation and to refine a set of rules of procedure that was proposed by the IMG Advisory Committee. An IMG Section provides IMGs with a seat in the AMA House of Delegates and a specific role in the governance and policy-making process of the AMA.

2005 - AMA-IMG Section Bylaws Change
The AMA Board of Trustees supported the IMG Section Governing Council's recommendation to amend the AMA bylaws so that all IMG members of the AMA automatically become members of the IMG Section, increasing the Section's membership to over 37,000 physicians.

The following nine physicians have served as Chair of the AMA-IMG Section Governing Council:

Busharat Ahmad, MD
Apparao Mukkamala, MD
George Thomas, MD
Clarita Herrera, MD
Miguel Machado, MD
Geetha Jayaram, MD
Subramanyan Jayasankar, MD
Rajam Ramamurthy, MD
Bernd Wollschlaeger, MD

After their tenure, these physicians continue to serve in leadership positions in organized medicine. Busharat Ahmad, MD is serving his second term on the Board of Directors of the ECFMG; Subramanyan Jaysankar, MD was recently appointed to the AMA House of Delegates by the American Association of Orthopedic Surgeons; and Apparao Mukkamala, MD, serves on the AMA Council on Legislation. These are just a few examples of AMA-IMG leaders whose skills and dedication strengthen organized medicine in their specialty, region, state, and national levels.

Look at the roster of any county, state, national or specialty medical society and there are countless IMG physicians serving as presidents, vice-presidents and officers at every level. Their contributions are a proud testament to the IMG physician community.

IMG contributions in academic medicine and research

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

Unless current retirement rates change dramatically, the Science and Engineering (S& E) workforce, 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 40–44 age group is nearly four times as large as the 60–64 age group. Without changes in degree output, retirement behavior, or immigration, these figures imply that the U.S. S & E workforce will continue to grow, but at a slower rate, and that the average age of the workforce will increase over the next two decades.

Even though a greater proportion of U.S. citizens enter higher education, our 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 have built stronger post-secondary education systems. Many countries outside the U.S. 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 & Engineering (NS & E). 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 the study, *"Policy Implications of International Graduate Students and Postdoctoral Scholars in the United States."* The findings of this study are listed below:

- Finding 1-1: International students and scholars have advanced U.S. science and engineering (S&E), as evidenced by numbers of patents, publications, Nobel prizes, and other quantitative data.
- Finding 1-2: International graduate students and postdoctoral scholars are integral to the U.S. S&E enterprise. If the flow of these students and scholars were sharply reduced, research and academic work would suffer until an alternative source of talent could be found. There would be a fairly immediate effect in university graduate departments and laboratories and a later cumulative effect on hiring in universities, industry, and government. There is no evidence that modest, gradual changes in the flow would have an adverse effect.
- Finding 1-3: 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.

As Secretary of State Colin Powell stated in 2004 during International Education Week, "The professional partnerships and lifelong friendships that result from international education and exchange help build a foundation of understanding and lasting partnerships. These partnerships are important for a secure, prosperous future, not only for the United States, but also for the world as a whole."

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

From 1981 to 2000, the number of full-time U.S. medical school faculty reported to the AAMC Faculty Roster increased by 86%. 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% in 1981 and 18% in 2000. The representation of IMGs among clinical faculty has been stable (16% - 17% over the past two decades). Meanwhile, IMG faculty as a proportion of basic science faculty gradually increased from 16% in 1981 to 21% in 2000. It is important to emphasize that faculty with M.D. credentials as a percentage of the overall IMG faculty has declined from 74% in 1981 to 65% in 2000, while the proportion of such faculty with Ph.Ds. increased from 15% to 22% over the same period.

As were the physicists who fled Nazi Germany in the 1930s and became crucial to the Manhattan Project, and conductors Sir George Solti or Seiji Ozawa, both giants in American music, 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 such as the National Science Board (NSB) also value the top-

notch talent of foreign scientists, because this “brain gain” has helped ensure the United States’ postwar dominance in science and it is crucial in order to maintaining 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 priorities to U.S. as well as Ph.D. credentials where they often hold leadership positions as chairs of academic departments, such as Abul Abbas. Other examples include world leaders in their field such as David Elder and Nobel Prize Laureates, Eric Kandel and Gunter Blobel. IMG physicians also turn their attention to problems relevant to their home countries-- problems that might otherwise go unknown in the United States.

Barriers: addressing the U.S. physician workforce shortage and maldistribution

In 2003, COGME commissioned Ed Salsberg, executive director of the Center for Health Workforce Studies at the State University of New York, to study health workforce. His findings anticipate a shortage of 85,000 physicians by 2020.

Currently, Medicare spends about $7 billion a year training medical residents. The earlier predictions of physician surplus were based on quantifying tasks (physician visits and procedures) and associated times (expressed as full-time equivalent physician) which was conceptually inaccurate. The same analysts are now using a trend model which takes into account economic expansion, population growth, work effort of physicians, and services provided by non-physician clinicians. In the past, analysis of unmodified population forecasts from the Census Bureau, which have proved to be low, were used. This resulted in predictions of per capita physicians that were excessive. This error accounted for a 25% physician surplus that was predicted earlier. A total output of ten to twelve medical schools would be required to service the population that was omitted in the previous prediction.

It is estimated that the U.S. population will grow from 285 million in 2000 to 325 million in 2010 and 345 million in 2020. By merely taking a head count, the data based on the past 70 years used for analysis indicated that physician supply increased five fold, from 144,000 in 1929 to 772,000 in 2000. This is an increase from 119 physicians per 100,000 population in 1929 to 270 per 100,000 in 2000. This model looks at trends differently, holding that the first time first-year residents are fixed at 23,000 a year (126% of U.S. medical graduates) and that 20% of IMG graduates will return to their countries of origin, as has been the case for the past 10 years. It projects that physicians will increase from 772,000 (270/100K) to 887,300 (283/100K) in 2010. This will reach 964,700 in 2020, but the population will grow faster and the per capita physicians will fall to 280/100K. Add to this the decreased physician effort and the increasing role of non-physician assistance (15% of physician workforce) by 2020 the projected deficit will be 200,000 physicians, a shortage of 20%.

In a recent report on physician workforce, Cooper et. al. state that the last debate about physician shortage continued well into the 1960s and led to the doubling of medical school

slots. It was another 15 years before physicians were available to the public. They further state that while the recruitment of IMGs could reduce the response time, the wisdom of even our current dependency on IMGs has been questioned. To alleviate the problem more than 25 new medical schools would be required over the next decade. If nothing is done other professions will fill the gap and physicians will provide services in even narrower confines of health care.

In a 2001 presentation to the AMA Section on Medical Schools Meeting, concluded that "the nation needs to do a better job at assessing current and future supply and demand by specialty." His observation was that IMGs with temporary visas go into underserved areas at a greater rate than USMGs; other IMGs are less likely than USMGs to go into underserved areas. The "other" IMGs are by far the U.S. citizens who attended medical schools outside of the U.S. or Canada. He also studied the trends in specialization and concluded that "the demand for non-primary care physicians is greater than for primary care physicians, even in New York where 68% of the practicing physicians are specialists. This disparity in demand between primary care and non primary care is growing. More IMG physicians even within the primary care areas like internal medicine and pediatrics sub-specialize, thus providing a vitally needed service."

Opposition to utilizing the IMG workforce

Dr. Fitzhugh Mullan, contributing editor for *Health Affairs* and former director of the Health Resources and Services Administration's Bureau of Health Professions, argues that "rather than relying on foreign medical school graduates to complete residency classes, the United States should increase its output to fill the gap." He continues by stating "the position of medical education ought to be that the product that they train a physician is the standard for health care delivery, and they should without apology produce physicians to meet that need." He also states that by accepting more students into medical schools in the U.S., a workforce is produced that resembles the population. "Foreign doctors from nations with staggering health care needs will be less likely to leave their native countries and practice in the U.S." Dr. Mullen acknowledges that a disproportionate number of IMGs work in underserved rural and urban areas during training and afterwards. In a publication of AAMC, Carl Getto, MD, Chair of COGME, states that "physician workforce is determined by the number of residents trained in the country rather than the number of students who graduate from U.S. medical schools."

The unspoken concern is the quality of medical education of international medical graduates receive. In 2002, 22,230 IMGs were in residency training or clinical fellowships, 4,000 were American citizens, 8,200 were immigrants and permanent U.S. residents, 8,900 were on an exchange visitor visa and planned to return to their country unless the INS granted them a waiver because of a need to provide care to the American public. Over half (approximately 55%) of IMG physicians were American citizens or lawful immigrants. The immigrants are in the country for a multitude of reasons. Most join their spouse or parents who reside in the U.S. Relatively few immigrants are here because of the political situation in their country.

International medical schools

The largest database on medical schools worldwide is the *International Medical Education Directory* (IMED) a web-based resource developed by the Foundation for Advancement of International Medical Education and Research (FAIMER). As of February 2004, *IMED* contains information on 1,858 medical schools worldwide. FAIMER was established in 2000 by ECFMG for the overall purpose of promoting excellence in international medical education. Its activities include the education of educators, i.e., providing educational programs for international medical school faculty to promote the cross-cultural exchange of educational expertise and experiences. FAIMER's goal is to assist international medical schools in program development, setting standards, and evaluation. It also is committed to understanding the impact of physician migration on the functioning of health care systems.

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

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

IMED provides the following information on international medical schools:

- Name of medical school
- University affiliations
- Medical school address and contact information, including Web site address
- Former official names, if applicable
- Medical degree awarded
- Graduation years (calendar years school has been accredited)
- Year instruction commenced
- Language of instruction
- Duration of curriculum
- Entrance examination requirement
- Eligibility of foreign national students
- Total enrollment

In the future, *IMED* will also include information on the accrediting body in the country. These include the ministry of health, ministry of education or a medical council. It will include information on the licensing authority in the country. Information on curriculum content, a period of internship or social/government service that is required for licensure will become available as well.

There are 1,858 medical schools listed in the FAIMER database of which 1,757 (95%) are currently in operation in 165 countries. The remaining 101 (5%) 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 no longer listed individually because it has merged with four other schools. The database provides a full explanation.

International medical schools fall into two categories. (1) The first category comprises schools run by the government or (2) are privately funded that admit only citizens. Admission is often through national competitive exams and it is extremely difficulty to get admission because there are few openings available. For example in India, with a population of 1.3 billion there are 153 medical schools which provide 0.23 seats for 10,000 population, whereas in the U.S. we have 79 seats per 10,000 population. A certain percentage of seats is allotted for minority communities.

In many countries medical schools are patterned after the British system of education and testing and instruction is taught 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 U.S. The faculty are predominately from the U.S., and tend to be former faculty of U.S. medical schools. Clinical training is often in U.S. hospitals which are affiliated with the school. The students take the same board examinations as U.S. medical graduates.

Obtaining a residency in the U.S.

International medical graduates must surmount many hurdles before becoming eligible to apply for residency training in the U.S. ECFMG Certification requires passing the USMLE Step I and the USMLE Step II Clinical Skills (Step 2 CS). IMGs must also achieve a score acceptable to the ECFMG on an English Language proficiency test, such as the Test of English as a Foreign Language (TOEFL).

In the more recently instituted Step 2 Clinical Skills exam, there are three components: Integrated Clinical Encounter (ICE) which involves taking a medical history, conducting a physical exam, and taking patient notes; Communication and Interpersonal Skills (CIS) which involves gathering and sharing information, manner and rapport; and Spoken English Proficiency (SEP) which involves pronunciation and word choice.

Approximately 6% of the IMG candidates fail the ICE and or the SEP, compared to 2% of the LCME candidates. IMG candidates most often fail the communication and

interpersonal skills component whereas the LCME candidates most often fail the ICE component. These figures confirm that language does not pose a major barrier.

IMGs who are neither citizens nor permanent residents of the U.S. must obtain an appropriate visa. This is often a huge hurdle since many IMGs are unable to apply for residency positions because they have to wait for a visa that permits them to work. Due to these constraints, IMGs on the average spend 3 years after they obtain a medical degree to get into GME positions. This often results in enormous financial burdens. U.S. immigration policy has varied from favoring physician immigration in the 1970s, to extreme scrutiny post-September 11, 2001 as many IMGs are currently experiencing.

Once an IMG becomes ECFMG certified, he or she then applies to enter a residency program in the U.S. 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 over 7,800 ACGME accredited residency programs in the U.S. and is available for purchase from the AMA Bookstore. More detailed information on residency programs is available in the AMA Fellowship and Residency Electronic Interactive Database Access System (FREIDA) Online. 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.

The match

Applicants must register by the deadline with the National Resident Matching Program (NRMP), www.nrmp.org., in order to be matched with a hospital residency programs according to the applicant's and the program's ranked preference lists. "Beginning with the 2004 Match, all sponsoring institutions participating in the NRMP Main Match must register and attempt to fill all their positions in the Match except for those specialties or programs participating in other matching program." (NRMP February 2003) It is very important for IMGs to adhere to all the Match deadlines if they wish to participate.

Certain residency programs require applicants to apply through the Electronic Residency Application Service (ERAS), which is administered by the ECFMG for IMGs. Each year approximately 33,000 applicants compete for about 24,000 available residency slots. The NRMP Web site has an "Applicant User Guide" which contains specific information for IMGs. If you have not passed the USMLE by September, you cannot enroll in the NRMP since you will not have the certification required prior to submission of Rank Order Lists (ROL) in mid-January. You may, however, apply for residency positions outside of the Match. If your only remaining requirement is the English exam, you may still participate in the Match.

Generally, application materials consist of a curriculum vitae, a copy of the universal residency application form, a cover letter addressed to each residency program director, evidence of graduation from medical school, ECFMG certification and letters of recommendation from U.S. physicians, along with a one-page personal statement detailing the unique qualifications of the applicant.

While U.S. medical graduates apply to 5-10 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 you send out, the better your chances of receiving an interview and being accepted to a program. Applications should be sent in as early as possible, preferably September or mid-October at the latest. Upon review of the applications, residency program directors invite those applicants in whom they are interested to interview. Approximately 14% of applicants are granted an interview and only 8% 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.

Significant dates in U.S. immigration policy affecting IMGs

- 1933-1948 - European IMGs immigrate as refugees in relatively small numbers.
- 1948 - Exchange visitor program lets IMGs train in the United States. Many stay.
- 1956 - AMA and others create IMG certification system; the ECFMG.
- 1965 - Easily obtainable visas in some specialties attract Third World IMGs.
- 1971 - IMGs get quicker job clearances for permanent residency status.
- 1976 - Congress raises immigration barriers against IMGs.
- 1980 - Federal study recommends IMG limits.
- 1985 - Federal legislation proposed to cut off GME funding for IMGs. Fails.
- 1990s - Steep rise in incoming IMGs attributed to breakup of Soviet Union, changes in licensing exam and new immigration laws.
- 2001 – Attacks on the World Trade Center in New York City
- 2003 – Department of Homeland Security established – imposing stricter immigration policies, particularly in certain areas of the world.
- 2006 – Senate and House bills on reforming immigration policies spark national controversy and debate.

J-1 visas and waivers

The J-1 visa program enables foreign nationals to come to the U.S. to participate in graduate medical education. After completion of education they must return for two years to their home country before applying for permanent resident status. Under exceptional circumstances IMGs may obtain a waiver. The AMA strongly supports continuation of the program and supported the role of the Department of Health and Human Services processing applications. The Conrad 30 Program allows thirty J-1 Visa waivers per state and has very stringent regulations. This program is up for renewal in October 2006.

In October 2004, the U.S. House of Representatives and the U.S. Senate approved bills that extended the program by two years. The bill also exempts sponsoring organizations and their applicants from a cap on H-1B work visas, which were used by the majority of IMGs seeking work in the U.S.

However, since 2003, due to enhanced scrutiny for national security reasons, IMGs from certain countries have face difficulties obtaining J-1 visas. There is a decreasing number seeking ECFMG certification.

Over the past two years, the AMA-IMG Section has passed several resolutions addressing the expeditious processing of J-1 visas and similar undue immigration constraints on IMGs. It is the official policy of the AMA that the AMA lobby relevant federal agencies to seek legislation to assist IMGs in both the education and practice of medicine in the U.S.

Recommendations

Historically, IMG physicians have served people of this country in the highest professional manner as nearly one-quarter (23.5%) of the physician workforce in the country and one-quarter of the residents in training.

The AMA-IMG Section argues strongly that:

- IMGs are more likely to serve in medically underserved areas.
- IMGs comprise over 30% of the workforce in primary care specialties.
- IMGs comprise close to 40% of the physician workforce in inner city areas in large metropolitan cities.
- IMGs have participated in the mainstream medical organizations and have increasingly been appointed/elected to leadership positions.
- IMGs are undoubtedly an integral part of health care delivery in the country.

The AMA-IMG Section believes that the unemployment of IMG physicians in the face of a shortage of services is unconscionable. It is a terrible waste of an individual's education and their potential to care for patients who need them. Therefore, we believe it is prudent to consider different ways to integrate this existing cohort of trained physicians with proven entry level competencies into the U.S. physician workforce.

The AMA-IMG Section proposes the following nine recommendations:

1. Create greater opportunities for IMG physicians to work in clinical settings under 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. This

will also keep the physician in constant touch with clinical medicine and assist in sharpening communication skills.

2. Advocate for IMG and USMG Residency Parity – residency programs must consider IMG applications equivalent to the USMG applications using the same evaluation criteria. Residency programs should also publicize the number of applications received from IMGs for evaluation.

3. Increase the number of GME slots so that ECFMG/CSA-qualified IMGs waiting for residency positions can enter the workforce immediately.

4. Lobby relevant governmental agencies to streamline the visas issuance process to avoid unnecessary delays affecting the timely entry of IMGs in postgraduate training programs.

5. Collaborate with the Federation of State Medical Boards (FSMB) to develop guidelines for uniform licensure requirements for USMGs and IMGs alike in order to be applied by individual state medical boards.

6. Encourage all U.S. medical licensing bodies to utilize the IMED database to verify medical school credentials and to avoid the creation of arbitrary lists of approved and unapproved medical schools.

7. Increase the number of positions of the J-1 waiver slots, especially in states with the greatest projected shortages.

8. Establish state medical license portability across the U.S. as a top priority. The global medical community has "doctors without borders." The U.S. prohibits its own doctors from practicing across state borders. We argue that if medical licenses were portable, the physician workforce could redistribute itself more efficiently, especially in times of disasters (e.g. Hurricane Katrina.)

9. Increase IMG representation on national and regional medical boards responsible for regulation and policy-making. For IMG concerns to be heard, they must be openly voiced and responded to. Boards such as ECFMG, and most recently NRMP which have included IMG representation have benefited greatly.

10. Your recommendation(s) go here. Please e-mail your suggestions to us at img@ama-assn.org

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Carolyn Carter-Ellis, MBA, Program Administrator, AMA Department of IMG Services

State Medical Societies with IMG Sections

The following state IMG Sections elect leadership and hold regular membership meetings. For more information on these sections and other state medical societies, visit the IMG Web site at www.ama-assn.org/go/pub/category/1568.html

Florida Medical Assocation
Illinois State Medical Society
Medical and Chirurgical Faculty of Maryland
Massachusetts Medical Society
Michigan State Medical Society
Missouri State Medical Association
Medical Society of New Jersey
Medical Society of the State of New York
Oklahoma State Medical Society
Pennsylvania Medical Society
Texas Medical Assocation
Medical Society of Virginia

Sources

AMA Membership Fact Book, AMA Physician Masterfile, 2005

AMA IMG Chair Reports, upon request img@ama-assn.org

American Medical Association. *Physician Characteristics and Distribution in the US.* Chicago, Illinois: American Medical Association; 2006.

Committee on Policy Implications of International Graduate Students and Postdoctoral Scholars in the United States. Committee on Science, Engineering, and Public Policy. Board on Higher Education and Workforce. Policy and Global Affairs. The National Academies. *Policy Implications of International Graduate Students and Postdoctoral Scholars in the United States.* Washington, DC: The National Academies Press; 2005.

Cooper RA. Perspectives on the physician workforce to the year 2020. *JAMA* 1995;274:1534-1543.

Donaldson MS, Yordy KD, Lohr KN, Vanselow NA. Committee on the Future of Primary Care. Division of Health Care Services. Institute of Medicine. *Primary Care America's Health in a New Era.* Washington, DC: National Academy Press; 1996.

FAIMER Foundation for Advancement of International Medical Education and Research. International Medical Education Directory (IMED). Available at: http://imed.ecfmg.org.

Flexner A. *Medical Education A Comparative Study.* New York: The MacMillan Company; 1925.

International Medical Graduates Section. American Medical Association Web Site. Available at: http://www.ama-assn.org/ama/pub/category/1568.html

James C. Martin, MD; for the Future of Family Medicine Project Leadership Committee. The future of family medicine: a collaborative project of the family medicine community. *Ann Fam Med*. March/April 2004;2(suppl 1):S3-S30.

Liu M, Yamagata, H. Trends among foreign-graduate faculty at U.S. Medical Schools, 1981-2000. *Analysis in Brief AAMC.* June 2003;3(1):1-2.

National Resident Matching Program. National Resident Matching Program Web site. Available at: http://www.nrmp.org

Proctor J. Addressing the question of physician supply in america. *AAMC Newsroom Reporter*. July 2001;10(10):1-4.

Salsberg, ES. *AMA Section on Medical Schools Presentation,* http://www.ama-assn.org/ama1/pub/upload/mm/44/speakersumi-01.doc, 2001.

Thomson Learning. Thomson Learning Web site. Available at: http://www.thomson.com/learning/learning.jsp

U.S. Department of State. Bureau of Educational and Cultural Affairs. Foreign students yesterday world leaders today. Available at: http://exchanges.state.gov/education/educationusa/leaders.htm

U.S. Department of State. U.S. Department of Education. International Education Week 2005 November 14-18. Statement from: Colin L. Powell Secretary of State. International Education Week – November 15-19, 2004. Washington, DC; October 15, 2004. Available at: http://exchanges.state.gov/iew/statements/powell.htm

U.S. Department of State. Visa Section. Travel.State.gov. Bureau of Consular Affairs. Available at: http://travel.state.gov/visa/visa_1750.html

U.S. House of Representatives. Committee on Education and the Workforce. Testimony of Dr. David Ward President, American Council on Education before the House Committee on Education and the Workforce. Subcommittees on 21st Century Competitiveness and Select Education. September 24, 2002. Available at: http://www.house.gov/ed_workforce/hearings/107th/21st/studvisa92402/ward.htm