PERSPECTIVE

Integrating International Medical Graduates into the Physician-Scientist Pool: Solution to the Problem of Decreasing Physician-Scientists in the United States

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There is an increasing shortage of physician-scientists in the United States, threatening future medical research. There are several factors that dissuade US medical graduates from entering into physician scientists careers. This article proposes that international medical graduates (IMGs) who have contributed to the physician work force in the under serviced rural health system could also be a great source to meet the increasing physician-scientist demand. Mechanisms to allow IMGs to enter into the physician-scientist career track in the United States are suggested.

Key words: physician work force, physician-scientists, international medical graduates, Conrad 30 program

There is an ongoing debate on the physician shortage in the United States over the last two decades. The debate has varied from one that projected an oversupply of doctors, therefore recommending restriction of international medical graduates (IMGs) in 1980–1990, to one that projected a shortage of physicians in 2000, therefore pointing to the critical role of IMGs in meeting the needs of physician supply in the United States. It is now well recognized that IMGs play ''the safety net role'' in balancing the health care needs of the United States.[1] There is also increasing concern that the pool of physician-scientists in the United States is steadily decreasing.[2] In this issue, Puljak suggests that IMGs are an unrecognized potential source that could fill the void of the decreasing number of physician-scientists in the United States.[3] There is, however, a lack of data on whether the IMGs currently working in the United States would choose a career as a physician-scientist. This is an area that needs investigation.

To answer this question, Puljak conducted a survey of postdoctoral fellows employed at the University of Texas Southwestern regarding the barriers they faced in entering the research track.[3] She found that the IMGs, although interested in being trained as physician-scientists, faced many handicaps, including a lack of mentorship and funds. All were linked to current policies regarding the ineligibility of J-1 visa holders. The study has some limitations. The numbers surveyed are too small and reflect the opinion of a selective pool of IMGs who were already engaged in research.. The questions were too few to elicit critical information to better understand the profile of the candidates. Nevertheless, there is a message regarding the value of IMGs as future physician-scientists.

The purpose of this article is to review the background of IMGs who came to the United States on J-1 visas, their contribution to the US health care system thus far, and how they can contribute to the physician-scientist pool in the United States.

Role of IMGs in the US Health Care Workforce

Although IMGs constitute 25% of health care providers in the United States, they have faced an ambiguous welcome from their American hosts[1] over the last several decades. Although the safety net role of IMGs in health care delivery is recognized, there were efforts to decrease the number of IMGs between 1980 and 1990. This was based on a wrongly predicted

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oversupply of physicians in the United States. Then their critical role in rural health was well recognized.[4] Initially, they were considered temporary guests who were allowed to come to the United States on a J-1 visa for the purpose of "training," with a mandatory return to the home country after a certain period of time. Later, the United States discovered the value of IMGs as "fillers" for the physician workforce needs of the underserved in the United States. Various methods of visa waiver programs were created to recruit willing IMGs to serve in rural and urban underserved areas where US graduates were not willing to serve. This was a welcome opportunity for many J-1 visa holders who wished to remain in the United States for both professional fulfillment and economic reasons. And they did serve well. There are abundant data to support the significant contributions of IMGs to the health care needs of the country.[5]

Recognizing the importance of the role of IMGs in providing health care in the United States, the policy of the American Medical Association (AMA) changed from one of a restrictive nature to one of integration of IMGs as important health care providers in the United States. The AMA opened an IMG section as early as in 1989. The mission of the section is to promote IMG participation at all levels of organized medicine.[6] The American Association of Medical Colleges (AAMC) also recognizes the role of IMGs in health care delivery in the United States. The new AAMC position statement does not recommend a decrease in IMGs entering the country, and it continues to support opportunities for IMGs to train and practice in the United States.[7]

Shortage of Physician-Scientists in the United States

The previous prediction of an excess of physicians in the workforce failed because of a lack of information on all of the variables that influence staff requirements: for example, the unexpected surfacing of new diseases, which have been demanding greater attention from medical researchers during the last decades. A few examples may illustrate this statement. The changing population demographics show that the US population is aging, requiring newer specialists. Hazzard pointed out that the field of gerontology is growing rapidly, and there is a need for trained physicians not only to provide care but also to conduct research in geriatrics.[8] In addition, the emerging health challenges of the twenty-first century, human immunodeficiency virus/acquired immune deficiency syndrome (HIV/AIDS), avian flu, and bioterrorism, will need a large number of committed physician-scientists to develop new preventive and curative interventions. Although the United States has enjoyed an abundance of physician-scientists for a long time, over the last decade or so, the number of American medical graduates entering into research has decreased, causing serious concerns in academic circles.[9] There are several reasons for this changing trend. The primary reason is economics. US medical graduates are burdened with heavy loans by the time they graduate from medical school. This is reflected in the steady decrease in the number of students showing a strong interest in research. According to one study, there is a 25% decrease in physician-scientists on medical school faculty today than a decade ago. In addition, medical school admission committees are not placing adequate emphasis on interest in research as the criteria for selection of students entering medical schools, according to one study.[10] The result is a decrease in the pool of physician-scientists.

Clark and Hanel studied the contribution of MD-PhD training to academic orthopedic faculties.[11] Of the 1,615 graduates who earned both MD and PhD degrees, 277 (19%) chose the nonclinical pathway and 593 were in residency at the time of the study, leaving 745 in the clinical track. Five hundred sixty-six of 745 (75%) were academic faculty, and 130 (10% attrition) were in private practice. This article underscores the lack of MD-PhDs in orthopedics; however, it also shows the impact of the medical scientist training program. Similar data for other specialties are forthcoming. It is of interest to note that the AAMC statement on the physician workforce shortage does not mention the problem of shortage of physician-scientists.[8] It is hoped that the workforce assessments in the future will address this issue.

IMGs' Contribution to Academic Medicine

There is limited information in this regard. In a study in 1998, Aranha reported that 88% of the medical schools had at least one IMG faculty member.[12] Ten percent of the surgical academic faculty was IMG in origin. The 572 IMG faculty members came from 732 different countries. Fourteen of the academic faculty were department heads. These data suggest that IMG physicians have the potential to move into the academic track if given the opportunity. Similar data on IMGs in different specialties need to be gathered to better understand the critical role of IMGs in meeting academic workforce needs. The AAMC recognizes this gap in information.[7]

IMGs in Training: A Solution for the Shortage of Physicians?

As observed by Puljak,[3] IMGs can be a great resource for future academic and physician-scientist positions if they are well prepared from the time they enter training programs. This sentiment was expressed recently in a letter to the editor by two IMG psychiatry residents.[13] They noted that only 39% of academic psychiatrists are interested in research and few graduating psychiatry residents are pursuing full-time careers, leading to difficulties in recruitment and retention of physician-scientists in the mental health field. IMGs are also considered suitable candidates for a research career in psychiatry because of their wide experience, cultural background, and personal attributes. However, restrictive regulations are limiting the entry of IMGs into the much needed field of research in psychiatry. The two authors recommend equal research opportunity for all psychiatry residents irrespective of visa status.[13]

Although a few IMGs with J-1 visas have managed to pursue research interests, there are no data on their numbers. They are also not eligible to compete for training grants (T16/T32). Currently, there are a few, albeit very difficult, options for IMG candidates engaged in research or academic work to change their visa status from J-1 visas to H1-B, EB, or O visas. EB and O visas are given to an established researcher on the recommendation of an appropriate professional of authority. There are far and few grantees to meet the increasing demand. Although over 1,500 visa waivers are granted to J-1 visa holders every year, the data on visa waivers for physician-scientists are lacking.

There is also a subliminal feeling that IMGs are not well prepared for undertaking research as a career. In spite of such apprehension, IMGs were found to be as good as US medical graduates in in-training tests.[14] Waxman found that first-year IMG residents scored better than US medical graduates, which suggests that many IMGs are well prepared prior to coming to the United States.[14] In a recent statement, McMahon reminded us that IMGs, in addition to clinical services, also contribute to the country's research endeavors.[5] These observations dispel any apprehension regarding the potential of IMGs as physician-scientists.

Boulet and colleagues, in a recent article, emphasized that IMGs are an important part of the US health care system and that this ''cohort should be considered when studying the current and future US health care workforce needs.''[15] They stated that there is a need for national studies that relate physician supply, graduate medical education training, immigration policy, and changes in the apportioning of work-based visas or use of waiver programs to stay and practice medicine in the United States. Increasing societal health care needs require us to address these and other workforce issues. So far, the focus has mainly been on health care needs in underserved areas. We suggest that in the future physician-scientist workforce needs should be included in these calculations.

To curb the depleting physician-scientist pool in the United States, we suggest visa waiver programs for IMGs with a proven record of research interest using appropriate metrics. A policy change similar to Conrad 20 and Conrad 30 may be introduced to increase the recruitment of IMGs into the physician-scientist pool. (The Conrad ''state 20'' program was sponsored by Senator Kent Conrad [D-North Dakota] in 1994 as an amendment to Title III of the Immigration and Nationality Act to attract IMGs to fill vacancies in health professional shortage areas in both rural and urban areas.) This concept requires a paradigm shift in thinking at several levels, starting at the immigration process, AAMC, and NIH.

Brain Gain and Brain Drain

In considering IMGs as a resource for the physician workforce in the United States, we must not forget the concerns of developing countries affected by physician migration: contributing to the ''brain drain'' and the associated economic loss.[16] These issues have never been addressed by developing countries benefiting from migrant physicians. In the current context of globalization, the migration of professionals and skilled personnel cannot be controlled. But we can develop programs that will have beneficial effects for resource-poor countries.[17] It may be added that such a policy would also be in line with the global strategy toward closing the 10/90 gap experienced in developing countries.[18]

Ahmad made several suggestions to redress the effect of brain drain on resource-poor countries.[19] These include payment of some compensation to the source country through bilateral arrangements, finance, expansion of infrastructure or technology, and targeted research in the donor country. The funds should be used to build an environment to attract the return of expatriate physicians. The resource country must also take initiatives and responsibility to retain and use their physicians. In addition, they should prepare grounds to entice the return of expatriate physicians and physician-scientists. This plan will need the full cooperation of both developing and developed countries. These strategies are to be developed through

bilateral agreements between countries. Increasingly, ''health as a foreign policy'' is being advocated for successful relationships between countries in modern-day diplomacy.[20]

In summary, specific recommendations in regard to IMGs as a source of physician-scientists include the following: IMGs with an aptitude for research should be given an opportunity during their training period to pursue a physician-scientist career. A physician-scientist enhancement program similar to the Conrad 20 and Conrad 30 program should be introduced to enrol qualified and interested IMGs into a research career. These measures may contribute to increasing the physician-scientist pool in the United States.

References

1. Mick S, Lee SYD. The safety net role of international medical graduates. Health Affairs 1997;16:140–50.
2. Zemlo TR, Garrison HH, Partridge NC, Ley TJ. The physician scientist: career issues and challenges at the year 2000. Life Sci Forum 2000;14:221–30.
3. Puljak L. An overlooked source of physician-scientists. J Investig Med 2007;55:402–5.
4. Baer L, Ricketts T, Konrad T, Mick S. Do international medical graduates reduce rural physician shortages? Med Care 1998;36:1534–44.
5. McMahon GT. Coming to America. International medical graduates in the United States. N Engl J Med 2004;350:24.
6. American Medical Association. IMG. Available at: http://www.ama-assn.org/ama/pub/category/17.html (accessed Octber 16, 2007).
7. American Association of Medical Colleges. AAMC statement on the physician workforce. June 2006., Available at: www.aamc.org/workforce/workforceposition.pdf (accessed Octber 16, 2007).
8. Hazzard WR. Capturing the power of academic medicine to enhance health and health care of the elderly in the USA. Geriatr Gerontol Int 2004;4:5–14.
9. Rosenberg LE. The physician scientist: an essential and fragile link in research chain. J Clin Invest 1999;103:1621–6.
10. Neilson EG. The role of medical school admissions committees in the decline of physician-scientists. J Clin Invest 2003;111:765–7.
11. Clark JM, Hanel DP. The contribution of MD-PhD training to academic orthopaedic faculties. J Orthop Res 2001;19:505–10.
12. Aranha GV. The international medical graduates in US academic general surgery. Arch Surg 1998;133:130–3.
13. Varma A, Malik M. Research during psychiatry residency: a case for IMGs on visas [letter]. Acad Psychiatry 2007;31:171–2. Available at: http://ap.psychiatryonline.org.
14. Waxman HS. Workforce reform, internal medical graduates and in-training examination [editorial]. Ann Intern Med 1997;126:803–5.
15. Boulet JR, Norcini JJ, Whelan GP, et al. The international medical graduate pipeline: recent trends in certification and residency training. Health Affairs 2006;25:469–77.
16. Vidyasagar D. Global notes: brain drain or brain power—human resources in a globalized world. J Perinatol 2006;26:246–7.
17. Hagopian A, Thompson MJ, Fordyce M, et al. The migration of physicians from sub-Saharan Africa to the United States of America: measures of the African brain drain. Hum Res Health 2004;2:1–10.
18. Vidyasagar D. Global notes: the 10/90 gap disparities in global health research. J Perinatol 2006;26:55–6.
19. Ahmad OB. Managing medical migration from poor countries. BMJ 2005;331:43–5.
20. Fidler DP, Drager N. Health and foreign policy. Bull World Health Organ 2006;84:687.