Challenges for International Medical Graduates in the US Graduate Medical Education and Health Care System Environment: A Narrative Review

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Abstract

International medical graduates (IMGs) have become a vital part of the US graduate medical education (GME) and health care system (HCS) workforce; they contribute to essential diversity that relieves cultural and linguistic barriers to health care. The number of IMGs looking for medical training in the United States has constantly been increasing in the last decades. The challenges they meet begin long before residency application, continue during their transition to residency programs, through early medical training, and eventually subside in senior years. IMGs’ hurdles permeate the themes of navigating the US GME and HCS, adaptation to the US culture, communication skills, racial discrimination, emotional distress, and finances. This article aims to comprehensively review available information concerning the challenges encountered by IMGs in their transition to the US GME and HCS environments.

Introduction And Background

International medical graduates (IMGs), defined as individuals who received their primary medical degree from a medical school outside the United States and Canada [1], have become a vital portion of the Graduate Medical Education (GME) collective and the US health care system (HCS) and scientific research workforce [2]. They represent a quarter of all training and actively practicing physicians with predominance in primary care specialties [3]. The number of IMGs looking for postgraduate training in the USA has constantly been increasing, as depicted by the 2022 Main Residency Match Results and Data Report in which non-US citizen IMGs experienced a rise of 11% in the total of active applicants since 2018 [4]. In addition, evidence indicates that some IMGs yield better patient outcomes than US practitioners [5]. Also, they outperform US medical graduates (USMG) in the In-Training Examination of internal medicine [6] and score equivalently to USMG residents in general surgery objective assessment [7]. Moreover, IMGs hold more advanced degrees along with added scholarly production than the rest of the applicants [8], contributing to essential diversity that relieves cultural and linguistic barriers to health care in the USA [9].

The challenges confronted by IMGs begin before residency application when they must build a highly competitive profile aiming for a barely equal chance of matching their US peers. Despite higher United States Medical Licensing Examination (USMLE) scores, IMGs have a lower probability than USMGs of being considered for an interview and subsequently being accepted into a residency program; data from previous years computed in the Interactive Charting Outcomes in the Match reveals that the percentage of applicants who matched into internal medicine with a Step 1 score of 220-229 was 99% of USMG seniors and only 51% of non-US citizen IMGs, the latter proportion rises to 89% with a Step 1 score of ≥250 [10]. Thus, factors that increase the probability of securing a residency by IMGs include elevated USMLE scores, US clinical experience through hands-on rotations, letters of recommendation from US physicians, and scientific research [4,11]. In addition, certain program directors exhibit rejection of IMGs during the selection process [12,13]. Upon entry to residency, IMGs meet several events that might preclude a smooth transition to the new work, such as linguistic and cultural barriers, lack of consideration for one’s ethnic background, adaptation to settings with different epidemiology and technology tools, and simultaneously grasp new clinical skills and knowledge [11,14-16]. This study aimed to present a narrative description of available information concerning the challenges encountered by IMGs around the transition to the US GME and HCS environment.

Review

We conducted a PubMed search using the following terms: international medical graduate, foreign medical graduate, needs, challenges, characteristics, discrimination, bias, inclusion, experience, medical residency, Graduate Medical Education, residency program, integration, transition, orientation, acculturation, and wellness; these terms were combined using the Boolean operators: AND, OR. We included experimental and observational studies evaluating both non-US and US IMGs, published in either English or Spanish. To get further information, we scanned relevant articles’ references and navigated the website of the Educational...
Commission for Foreign Medical Graduates (ECFMG), the Accreditation Council for Graduate Medical Education (ACGME), and the American College of Physicians.

Most of the content of this work is constructed using IMGs’ subjective experiences and perceptions documented in qualitative studies, complemented with a handful of quantitative studies. We organized this review, according to themes originating from the combination of varied resources, including web-based ECFMG modules [17], a presentation offered at the 2020 ACGME Annual Educational Conference [18], a position paper developed by the Canadian Psychiatric Association’s Education Committee [19], and a range of studies using grounded theory [15,20–26], critical incident and group focus analysis [27,28], and co-generative ethnography [29]. We selected the themes present in at least two of the resources mentioned above and incorporated the information into six categories: navigating the US GME and HCS, adaptation to the US culture, communication skills, racial discrimination, emotional distress, and finances. It is essential to know that qualitative-derived themes are not mutually exclusive [20].

**IMG challenges**

**Navigating the US Culture**

A study exploring the acculturation of non-US IMGs in a pediatric residency program found that, overall, foreign-trained residents deemed the US life and culture more complex to adjust to than the US HCS, such difficulties comprised housing, daycare, grocery shopping, common sports, and the American school system [28]. Navigating cultural differences is the most commonly reported IMG challenge related to the US GME and HSC transition, registered in up to 17% of residents [30]. Turbulent navigation can occur when engaging in conversation with colleagues or patients about popular US culture topics, including sports and famous people, as this could be troublesome for IMGs, even with prior preparation on the subjects so that dialogues may be restricted to medical issues [21]. A major difference noted was recognizing and managing aspects of family life in the clinical setting; in the US, there is more emphasis on appropriately recognizing and tackling neurodevelopmental disorders of children, child maltreatment, intimate partner violence, and dysfunctional family patterns [23]. Likewise, it might be demanding for pediatric IMG residents to deal with single parents and same-sex couples and collaborate with child protective services, as these encounters could be unusual in their country of origin [28]. IMGs from Asian and Hispanic origins share strong family bonds, and coming to a society with situations that lack a family center, acknowledged by family medicine IMG residents, is alarming [23,29].

**Adaptation to the US GME and HCS**

Adaptation to the US HCS is second only to cultural barriers as the most common challenge encountered by IMGs in their transition to the USA; its frequency rises to 14% in a recent survey [30]. A study conducted in a pediatric residency program showed that IMGs recognize greater availability of laboratory and imaging tests compared to their home countries. According to the IMGs of this study, the advantages of technology are twofold: ease the diagnostic process and rule out medical conditions that could lead to a lawsuit due to malpractice claims from patients, even when those medical conditions can be detected with elementary clinical skills (defensive medicine) [22,23]. In addition, IMG residents highlight that medical decisions followed by US clinicians rely substantially on patient comprehension and involvement, a model known as patient-centered care, which stands out against the customary unidirectional clinical practice of their country of origin that places physician’s opinion above all [25,26]. One reason behind the prevalent patient-centered care in the USA, acknowledged by family medicine IMG residents, is a more profound knowledge of patients’ medical conditions [20]. There is also a perception from Japanese IMGs that US patients transfer health care responsibility to clinicians as they would have not only to tell them what to do and arrange follow-up visits but also constantly prompt them to continue care [22].

IMGs coming from backgrounds where long shifts are ordinary and charting is not a significant portion of everyday work may find shocking frequent sign-out schedules and overwhelming the amount of paperwork related to US medical practice [21]; bureaucratic barriers are described by over 9% of IMGs [30]. To illustrate the administrative frustration, Latino IMGs criticized the pressure to accomplish multiple patient visits and that the time spent with them might not be sufficient to provide high-quality care [29]; also, the legal emphasis and formality of documentation are sometimes disturbing [23]. Besides being a novice at charting, many IMGs are unfamiliar with the presentation of clinical cases and the development of personal patient assessment and plans; it is argued that they receive no training on those skills in their medical schools [28]. Within the integrated roles competency, joining teams and understanding each member’s function were other distressing tasks for the Middle East and Indian IMGs [22]. Collaboration between health care providers, including physicians, social workers, pharmacists, nurses, physician assistants, physiotherapists, and dieticians, results in expeditious clinical decision-making and patient management, but it could take a great effort from IMGs to move through all the interactions [21,23,28]. Additionally, patient care provided by IMGs can be hampered due to a lack of knowledge about the US health insurance complexity [21].

In the face of the individualistic US learning system that demands active participation to perceive residents’ progress and determination [21,23,32], IMG residents encountered difficulties showing decisiveness and expressing one’s opinions due to limitations in communication skills, diverse personalities, and the medical education system they are used to, where junior residents do not share their opinion when seniors are present [21,28]. In addition, internal conflict may arise as the fear of being involved in performance feedback because the impression that it represents weakness exposure opposes the accompanying IMGs’ aspiration to
stand out from the rest to prove themselves to faculty and colleagues [33]. Moreover, there are still countries where academic medical examination modalities include oral, bedside clinical assessments, and written essay exams; this concerns IMGs coming from those places as they must get into the habit of taking standardized multiple-choice board tests to succeed in their residency [29].

A particularly challenging field of the US HCS for IMGs is pain management. It has been noted that foreign physicians' pain control strategies might not be suitable for the standards held in the USA [34]. Also, as they are more likely to meet populations susceptible to suffering from persistent pain, such as the medically underserved, they are likely to see unsatisfactory outcomes in those people [35]. Furthermore, rampant misuse and addiction to opioid analgesics in certain US patients contrast with the prescription practices of controlled drugs followed by IMGs [21], which along with low availability and strict narcotic legislation in their countries of origin, could lead to unsatisfactory pain relief [29].

Communication Skills

Communication is one of the most common challenges identified in studies evaluating the transition of IMGs into the US GME. Around 7% of J-1 visa physician recipients report language or communication barriers [30]. They are more likely to have a native language other than English [36], and, as would be anticipated, the extent of this obstacle depends on participants’ prior experience with English communication situations [25]. Dialogue nuances such as accent variations, rapidity of speech, tone, voice inflection, colloquialisms, and local dialect are among described barriers [21,25,28]. On the other hand, patients’ understanding of some residents’ dialects is also a limitation for effective communication [20].

A critical implication of a lack of English proficiency is that it might increase the risk of misdiagnoses and inadequate patient management, which is especially apparent in the field of psychiatry, where knowledge of the patient’s culture and linguistic nuances lead to accurate identification of mental health disorders, this was echoed by Latino residents who become discouraged during such clinical encounters [29]. Further research on behavioral science competency showed that family medicine residents from various countries struggled to identify and attend to every patient’s symptoms of potential psychopathologies. Flaws in the medical interview are attributable to little or no prior experience with clinical psychiatry, absence of physician-patient relationship training, and cultural norms or religious beliefs in their home countries [23]. Additionally, IMGs from non-Western countries may have trouble acquiring the attitudes and skills required for competent patient care associated with sexual health due to cultural and religious preconceptions that render sexuality a persistent taboo [28,37]. Another factor related to defective communication in clinical scenarios is that in certain IMGs’ cultures, most of the curriculum, if not all, is dedicated to learning hard science without focusing on behavioral disciplines [20]. To expand on that idea, delivering bad news challenged IMGs who are used to releasing that kind of communication to patient’s family or friends; many IMGs remark this way of active discussion between the patient and medical staff as a limitation to a fluent decision-making process [25].

It is essential to highlight that Latino residents described how supervisors anticipated a close interaction with shared-language patients, although they came from different countries and cultures [29], and this resulted in the effective closure of a standard gap in the USA, where 18% of the population have a Hispanic origin [38]. There is also evidence that, compared to USMG, IMGs report fewer interpersonal communication difficulties during medical interactions with culturally distinct patients, possibly linked to the effort of the former to overcome cultural differences and their eagerness to connect with patients [32].

Racial Discrimination

Discrimination is a major issue in US GME as it seems that the focus is entirely on the assimilation of the new culture without an appreciation of being different [39]. This phenomenon is seen in all levels of the US HCS, from patients and family members to colleagues and superiors, adding that IMGs have been historically confined to less-desirable specialties and locations [26]. An article published in 1994 revealed the extent of racial discrimination suffered by IMGs in training facilities; up to 23% of participants reported at least one experience of ethnic harassment from patients, attending faculty, peer residents, and nurses. The frequency of self-reported racial incidents was higher in every minority group than in the white population; racial slurs were the most common form of racial discrimination, followed by favoritism and malicious gossip [40]. A more recent report shows cases of IMG exclusion from US colleagues represented by implicit aggressions secondary to contrasting cultures as foreign-born residents were considered unsociable and incompetent [15]. The perception of IMGs' underperformance in clinical scenarios leads to a closer inspection by faculty members and nurse staff compared to their US counterparts [23].

Interviews led by investigators of a fellowship program revealed that not only foreign graduates but also USMG treated as a foreigner (for having accent) are subject to racism [39]. In many cases, discriminatory behavior comes from patients [27], and these events are rarely conveyed to authorities either because offended residents are not aware of policies for reporting patient discrimination or concerned about retaliation [39]. This concealing behavior was recorded in another study assessing residents’ transcultural experiences in caring for patients, where discrimination complaints made by IMGs in previous individual interviews were omitted, perhaps voluntarily, following group sessions involving USMG [27]. Some IMGs give an account of the embracing part of the US culture that recognizes and accepts people with diverse origins and opinions [21].
Cultural shock leads to mood disorders that interfere with residents' competence [21]. For example, IMGs who have previously completed GME training in their home countries report lower fatigue during the US residency due to duty hour limitations. However, they tend to inform more significant stress and anxiety caused by communication barriers, the feeling of going backward in the medical education hierarchy, loss of family support, the sense of alienation, and frustration for not contributing to changing the shortcomings of their countries of origin that fueled migration [15]. On the other hand, one study found that the self-esteem of Japanese residents seems to improve after the first one to two years, accompanied by an appreciation of personal growth [21]. Similarly, data from a study of community-based internal medicine residency programs evidenced that IMGs score better than USMGs in self-assessed fatigue, personal growth, and self-esteem scales in their transition to residency. The authors of this study suggest that the results obtained are an effect of the energy and enthusiasm of foreign graduates, despite facing significant challenges, in the pursuit of US GME training, and the fact that IMGs hold superior medical school performance than USMG enrolled in less popular specialties such as internal medicine [56].

The presence of other IMGs in the residency program is considered reassuring, especially if they share ethnic backgrounds, as senior residents and program staff can help to overcome administrative, emotional, and academic problems [21]. In addition, IMGs tend to apply to programs located in multicultural areas with large immigrant communities where they become part of a diverse group of residents, and acculturation is common among trainees [29].

Finances

Every step of the journey poses considerable financial stress to applicants. Blackshaw et al. estimated the cost spent by medical students applying to emergency medicine (EM) residency programs, the interquartile range of attending an interview was $185-500, the mean cost of each away rotation was $1,065, and in total, an average of $8,312 would be spent in the pursuit of an EM residency. The same study indicated that the cost for IMGs, so the cost IMGs is estimated to be higher. Although IMGs are less likely than US peers to have high indebtedness at graduation from medical school (OR: 18.3; 95% CI: 5.85-57.26 for a debt of <$50k) [36], among the top 10 nations sending applicants for ECFMG J-1 visa sponsorship there are low- and middle-income countries, causing significant economic limitations and making face-to-face proceedings in particular hands-on rotations, obtaining letters of recommendation from US physicians, and becoming familiar with the US GME and HCS conditions affordable only to those with plenty of resources [1,42]. While many residency programs establish US direct patient care experience as a mandatory or preferred requirement [13], not all US teaching hospitals accept IMGs for clinical clerkships; those that do frequently include a long solicitation process, stringent submission requisites, and high application fees [43].

The recent movement to virtual interviews may be more equitable for IMGs; recommendations from the AAMC Interview Guidance for the 2022-2023 Residency Cycle state that virtual interviews from the two previous cycles yielded benefits for all stakeholders. Applicants informed a reduction in travel expenditures and less interference with ongoing responsibilities. In addition, virtual interviewing improves fairness in the selection procedure by removing a big part of the application cost, consequently raising the number of applications [44].

After Residency

Finally, residency program admission and adaptation to the new atmosphere are not the only obstacles met by IMGs, most of those who conclude a residency program will seek to remain in the USA and begin independent medical practice. About 1,000 IMGs are recruited annually through the Conrad 50 J-1 Visa Waiver Program to fill vacancies in the Health Professional Shortage Areas (HPSAs) or Medically Underserved Areas (MUA) to avoid the 2-year foreign residence requirement soon after completion of a J-1 visa program [45]. The positions offered through these programs are for primary care specialties, therefore, highly qualified doctors may have to desist from working on the subspecialty they have been training so long for. Around 55-80% of these physicians intend to remain in their communities after the three-year obligation period of the Conrad program [46]. In addition, after the successful accomplishment of medical residency and visa waiver requirements, a substantial number of foreign physicians, up to 81% in a recent survey, consider leaving the HPSA and MUA because of the permanent residency backlog [47]; retention of physicians in shortage areas ranges from 4% to 40% depending on the time spent with original employers [46]. To overcome the expected physician deficit, a deep understanding of the importance and the hurdles of IMGs within the US GME and HCS population is vital [48].

Given the relevance of IMGs and the barriers they tend to face before and after residency admission, many attempts have been made to develop instruments that make them aware of the US HCS and GME environment and support their transition [31,49-62]. The importance and efficacy of qualification programs have been stressed [63], and recommendations for implementing interventions for IMGs have been developed [64]. US clinical experience before applying to residency programs embodies the ideal opportunity to enhance curriculum competitiveness, acquire strong letters of recommendation, and get closer to the national HCS, which can ease the transition to post-graduate training [65]. When away rotations represent a significant economic limitation, and in the event of international restrictions, e.g., the coronavirus disease 2019 (COVID-19) pandemic, standardization of virtual programs that assess IMGs' cultural competence, language proficiency, professionalism as well as clinical skills, and subsequently provide tools for preparing
for the US medical residency are needed to promote successful IMG transition and wellness. Successful programs are those that not only address individual needs of IMGs but also provide counseling to peers and supervisors during and after implementation [64].

Conclusions
IMGs find the US medical residency an opening to go beyond the limitations of their home countries and access high-quality GME. However, they must deal with all the associated challenges as part of the journey. Different countries of origin and educational backgrounds lead to varied perceptions and challenges around the transition to US GME; however, clusters of everyday experiences allow for the development of resources directed at well-defined categories. The transition of IMGs to the US GME and HCS is full of challenges that can be effectively confronted with orientation courses before and after entry to residency, wide availability of those programs would represent a significant aid to incoming IMGs. Studies included in this review have restricted generalizability as they are predominantly qualitative, and sampling is limited to small groups. The development of large-scale quantitative studies evaluating the prevalence of the challenges mentioned above within residency programs would underline the actual extent of the problem.

Additional Information
Disclosures
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References
1. ECFMG J-1 visa sponsorship data. (2021). Accessed: August 28, 2021: https://www.ecfmg.org/resources/data-sponsorship.html.
2. Armstrong K, Anderson ME, Carethers JM, Loscalzo J, Parmacek MS, Wachter RM, Zeidel ML: International exchange and American medicine. N Engl J Med. 2017, 376: 10.1056/NEJMtp1701359.
3. Ahmed AA, Ilwang WT, Thomas CR Jr, Deville C Jr: International medical graduates in the US Physician Workforce and Graduate Medical Education: current and historical trends. J Grad Med Educ. 2018, 10:214-8. 10.4300/JGME-D-17-00580.1.
4. Main residency match data and reports. (2022). Accessed: March 31, 2022: https://staging-nrpm.kinsta.cloud/match-data-analytics/residency-data-reports/.
5. Tsugawa Y, Jena AB, Orav EJ, Iha AK: Quality of care delivered by general internists in US hospitals who graduated from foreign versus US medical schools: observational study. BMJ. 2017, 356: 10.1136/bmj.j273.
6. Garibaldi RA, Subhiyah R, Moore ME, Waxman H: The In-Training Examination in Internal Medicine: an analysis of resident performance over time. Ann Intern Med. 2002, 137:505-10. 10.7326/0003-4819-137-6-200209170-00011.
7. Lara FC, Naik ND, Pandian TK, et al.: A comparison of objective assessment data for the United States and international medical graduates in a General Surgery Residency. J Surg Educ. 2017, 74:1-7. 10.1016/j.jsurg.2017.08.003.
8. Schenarts PJ, Lowe KM, Agle SC, Haisch CE: Comparison of surgery residency applicants for U.S. medical schools with U.S.-born and foreign-born international medical school graduates. J Surg Educ. 2008, 65:406-12. 10.1016/j.jsurg.2008.05.002.
9. Norcini JJ, van Zanten M, Boulet JR: The contribution of international medical graduates to diversity in the U.S. physician workforce: graduate medical education. J Health Care Poor Underserved. 2008, 19:495-9. 10.1353/hpu.0.0015.
10. Interactive charting outcomes in the match. (2022). Accessed: March 31, 2022: https://www.nrmp.org/match-data-analytics/interactive-tools/charting-outcomes/.
11. Zaidi Z, Dewan M, Norcini J: International Medical Graduates: promoting equity and belonging. Acad Med. 2020, 95:82-7. 10.1097/ACM.0000000000003594.
12. Desbiens NA, Vidalieret HJ Jr: Discrimination against international medical graduates in the United States residency program selection process. BMC Med Educ. 2010, 10:1186/1472-6920-10-5.
13. Woods SE, Harju A, Rao S, Koo J, Kini D: Perceived biases and prejudices experienced by international medical graduates in the US post-graduate medical education system. Med Educ Online. 2006, 11:10.5340/bioe.v11i1.4595.
14. Chabbar JT: My new country: a journey to belonging. J Grad Med Educ. 2015, 7:498-9. 10.4300/JGME-D-14-00585.1.
15. Chen PG, Curry LA, Bernheim SM, Berg D, Goua A, Nunez-Smith M: Professional challenges of non-U.S.-born international medical graduates and recommendations for support during residency training. Acad Med. 2011, 86:1383-8. 10.1097/ACM.0b013e318232035e.
16. Levin LR Jr, Villar H, Levin CR, Psalms SB, Aranha GC: The journey of a foreign-trained physician to a United States residency. J Am Coll Surg. 2007, 204:486-94. 10.1016/j.jamcollsurg.2006.12.009.
17. On-line learning modules. (2022). Accessed: June 22, 2022: https://www.ecfmg.org/evsp/resources-on-line-learning-modules.html.
18. International medical graduates and well-being: unique issues and challenges. (2022). Accessed: June 22, 2022: https://dl.acgme.org/learn/video/international-medical-graduates-and-well-being-unique-issues-and-challenges/client=a...
19. Kirmayer LJ, Sockalingam S, Fung KP, et al.: International medical graduates in psychiatry: cultural issues in training and continuing professional development. Can J Psychiatry. 2018, 63:258-80. 10.1177/0706743717752913.
20. Dogan KA, Lang F, Floyd M, Kemp E: International medical graduate–patient communication: a qualitative analysis of perceived barriers. Acad Med. 2009, 84:1567-73. 10.1097/ACM.0b013e3181f88e11

21. Heinz BS, Tokor HM: Japanese International Medical Graduates and the United States clinical training experience: challenges abroad and methods to overcome them. J Gen Fam Med. 2020, 21:109-18. 10.1002/jgf2.151

22. Rao A, Freed CR, Trim RF: International and American medical graduates in a U.S. pediatric residency program: a qualitative study about challenges during post-graduate year 1. Med Teach. 2015, 33:815-9. 10.1111/medt.12297

23. Searsight HR, Gafford J: Behavioral science education and the international medical graduate. Acad Med. 2006, 81:164-70. 10.1097/00001888-200602000-00001

24. Kramer MN: The educational needs of international medical graduates in psychiatric residencies. Acad Psychiatry. 2005, 29:322-4. 10.1176/appi.ap.29.3.322

25. Jain P, Krieger JL: Moving beyond the language barrier: the communication strategies used by international medical graduates in intercultural medical encounters. Patient Educ Couns. 2011, 84:98-104. 10.1016/j.pec.2010.06.022

26. Chen PG, Nunez-Smith M, Bernheim SM, Berg D, Gonu A, Curry LA: Professional experiences of international medical graduates practicing primary care in the United States. J Gen Intern Med. 2010, 25:947-55. 10.1007/s11606-010-1401-2

27. Fiscella K, Roman-Diaz M, Lue BH, Botelho R, Frankel R: ‘Being a foreigner, I may be punished if I make a small mistake’: assessing translucral experiences in caring for patients. Fam Pract. 1997, 14:112-6. 10.1093/fampra/m4.1.112

28. Osta AD, Barnes MD, Persagno R, Schwartz A, Hirschfield LE: Acculturation needs of pediatric international medical graduates: a qualitative study. Teach Learn Med. 2017, 29:143-52. 10.1080/10401351.2016.1251211

29. Haumann-Stable C, Zayas LH, Hauser D, Carvajal C, Mejia C, Nieves D: Challenges and solutions for Latin American-trainned international medical graduates in psychiatry residency. Int J Ment Health. 2011, 40:29-40. 10.2775/IMB020-7411400502

30. Symes HA, Boulter J, Yaghmour NA, Wallowicz T, McKinley DW: International medical graduate resident wellness: examining qualitative data from J-1 visa physician recipients. Acad Med. 2022, 97:420-5. 10.1097/ACM.0000000000004406

31. Rao NR: Psychoanalytic psychotherapy training as acculturative experience for international medical graduates: a commentary. Acad Psychiatry. 2012, 36:271-6. 10.1176/appi.ap.11040090

32. Jain P: Intergroup, interpersonal, and intercultural nature of patient-provider communication: a comparison of IMG and USMG physicians. Commun Res. 2014, 17:27-44. 10.1080/10711722.2014.872498

33. Broquet KE, Punwani M: Helping international medical graduates engage in effective feedback. Acad Psychiatry. 2012, 36:282-7. 10.1176/appi.ap.11020031

34. Meghani SH, Rajput V: Perspective: the need for practice socialization of international medical graduates—an exemplar from pain medicine. Acad Med. 2021, 86:571-4. 10.1097/ACM.0000000000002688

35. Bifalco L, Anderson DR, Blankson ML, Channamsetty V, Blaz JW, Nguyen-Louie TT, Scholle SH: Evaluation of a chronic pain screening program implemented in primary care. JAMA Network Open. 2021, 4(10.1001/jama.networkopen.2021.18495

36. Gouzi A, Kern DE, Wight SM: Similarities and differences between international medical graduates and U.S. medical graduates at six Maryland community-based internal medicine residency training programs. Acad Med. 2009, 84:385-90. 10.1097/ACM.0b013e318197321b

37. Sciolla A, Ziajko LA, Salguero ML: Sexual health competence of international medical graduate psychiatric residents in the United States. Acad Psychiatry. 2010, 34:361-8. 10.1176/appi.ap.34.5.361

38. Quick facts: United States. (2022). Accessed: June 18, 2022: https://www.census.gov/quickfacts/fact/table/US/RH/25220/qf-headnote-b.

39. Warsame RM, Asiedu GR, Kumbamu A, et al.: Assessment of discrimination, bias, and inclusion in a United States Hematology and Oncology Fellowship Program. JAMA Network Open. 2021, 4(10.1001/jama.networkopen.2021.33199

40. Baldwin DC Jr, Daugherty SR, Rowley BD: The implications of the current visa system for foreign medical graduates. Fam Pract. 1997, 14:19-21. 10.1093/fampra/m4.1.19

41. Blackshaw AM, Watson SC, Bush JS: The impact of a chronic pain screening program implemented in primary care. West J Emerg Med. 2017, 18:169-73. 10.5811/westjem.2016.10.31277

42. World Bank country and lending groups. (2021). Accessed: August 29, 2021: https://datahelpdesk.worldbank.org/knowledgebase/articles/906519.

43. Antsely R: A foot in the door: foreign international medical students’ obstacles to hands-on clinical electives in the United States. Acad Med. 2020, 95:973-4. 10.1097/ACM.0000000000003364

44. AAMC Interview Guidance for the 2022-2023 residency cycle. (2022). Accessed: June 7, 2022: https://www.aamc.org what-we-do/mission-areas/medical-education/aamc-interview-guidance-2022-2023-residency-cycle.

45. Al Ashry HS, Kaul V, Richards JB: The implications of the current visa system for foreign medical graduates during and after Graduate Medical Education training. J Gen Intern Med. 2019, 34:1337-41. 10.1007/s11606-019-05027-1

46. Conrad 30 waivers for physicians on J-1 visas: state policies, practices, and perspectives . (2021). Accessed: August 30, 2021: https://familymedicine.uw.edu/rhrc/publications/conrad-30-waivers-for-physicians-on-j-1-visas-state-policies-practice-

47. Malaya SY, Vasireddy D, Afzuri P, Alur RS: Primary care shortage in medically underserved and health provider shortage areas: lessons from Delaware, USA. J Fam Pract. 2013, 62:1127-30. 10.1093/fampra/cmt012

48. update the complexities of physician supply and demand: projections from 2015 to 2030 final report association of American medical colleges. (2017). Accessed: September 16, 2021: https://www.researchgate.net/publication/331556057_2017_Update_The_Complexities_of_Physician_Supply_and_Demand_Projec-

49. Arthur GK, Brooks R, Long ML: A language-cultural course for foreign psychiatric residents. Am J Psychiatry. 1979, 136:1064-7. 10.1176/ajp.136.8.1064

50. International Medical Graduate (IMG) Program. (2022). Accessed: April 13, 2022: https://www.uclahealth.org/family-medicine/IMG-program.

51. Ramaswamy R, Williams A, Clark EM, Kelley AS: Communication skills curriculum for foreign medical
graduates in an internal medicine residency program. J Am Geriatr Soc. 2014, 62:2153-8. 10.1111/jgs.13094
52. Coverdale JH, Balon R, Roberts LW: Which educational programs promote the success of international medical graduates in psychiatry training? Acad Psychiatry. 2012, 36:265-7. 10.1176/appi.ap.12050098
53. Yang HJ, Nelesen RA, Montros LP, Whitmore SM, Ferris FD: Comparison of international medical graduates with US medical students and residents after a four-week course in palliative medicine: a pilot study. J Palliat Med. 2013, 16:471-7. 10.1089/jpm.2012.0478
54. Sterles FS: Using film as the basis of an american culture course for first-year psychiatry residents. Acad Psychiatry. 2005, 29:109-4. 10.1176/appi.ap.29.1.109
55. Rosner F, Dantzker DR, Walerstein S, Cohen S: Intensive one-week orientation for foreign medical graduates entering an internal medicine residency program. J Gen Intern Med. 1993, 8:264-5. 10.1007/BF02600094
56. Myers GE: Addressing the effects of culture on the boundary-keeping practices of psychiatry residents educated outside of the United States. Acad Psychiatry. 2004, 28:47-55. 10.1176/appi.ap.28.1.47
57. Porter JI, Townley T, Huggett K, Warrier R: An acculturization curriculum: orienting international medical graduates to an internal medicine residency program. Teach Learn Med. 2008, 20:37-43. 10.1080/10401330701542644
58. Horvath K, Coluccio G, Foy H, Pellegrini C: A program for successful integration of international medical graduates (IMGs) into U.S. surgical residency training. Curr Surg. 2004, 61:492-8. 10.1016/j.cursur.2004.06.011
59. Katz C, Barnes M, Osta A, Walker-Descartes I: The Acculturation Toolkit: an orientation for pediatric international medical graduates transitioning to the United States medical system. MedEdPORTAL. 2020, 16:10.15766/mep_2374-8265.10922
60. Lineberry M, Osta A, Barnes M, Tse V, Atchook K, Schwartz A: Educational interventions for international medical graduates: a review and agenda. Med Educ. 2015, 49:865-79. 10.1111/medu.12766
61. Bruce DL, Brunner EA, Breihan JM, Menges RL: A public speaking course for foreign medical graduates. Anesthesiology. 1974, 41:580-8. 10.1097/00000542-197410000-00013
62. Fernández-Peria JR: Integrating immigrant health professionals into the US health care workforce: a report from the field. J Immigr Minor Health. 2012, 14:441-8. 10.1007/s10903-011-9496-2
63. Khan-Gikky S, Higgen S, Mosko M: Qualification programmes for immigrant health professionals: a systematic review. PLoS One. 2019, 14:10.1371/journal.pone.0224933
64. Kehoe A, McLachlan I, Metcalfe I, Forrest S, Carter M, Illing J: Supporting international medical graduates’ transition to their host country: realist synthesis. Med Educ. 2016, 50:1015-32. 10.1111/medu.13071
65. Hamoda HM, Sacks D, Sciolla A, et al.: A roadmap for observership programs in psychiatry for international medical graduates. Acad Psychiatry. 2012, 36:300-6. 10.1176/appi.ap.11040073