H-1B Visa Sponsorship and Physician Trainee Retention: A Single Institution Experience

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ABSTRACT

Background International medical graduates (IMGs) form a significant portion of the physician workforce in the United States and are vital in filling training slots due to a shortage of American medical graduates. Most often, IMGs require visa sponsorship, which must be solidified before applying for a residency or fellowship.

Objective We examined the association of H-1B visa sponsorship on retention of physician trainees within the state of Ohio.

Methods This was a single institutional study that examined all visa-sponsored residency and fellowship graduates who entered fully licensed clinical practice between 2006 and 2015. Practice location was ascertained immediately upon completion of training and at follow-up to determine which visa group (H-1B or J-1) were more likely to initially practice in Ohio after graduation and remain within the state.

Results Of 103 visa-sponsored residency and fellowship graduates, 42 were H-1B sponsored and 61 were J-1-sponsored. Fifty-two percent (22) of H-1B visa-sponsored trainees and 31% (19) of J-1 visa-sponsored trainees were retained in Ohio after graduation. At follow-up, 40% (17) of H-1B and 26% (16) of J-1 visa holders remained in the state.

Conclusions H-1B visa–sponsored trainees were more likely than those with J-1 visas to practice in the state of Ohio after graduation. Regardless of visa status, graduates tended not to change their geographical location over time.

Introduction

International medical graduates (IMGs) make up a quarter of the physician workforce in the United States, United Kingdom, Canada, and Australia.[1–4] According to a 2017 report from the Association of American Medical Colleges, 23.8% of residents and fellows across all specialties are IMGs training in accredited education programs.[5] Previous studies have examined the role of IMGs as more likely to practice in primary care and in underserved areas.[3,6,7]

After finishing residency or fellowship training, J-1 visa holders must leave the United States to return to their home countries. J-1 visa holders do have an option to waive the 2-year home residency requirement by practicing in a health professional shortage area (HPSA) or medically underserved area (MUA). In contrast, H-1B visa status does not require a 2-year home residency requirement, but cannot be held longer than J-1 visa status. In addition, the H-1B visa is considered an employment status unlike J-1 visa status, which is granted for educational purposes. Another difference is that H-1B visa holders may apply for a green card while holding this status, which is more difficult holding a J-1 visa. Lastly, a downside to the H-1B visa is the associated costs, which are significantly more than the J-1 program.

Studies of in-state retention of physicians suggest that the medical school or graduate medical education (GME) program the visa holder trains at may play a role.[8–10] One study suggested that the J-1 visa waiver program may improve retention of physicians in-state after completion of the 3-year obligation to practice in underserved areas.[11,12] However, it is not known whether H-1B visa status is associated with in-state retention after graduation.

This study examines the numbers of graduates, with different visa types, remaining in-state after training and whether this practice location changes over time.

Methods

Setting and Participants

Our training site is an urban, university-based medical center with currently 328 trainees across 14 residency and 18 fellowship programs.

Intervention

Data were collected from the GME department for all residents and fellows graduating from our training site between June 2006 and June 2015. The year 2015

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TABLE 1
Visa-Sponsored Trainees and Their Associated Educational Programs

H-1B Visa Status (n = 42)	No. (%)	J-1 Visa Status (n = 61)	No. (%)
Residency programs		Residency programs	
Family medicine	9 (21)	Anesthesia	1 (2)
Internal medicine	14 (33)	Family medicine	3 (5)
Obstetrics and gynecology	1 (2)	Internal medicine	17 (28)
Orthopedic surgery	2 (5)	Neurology	1 (2)
Psychiatry	1 (2)	Obstetrics and gynecology	5 (8)
Fellowship programs		Psychiatry	8 (13)
Cardiology	3 (7)	Fellowship programs	
Gastroenterology	1 (2)	Cardiology	4 (7)
Nephrology	5 (12)	Child & adolescent psychiatry	7 (11)
Oncology	4 (10)	Infectious disease	2 (3)
Pulmonary/critical care	2 (5)	Nephrology	5 (8)
		Oncology	2 (3)
		Pulmonary/critical care	5 (8)

was chosen as the H-1B visas were not sponsored by the university after 2012. Variables from the dataset included trainee name, residency/fellowship program, practice location after graduation, and visa status. Follow-up data for the December 2018 practice location was ascertained from internet searches and/or querying the National Provider Identifier Registry. Inclusion criteria comprised any resident or fellow who pursued fully licensed clinical practice immediately after graduation. Residents who directly joined fellowship programs were excluded from the study as they were still in training.

Initial and Follow-Up Retention Measures

Initial in-state retention was measured using visa type as a dichotomous independent variable ("H-1B" or "J-1") and practice location immediately after graduation as a dichotomous dependent variable ("in-state" or "out-of-state"). To assess retention within Ohio over time among each visa type, a categorical independent variable was constructed from matched pairs of visa-sponsored trainees ("initial practice location" and "follow-up practice location") and used the aforementioned dichotomous dependent variable to ascertain a trainee's in-state or out-of-state status.

The study was approved by the University of Toledo Biomedical Institutional Review Board.

Analysis

Descriptive statistics of the dataset were summarized in table form as counts and associated percentages. To determine whether visa requirement status represented independent populations, a Pearson's chi-square test for independence was conducted consisting of the trainees' visa status and practice location after graduation. Trainees were divided into 2 groups based on their specific visa requirement status. To evaluate whether a graduate's practice location changed over time, McNemar's test was conducted separately for each visa status group. This type of pretest-posttest analysis examined whether change occurred over time in the discordant pairs to test the equivalence in the proportions of in-state and out-of-state visa-sponsored trainees. All analyses were performed using SPSS Statistics 26 (IBM Corp, Armonk, NY). A P value of .05 or less was considered statistically significant.

Results

A total of 325 GME trainees met inclusion criteria and graduated between June 2006 and June 2015, of which 199 (61%) were IMGs. Of this group, 103 trainees held J-1 or H-1B visas. Seven different residency programs and 6 internal medicine fellowship programs were represented in the dataset. Descriptive statistics of the various academic programs are summarized further in TABLE 1.

Relationship Between Visa Type and Practice Location After Training

Twenty-two of 42 (52%) H-1B visa-sponsored trainees and 19 of 61 (31%) J-1 visa-sponsored trainees remained in Ohio immediately after graduation. There was a statistically significant relationship between visa type and practice location after training, as more H-1B status trainees chose to practice in Ohio immediately after graduation ($X^2 = 4.697$; df = 1; $P = .031$).

TABLE 2
Retention of Visa Status Trainees in Ohio

Visa Status	Within State, No. (%)	Out of State, No. (%)	*P* Value
H-1B visa status (n = 42)			
At graduation	22 (52)	20 (48)	.18
Follow-up	17 (40)	25 (60)	
J-1 visa status (n = 61)			
At graduation	19 (31)	42 (69)	.51
Follow-up	16 (26)	45 (74)	

Practice Location Change Over Time

The follow-up analysis for the 2 visa types shared similar results, as shown in TABLE 2. The proportions of H-1B status trainees (40%, 17 of 42) and J-1 status trainees (26%, 16 of 61) remaining in Ohio did not change over time.

Discussion

H-1B visa holders from our institution had a higher proportion of practice within Ohio when compared to J-1 visa holders. Regardless of visa status, graduates from our GME program with H-1B and J-1 visas tended not to change their geographical location over time.

One explanation for these differences seen between H-1B and J-1 visa holders may lie in the constraints of the J-1 visa program.[13] Physicians must secure a J-1 waiver through practicing in a HPSA or MUA. This process usually favors primary care physicians or psychiatrists who can work with specific populations in designated locations, which may limit opportunities for graduates of other specialties with J-1 visas to remain in Ohio.[14] These constraints do not apply to H-1B visa holders.

These findings align with other work, including a study by Koehler et al that found 51% of graduates from a Michigan GME program remained within the state.[8] In this study, nearly 47% of graduates chose Michigan as a practice location at some point after graduation. In our study, almost 40% of graduates with H-1B and J-1 visas remained in Ohio after training. In a study by Kahn et al, 57% of physicians remained within the state even after their J-1 visa waiver obligations had been met.[12] In our study, 13 of 19 (68%) J-1 visa-sponsored trainees continued to practice in Ohio after their 3-year commitment ended.

Our study of a single institution may limit generalizability to other settings and states. In addition, our follow-up period varied from 3 years (considering graduates of June 2015) to 12 years (considering graduates of 2006), which blends current trends with those from more than a decade ago. Lastly, the retrospective nature of the study required use of data from the Internet, which may have contained errors.

Future research can be conducted on this cohort in the next 5 to 10 years to determine if our graduates remained in Ohio. Also, we suggest other institutions use similar methods to assess whether their visa-sponsored trainees are remaining within the state.

Conclusions

This study suggests that H-1B visa holders are more likely to practice within Ohio after completing training than those with J-1 visas. In addition, the proportion of J-1 and H-1B visa trainees who stayed to practice within Ohio did not change after follow-up periods varying from 3 to 12 years.

References

1. Brotherton SE, Etzel SI. Graduate medical education, 2014–2015. *JAMA*. 2015;314(22):2436–2454. doi:10.1001/jama.2015.10473.
2. Mullan F. The metrics of the physician brain drain. *N Engl J Med*. 2005;353(17):1810–1818. doi:10.1056/NEJMsa050004.
3. Thompson MJ, Hagopian A, Fordyce M, Hart LG. Do international medical graduates (IMGs) "fill the gap" in rural primary care in the United States? A national study. *J Rural Health*. 2009;25(2):124–134. doi:10.1111/j.1748-0361.2009.00208.x.
4. Whelan GP, Gary NE, Kostis J, Boulet JR, Hallock JA. The changing pool of international medical graduates seeking certification training in US graduate medical education programs. *JAMA*. 2002;288(9):1079–1084. doi:10.1001/jama.288.9.1079.
5. Association of American Medical Colleges. ACGME Residents and Fellows Who Are International Medical Graduates (IMGs) by Specialty, 2017. https://www.aamc.org/data-reports/workforce/interactive-data/acgme-residents-and-fellows-who-are-international-medical-graduates-imgs-specialty-2017. Accessed February 19, 2020.
6. Hart LG, Skillman SM, Fordyce M, Thompson M, Hagopian A, Konrad TR. International medical graduate physicians in the United States: changes since

1981. *Health Aff (Millwood)*. 2007;26(4):1159–1169. doi:10.1377/hlthaff.26.4.1159.
7. 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(7):1337–1341. doi:10.1007/s11606-019-05027-1.
8. Koehler TJ, Goodfellow J, Davis AT, Vanschagen JE, Schuh L. Physician retention in the same state as residency training: data from 1 Michigan GME institution. *J Grad Med Educ*. 2016;8(4):518–522. doi:10.4300/JGME-D-15-00431.1.
9. Koehler TJ, Goodfellow J, Davis AT, Spybrook J, Vanschagen JE, Schuh L. Predicting in-state workforce retention after graduate medical education training. *J Grad Med Educ*. 2017;9(1):73–78. doi:10.4300/JGME-D-16-00278.1.
10. Nelson GC, Gruca TS. Determinants of the 5-year retention and rural location of family physicians: results from the Iowa family medicine training network. *Fam Med*. 2017;49(6):473–476.
11. US Citizenship and Immigration Services. Conrad 30 Waiver Program. http://www.uscis.gov/working-united-states/students-and-exchange-visitors/conrad-30-waiver-program. Accessed February 19, 2020.
12. Kahn TR, Hagopian A, Johnson K. Retention of J-1 visa waiver program physicians in Washington State's health professional shortage areas. *Acad Med*. 2010;85(4):614–621. doi:10.1097/ACM.0b013e3181d2ad1d.
13. Datta J, Zaydfudim V, Terhune KP. General surgery residency after graduation from US medical schools: visa-related challenges for the international citizen. *JAMA Surg*. 2013;148(3):292–294. doi:10.1001/jamasurg.2013.1365.
14. Ohio Department of Health. J-1 Visa Waiver Program. https://odh.ohio.gov/wps/portal/gov/odh/know-our-programs/primary-care-office/J-1-Visa-Waiver-Program/. Accessed February 19, 2020.

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