

Medically underserved areas and International Medical Graduates (IMGs) in the United States: challenges during the COVID-19 era

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ABSTRACT

Background: Given that nearly a quarter of the US physician workforce are international medical graduates (IMGs), many of whom remain on temporary work visas for prolonged periods due to processing delays, the pandemic has posed unique challenges to these frontline workers and has arbitrarily limited our physician workforce.

Methods: This is cross-sectional survey data obtained from IMGs on temporary work visas pertaining to their role in healthcare, impact of visa-related restrictions on their professional and personal lives was sent to the participants.

Results: A total of 2630 IMGs responded to the survey. Most of the respondents (1493, 56.8%) were physicians in active practice, with Internal Medicine (1684, 65.7%) being the predominant specialty encountered. 64.1% were practicing in Medically Underserved Areas (MUA) or Health Professional Shortage Areas (HPSA), with 45.6% practicing in a rural area. Nearly 89% of respondents had been involved with direct care of COVID-19 patients, with 63.7% assuming administrative responsibilities for COVID-19 preparedness. 261 physicians (11.5%) were subject to quarantine, while 28 (1.2%) reported a confirmed COVID-19 infection. 93% physicians expressed inability to serve in COVID-19 surge areas due to visa-related restrictions, while 57% had been approached by recruiters due to staffing shortages. 72% physicians reported that their families would be at risk for deportation in case of their disability or death. Most respondents (98.8%) felt that permanent resident status would help alleviate the above concerns.

Conclusion: A significant proportion of the US physician workforce is adversely impacted by work-based visa restrictions and processing backlog. Mitigating these restrictions could significantly bolster the current physician workforce and prove beneficial in our response to the COVID-19 pandemic.

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1. Introduction

The COVID-19 pandemic has imperiled our health-care workforce in an unprecedented manner in an era where health care access is severely compromised by significant physician shortage. As of December 2020, CDC reports that close to 200,000 front line health-care workers were infected by COVID-19 and almost 3000 of them have succumbed to the COVID-19 related complications [1].

Even before the pandemic, Association of American Medical colleges (AAMC) reports that the USA will see a shortage of 22,000 physicians by 2032 as the demand for physicians continues to grow faster than supply [2]. International Medical Graduates (IMGs) trained and licensed in the US have been a vital solution to the physician shortage in the US. American Medical Association (AMA) reports that the US trained International physicians constitute for 22.7% of licensed U.S. doctors and 62% of them practice in primary care specialties [3]. The IMGs in

primary care are about double the 31% of all U.S. physicians who work in a primary care specialty, helping to meet a critical workforce need [3].

The H-1B visa is a non-immigrant visa in the USA under the Immigration and Nationality Act, section 101 that allows employers in the USA to temporarily employ foreign workers in specialty occupations [4]. Most of the IMG physicians train while on a J-1 visa during their graduate medical education training. Post training, they are given the pathway to work on a H1-B visa for 3 years at a designated underserved facility or area [5]. IMGs continue to make vital contributions to the delivery of healthcare in the USA by being on the frontlines during the COVID-19 pandemic even as they face an increased risk of contracting the virus.

However, these physicians, in spite of actively practicing in the USA, are caught in green card backlog due to per country numerical limitation for employment-based immigration under Immigration

and Nationality Act (INA) [6]. With COVID-19 pandemic straining most of the resources, the healthcare workforce has been weakened due to immigration restrictions which is impacting the fight against COVID-19 with no security or stability. Their personal and professional lives are in jeopardy and the current restrictions limiting their ability to contribute to the fight against COVID-19.

2. Methods

2.1. Objectives and study duration

The objective of the study was to study the demographics of the US trained and licensed International Medical Graduates (IMGs) practicing in the USA during the COVID-19 pandemic, their contribution to the healthcare during the pandemic and the challenges they are facing at the personal, professional, family based and immigration fronts.

In the spring of 2020, i.e. in the midst of the pandemic, the lead investigators posted a cross sectional survey on a variety of social media platforms that are related to the IMGs. The survey was posted repeatedly on these platforms. The link for the surveys were made shareable to facilitate a maximum possible sample size.

2.2. Participants

All the International Medical Graduates (IMGs) residing in and in active practice in the USA were encouraged to do the surveys. The physicians in these social media platforms were already screened and verified based on their NPI numbers. All these physicians were IMGs in the USA distributed across several specialties and subspecialties and included practicing physicians, residents and fellows in training and prospective residents and ECFMG applicants.

2.3. Survey methods

The survey was designed and circulated using 'Survey Monkey.' Two screening questions were devised that ensured that only IMGs and specifically those practicing on a visa only were included as the study sample.

Personal, professional and family related demographic features were collected from the participants [Tables 1 and 2]. We assessed the impact of the Covid-19 infection and the pandemic on the physicians. [Table 3].

3. Results

A total of 2981 participants responded to the survey in this span of 24 days. 37 physicians out of the total respondents identified themselves as non-IMGs. 195

physicians were not on a visa status and were also excluded from the study sample. 22 dentists (not a part of the intended study) and 97 respondents with incomplete or unavailable data were excluded (Figure 1).

3.1. Demographic characteristics of IMGs in the sample during the COVID-19 pandemic

56.8% of the sample (1493 physicians) were post training and in active practice, and the rest were residents/fellows in training or medical school graduates. The mean age of these physicians was 34.6 years with a standard deviation of 5.2 years. Majority of them were residents of New York State, followed by Pennsylvania, Ohio, Michigan and Illinois in that order. The predominant specialties of the physicians in the study were Internal medicine (65.7%) followed by Pediatrics, Family medicine, Neurology and Psychiatry. Within Internal medicine, the most commonly practiced sub-specialty was Hospital medicine, followed by Cardiology, Nephrology, Critical care and Oncology in that order. 70.6% of these physicians were board certified in their respective specialties. 64.1% of these physicians practice in a Medically Underserved Area (MUA) or Health Professional Shortage Areas (HPSA) and 45.6% of them practice in a rural setting. 89% of them were directly involved in patient care of COVID-19 infected or suspected patients. Almost 64% of them are involved in administrative responsibilities of the Covid-19 preparedness in their hospitals like involvement in the command center, designing protocols etc (Table 1).

3.2. Immigration characteristics of the IMG physicians serving the pandemic

The immigration status of the IMG physicians is explained in Table 2. Almost 62% of them are practicing in a H-1B status, either with or without a J1 waiver requirement. About 45% of the sample size had their immigration petition approved for a permanent residency but most of them (81.6%) had not progressed to it due to the administrative backlog of the visa status to permanent residency processing as their country of origin was India. 43.3% of the physicians had a spouse or a child on a dependent visa and 77.6% of them were the primary visa holders of their families. 10.3% of the study sample had a child under 21 years of age who had not been born in the USA and would be considered as aging out after age 21 years if the physician continued to stay unprocessed in a timely manner to a permanent residency.

3.3. Challenges and setbacks for the IMG physicians during the pandemic

Several physicians were contracting COVID-19 while performing their clinical duties. 11.5% of the physicians were quarantined in this time period due to some sort of exposure to the virus. 28 physicians (1.2%) contracted COVID-19 and several physicians due to either exposure and being infected themselves with COVID-19 had lost a few work days. Almost one-third (30.4%) had seen loss of pay or a decrease in it due to a multitude of COVID-19 pandemic related situations and 19 of them (1%) lost their employment through the pandemic (Table 3).

About 90.6% expressed the concern that their families would go through hardships due to their disability or unemployment status during the pandemic (Table 3). 71.8% of them had the concern of their families being deported in the scenario of them being disabled or dying from COVID-19 infection. Furthermore, when USCIS suspended premium VISA processing services in March 2020, 65% of the physicians found this could affect their stay and ability to work in the USA. The most concerning issues for the physicians in order of ranking from most to least were the risk of getting COVID-19 infection, possibility of their family being deported, the risk of losing their job

and the risk of incurring financial hardship. 98.8% of the physicians did concur that the solution to their concerns and challenges would be getting processed further to the permanent residency status.

Recruiters or the hospitals had approached almost 57% of the physicians to participate in providing part time medical services at COVID-19 designated hot spots during the pandemic. 83.8% of these physicians were if possible willing to render medical services at COVID-19 designated hot spots due to existing or magnified physician shortage with rising patient load. Visa inflicted restrictions limited 93.1% of the physicians from providing additional coverage in these places. 67.8% were restricted from providing telemedicine services due to visa-based restrictions.

4. Discussion

While the whole medical community is struggling to meet the healthcare needs that have exponentially increased during the pandemic, IMGs are facing a multifaceted struggle as the work based restrictions continue to curb their scope of practice. Our study shows that a significant proportion of the frontline US physician workforce is adversely impacted by their immigration status, especially the ‘immigration

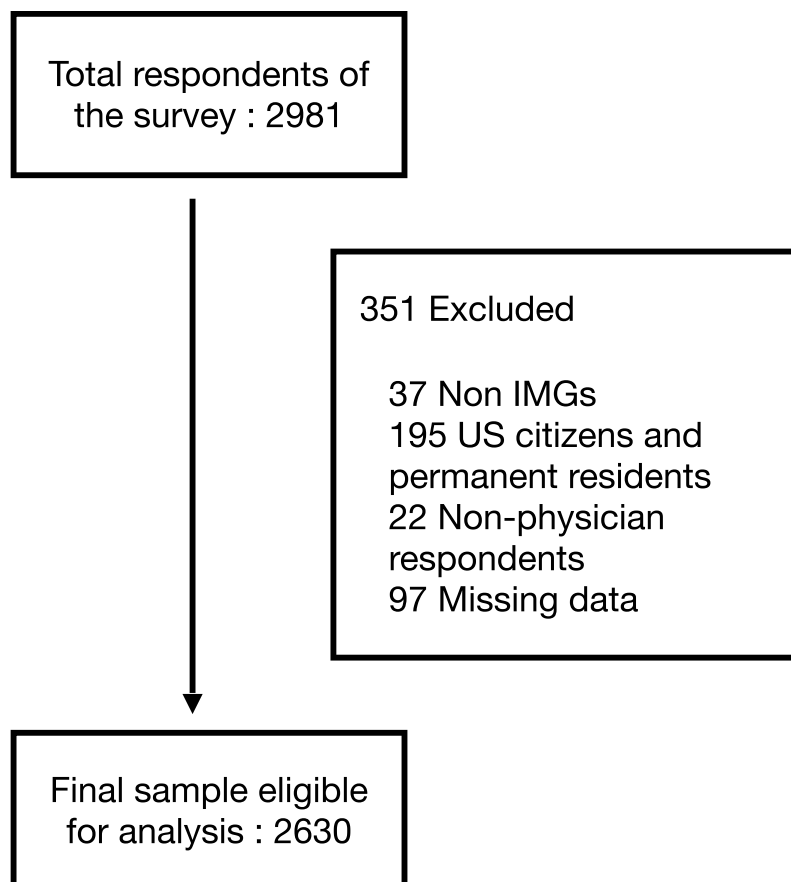


Figure 1. Sample selection of IMGs for the analysis from the survey.

backlog' during the COVID-19 pandemic. Easing these restrictions could significantly bolster our already existing physician workforce and prove beneficial fighting the COVID-19 pandemic.

Even before the pandemic, with significant representation in primary care specialties and promoting access to healthcare in both sub-urban and rural communities, IMGs played an important role in delivering healthcare to underserved America. With a looming crisis in the supply of internists in different parts of the country, IMGs always had an indispensable role in COVID-19 front line specialties like internal medicine, hospital medicine, critical care and infectious diseases [6,7]. IMGs constitute 24.5% of all actively practicing specialists in the USA and constitute a significant percentage of the front line physician workforce to combat the COVID-19 pandemic [8,9]. Our study findings specify that nearly 65.7% of the physicians are involved with primary care in different healthcare settings across the country and among them 64.1% of the physicians were practicing in medically underserved areas. We observed the significance of IMG physicians contributing toward healthcare during the COVID-19 pandemic with 74.2% in the frontline specialties and 89% involved with direct care of COVID-19 patients. We also noticed that a significant number of them were even involved in hospital and system administration working as command directors or protocol designers for pandemic preparedness.

A major proportion of the IMGs use J-1 exchange VISA to complete their residencies in the US, with the expectation that they will return to their home countries and spend at least two years before coming back to the USA [10]. There are several J1-VISA waiver programs like the Appalachian Regional Commission (ARC) program, HHS Visitor exchange program, Delta Regional Authority (DRA) program and the Conrad J1-waiver 30 program. These programs were designed with the primary purpose of retaining the IMG physicians and waiving their 2-year home country requirement by asking them to serve in the areas with inadequate physician access [11]. Our survey does show that 45.6% of IMGs are fighting the COVID-19 pandemic in rural communities and almost 64% of them are practicing in a medically underserved area.

Once they complete their assigned service in the underserved areas, these IMG physicians become eligible to apply for a permanent residency in the USA, often referred to as a 'green card' [12,13]. However, due to the limited annual quota of green cards, which are allocated based on the country of birth of the applicant, the wait times to acquire a permanent resident status can vary widely among applicants based on their country of origin. Large populations and highly educated countries like India and China are the primary producers of IMG physicians in the US. The physicians from these countries have the longest wait times before they become eligible for a permanent residency,

Table 1. Baseline demographics and patient care characteristics of IMGs in the COVID-19 pandemic.

Characteristic	Response
Age, mean (SD), y	34.65 (5.15)
Professional status, No. (%) (n = 2630)	
Attending physician	1493 (56.8)
Fellow in training	493 (18.7)
Resident in training	608 (23.1)
Medical school graduate	36 (1.4)
State of Residence, No. (%) (Top 5 states) (n = 2630)	
New York	312 (11.9)
Pennsylvania	181 (6.9)
Ohio	120 (4.6)
Michigan	119 (4.5)
Illinois	116 (4.4)
Primary specialty, No. (%) (n = 2630)	
Internal Medicine	1684 (65.7)
Pediatrics	265 (10.3)
Family Medicine	138 (5.3)
Neurology	120 (4.6)
Psychiatry	119 (4.5)
Anesthesia	57 (2.2)
Others	325 (12.7)
Board certification status, No. (%) (n = 2562)	
Board Certified	1809 (70.6)
Board Eligible	475 (18.5)
Not Applicable	278 (10.8)
Practice in a Medically Underserved Area (MUA) or Health Professional Shortage Area (HPSA), No. (%) (n = 2294)	1471 (64.1)
Practice in a rural setting, No. (%) (n = 2285)	1042 (45.6)
Involved in direct patient care of COVID-19 positive or suspected patients No. (%) (n = 2275)	2025 (89)
Practicing in a 'front line' COVID-19 related specialty No. (%) (n = 2275)	1688 (74.2)
Administrative responsibilities for COVID-19 pandemic preparedness (Incident Commander etc) No. (%) (n = 2275)	1449 (63.7)

thus defining the phenomenon of ‘immigration backlog’ [14]. The data shows that 45% of the physicians serving the pandemic have their permanent residency immigration petition approved. However, 81.6% of the physicians could not have their petition completed due to the administrative backlog aka ‘immigration backlog.’

Immigrant physicians practicing on a work visa are authorized to work only under an employer who has filed an H-1B petition with U.S. Citizenship and Immigration Services [15]. Even in the midst and peak of the COVID-19 pandemic, many hospitals and employers could not apply for a work permit for these front line physicians. Any given day, applying for a new H-1B petition for a physician is a prolonged multistep

process that might take up to several months. These restrictions left IMGs unable to serve the pandemic in the areas that needed them the most. In our study, though 57% of the sample physicians were approached by a recruiter or a hospital to provide part time services and though a significant majority of them (83.8%) were willing to offer such services, 93% of them could offer coverage in such designated COVID-19 hotspots. During the early peak of the pandemic, states like New York waived the requirement of state license to practice in the hotspots, however, VISA was a limiting factor for the state to recruit IMG physicians to fight the pandemic [16].

The federal administration expanded Medicare coverage of telemedicine services and relaxed

Table 2. Immigration characteristics of the IMGs in the COVID-19 pandemic.

Characteristic	Response
Current VISA status, No. (%) (n = 2630)	
H1b (Not requiring J1 waiver requirement)	762 (29)
H1b (Completed J1 waiver requirement)	405 (15.4)
H1b (Currently on a J1 waiver program)	459 (17.5)
J1 VISA (Training, Research)	863 (32.8)
Others	142 (5.4)
Have an approved petition for Permanent Residency (I-140), No. (%) (n = 2630)	1190 (45.2)
Have an immediate family member on a dependent VISA, No. (%) (n = 2630)	1138 (43.3)
Have a child under 21 years and not a US citizen, No. (%) (n = 2630)	272 (10.3)
Primary VISA holder of the family	2040 (77.6)
No. (%) (n = 2630)	
Immigration backlog based on country of origin, No. (%) n = 2247	
No backlog	103 (4.6)
Some backlog (3–6 years)	311 (13.8)
Extreme backlog (50-150 years)	1833 (81.6)

Table 3. Practice and Immigration related challenges of IMGs in the COVID-19 pandemic.

Characteristic	Response
Practice related challenges	
Quarantined due to COVID-19 exposure. No. (%) (n = 2275)	261 (11.5)
Infected with COVID-19 virus.	28 (1.2)
No. (%) (n = 2275)	
Lost work days/shifts due to COVID-19 exposure or infection. No. (%) (n = 2275)	188 (8.3)
Taking a pay cut/loss of revenue due to the pandemic related issues	622 (30.4)
No. (%) (n = 2045)	
Number of work days lost, mean (SD), days (range 0-45 days)	0.8 (3.1)
Became unemployed due to the pandemic related issues No. (%) (n = 2057)	19 (1%)
Immigration challenges	
Will your family face hardship due to your unemployment or disability?	1988 (90.6)
No. (%) (n = 2193)	
Is your family at risk of deportation in case of your death or disability?	1433 (71.8)
No. (%) (n = 1996)	
Does suspension of premium VISA processing by USCIS affect your stay or work in the US? No. (%) (n = 2259)	1470 (65.1)
Do visa restrictions limit you from providing additional coverage in places of need (like NY, Seattle, New Orleans etc) during COVID-19 pandemic? No. (%) (n = 2091)	1984 (93.1)
Are you willing to serve in COVID-19 hot spots where there is need for physicians in front lines but unable to do so because of immigration restrictions?	1854 (83.8)
No. (%) (n = 2212)	
Do visa work restrictions limit you from providing telemedicine services to patients? No. (%) (n = 1927)	1307 (67.8)
Did a recruiter or a hospital reach you to work at a site, city or state due to staffing shortages during the COVID-19 pandemic? No. (%) (n = 2084)	1188 (57)
Do you think a Permanent Residency status will help resolve most of the professional and personal concerns mentioned earlier? No. (%) (n = 2247)	2220 (98.8)
As an IMG, what is most concerning to you in the COVID-19 pandemic era?	
Mean score (range 1-4) (n = 2275)	
Risk of getting infected with COVID-19 virus.	3.02
Risk of family deportation due to loss of employment or death.	2.38
Risk of losing a job due to the pandemic related issues.	2.33
Risk of facing financial hardships.	2.27

requirements related to the Health Insurance Portability and Accountability Act [17]. This allowed patients to access doctors using a wider range of communication tools, such as FaceTime and Skype. Most states waived license requirements for telemedicine [18]. Unfortunately, these actions were far from adequate in solving the crisis considering the fact that work VISA restrictions also limited 67.8% of them from providing telemedicine services.

Though conducted in the earlier part of the pandemic, we found that 11.5% of the IMG physicians were already quarantined due to symptoms related to COVID-19 and nearly 1.2% of the physicians were infected by the virus. As of December 2020, more than 180,000 healthcare providers have succumbed to the disease with the USA reporting almost 3000 healthcare professional deaths [19]. We estimate the number of IMG physicians infected from the disease is way higher than what was reported in our study. If IMG physicians were to succumb to the pandemic, or if they were disabled and could no longer fulfill the work visa, it would put their family at risk of being deported. A large majority (43.3%) of the IMGs in our sample had an immediate family member like a spouse or a child on a dependent VISA. A significant majority, 77.6% of them were the primary VISA holders of their families. A substantial number of physicians (10.3%) of them had a child who could 'age out' i.e., a child under 21 years of age and not born in the USA. An 'aged out' child would have no choice but leaving the country or finding an independent VISA for himself or herself as they cannot be a dependent of the parent's VISA [20]. With 81.6% of the physicians facing immigration backlog due to their temporary immigration status, even the slightest delay in the processing of VISA services, the physicians are put at risk of deportation from the country with their ongoing stay at risk. Most of the immigrant physicians are the primary petitioners for visas that also support dependents including spouse and children and in the case of the death of the physician due to COVID-19, who is the primary visa holder, the family will lose the legal status and have to be deported immediately.

Gender-based healthcare disparities, race and ethnicity-related disparities have foiled our healthcare system at multiple levels [21,22]. As of 2021, 24% of the US physician workforce is IMG physicians and the challenges faced by this subset of physicians further hampers the care of the people in the underserved and rural communities. Understanding the factors that led to the shortage of physician supply during the COVID-19 pandemic in the USA is very critical. According to 98.8% of the physicians in this sample, a permanent residency status will solve not

only the present situation during this pandemic. Diverse provider workforce with the patient population turning more heterogeneous builds up resilience of the healthcare system in various specialties to combat any challenges that may hinder access to healthcare in every corner of the country by augmenting the healthcare workforce and to fill up the practice gap left by US medical graduates.

Immigrant physicians have no flexibility to travel to areas to provide services where they are needed the most during this pandemic due to work-based visa restrictions. These work-based restrictions limit the IMGs to port and work in epicenters to meet the needs of the community. They are not only limited geographically but also limited in the scope of practice as listed at the time of application for H1-b. For any change reflecting the scope or location, the H1b visa holder has to apply and go through a time consuming and expensive process of re-application or amending the current application. But during these times of national emergency, all the state and federal processes are further delayed and hassle ridden further adding to their burden. Certain specialties like pediatrics where there are far fewer residency positions reflecting onto practicing pediatricians compared to other specialties, these immigration burdens can have an exponential ripple effect [23]. Some IMGs had to go through additional paperwork just to provide telehealth services in some states. There have been small-scale studies concentrating on certain key states like Delaware and Kentucky trying to understand the hardships faced by IMGs [24,25].

5. Conclusion

Despite forming about a quarter of the physician workforce, IMGs have been facing professional and personal hurdles that have hampered efficient patient care for those in their communities. The COVID-19 pandemic has magnified existing shortcomings and created new ones for the IMGs. Swift legislative action in times like these should and must take precedence to strengthen the physician workforce and prioritise timely medical care access to the citizens of the USA as the nation takes the leading spot for the number of COVID-19 cases on the global platform.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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