

February | 2014

Diagnosing Healthcare in America: Impacts of Immigrants and Occupational Licensing

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Acknowledgements

We would like to thank Dr. Morris Kleiner for developing this capstone project at the Humphrey School of Public Affairs, as well as for his continual support throughout the project. We would also like to thank Dr. Richard Todd from the Federal Reserve Bank of Minneapolis for affording us the opportunity to explore the intersection of immigration, occupational licensing, and healthcare with the Bank. Thank you to Brenton Peterson as well for graciously sharing his research perspectives and data with us. Our hope is that this paper will provide useful information not only to our client, the Federal Reserve Bank of Minneapolis, but also to policymakers and other stakeholders, future researchers, and the general public.

Abstract

We examine the confluence of three policy streams—immigration, occupational licensing, and healthcare—with a focus on physicians and direct care workers (nursing assistants, home health aides, and personal care aides). We attempt to determine the impact of occupational licensing requirements for both foreign-born international medical graduates and direct care workers on immigrant employment levels, as well as the impact of immigrants in these occupations on both the quality and accessibility of healthcare services. The methods employed included a literature review, a qualitative analysis based on interviews with immigrants and healthcare administrators, and quantitative analyses of the physician and direct care workforces. Foreign-born international medical graduates and immigrant direct care workers account nationally for roughly twenty percent of both the physician and direct care workforces. International medical graduates (IMGs) comprise a disproportionately high percentage of primary care physicians and are more likely to practice in rural high poverty areas and underserved areas relative to U.S. medical graduates (USMGs). However, different residency length requirements for IMGs and USMGs to attain state licensure and the limited number of available medical residencies restrict the ability of foreign-born IMGs to practice in the U.S. For immigrant direct care workers, training costs, language barriers, and cultural competency are the largest obstacles to entry into the occupation. Our research also indicates that foreign-born IMGs and immigrant direct care workers provide medical care of equal or higher quality than their native counterparts. However, the potential of immigrants to help fill the projected future demand for physicians and direct care workers will be limited without appropriate changes to immigration policy and the residency match system.

Keywords: occupational licensing, immigration, physicians, international medical graduates, direct care workers

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Executive Summary

At the confluence of three of the most important policy streams in American politics—healthcare, immigration, and occupational licensing—this paper analyzes the role of immigrants in both high-skill and low-skill licensed healthcare occupations, with a specific focus on physicians and direct care workers, including nursing aides, home health aides, and personal care aides. In particular, we examine the impacts of licensing requirements on the ability of immigrants to gain employment in these professions, as well as the impacts of licensure on public access to healthcare services and the quality of care received.

The Patient Protection and Affordable Care Act (ACA) was enacted into law in March 2010 with the goals of lowering the rate of uninsured and increasing the quality and affordability of healthcare in the United States. This comprehensive overhaul of the U.S. healthcare system will likely reduce the number of uninsured nonelderly Americans by 32 million by 2019. As a result of this increase in the number of insured, together with an aging population and technological advancements, occupations within the healthcare sector—particularly physicians and direct care workers—are among the fastest growing in the United States. Filling the projected demand for these occupations is crucial to the long-term vitality of the U.S. healthcare system.

The demand for direct care workers in the U.S. is projected to grow 52% between 2010 and 2020. Two occupations in this employment category, home health aides (70% growth) and personal care aides (69% growth), are projected to be the two fastest growing occupations in the country during this decade. Between 2010 and 2020, demand for physicians is also projected to grow 24%, well above the 14% average growth rate for all occupations. Growth in the number of employment opportunities for physicians and direct care workers is particularly important due to

the fact that at the national level these occupations rely on immigrants as a higher percentage of their total workforce than other occupations. In both professions, immigrants represent over 20% of the total workforce, which is larger than their representation in the overall workforce (16%). American physicians are the highest paid in the world, which makes practicing in the U.S. increasingly desirable for highly skilled foreign medical graduates. We also found that immigrant direct care workers receive, on average, slightly higher wages than their native-born counterparts.

Physicians and direct care workers are also licensed at a higher rate than other occupations. Largely because quality is of the utmost importance in the healthcare sector, 76% of all healthcare occupations are licensed, compared to the national average of only 29% for all occupations. While physicians have long been universally licensed across all states, licensing requirements for direct care workers are also becoming increasingly stringent. For immigrants, the path towards licensure is a difficult process, as hurdles must be overcome both in the immigration process and in meeting all the requirements necessary for state licensure.

The vast majority of foreign-born international medical graduates (IMGs) seeking employment as physicians in the U.S. enter the country on either an H-1B or J-1 visa. While the H-1B visa requires employer sponsorship, the J-1 visa is classified as a cultural exchange visitor visa and is sponsored by the Educational Commission for Foreign Medical Graduates (ECFMG). When the J-1 visa has expired (after a maximum of seven years), foreign-born IMGs are required to return to their country of origin for two years, unless they are able to obtain a Conrad 30 waiver, which allows foreign-born IMGs to stay in the U.S. for an additional three years by practicing in underserved areas.

International medical graduates are an important segment of the primary care physician (PCP) workforce with approximately 41% of IMGs serving as PCPs, in contrast to 33% of domestically trained U.S. medical graduates (USMGs). International medical graduates who are PCPs are twice as likely to serve in urban versus rural areas. However, the percent of rural PCPs represented by IMGs has increased by more than 45% over the past three decades, which reveals the increasing importance of IMGs in rural areas. International medical graduates currently represent approximately 20% of rural PCPs, and are more likely to serve in rural persistent poverty counties relative to USMGs (12.4% versus 9.1%).

All medical graduates, including foreign-born and foreign-trained (U.S. citizen) IMGs and USMGs, must complete their residency requirement in a U.S. medical facility in order to practice as a physician in the United States. Furthermore, all states require USMGs and IMGs to complete a portion of their residency before receiving their license to practice independently; however, the required length varies across states from 12 to 36 months. As a result, physicians can receive a license before completing their residency and before receiving board certification. Thirty-seven states require IMGs to complete longer residencies than USMGs to attain licensure, which results in fewer IMGs practicing in states with lengthier residency requirements. Assuming there are no restrictions to increasing the number of IMGs practicing in the U.S., 640 additional IMGs would have entered the U.S. from 2005-2009 by equalizing the length of states' residency requirements for USMGs and IMGs. Minnesota and North Dakota would have gained six IMGs and one IMG, respectively. Residency equalization would have saved over \$280 million nationally in 2010 (\$5.5 million per state, on average) due to reduced emergency room, outpatient, and inpatient visits.

However, it is the residency requirement that is the largest bottleneck for foreign-born IMGs attempting to practice in the United States. The number of residency positions available grew from 20,192 in 1991 to 23,421 in 2011, a 0.883% yearly increase, while the number of foreign-born IMGs applying for postgraduate year one residencies (PGY-1) increased more than threefold from 2,259 in 1991 to 7,568 in 2013. The residency match rate for seniors in U.S. medical schools (future USMGs) has remained virtually constant since the early 1980s, averaging 94%. In contrast, the match rate for foreign-born IMGs has fluctuated from less than 25% in 1985 to nearly 65% in 1991 to 48% in 2013. Over the past three years, the match rate for foreign-born IMGs has averaged 43%, which has resulted in only 9,097 of 21,055 foreign-born IMG National Residency Match Program (NRMP) applicants being placed in a residency. The low match rate of foreign-born IMGs, in combination with the overall limited number of residencies, severely restricts the ability of foreign-born IMGs to practice in the U.S.

Immigrants seeking to enter low-skill direct care occupations face different hurdles. Currently, no employment visa is available for immigrants with limited skills. As a result, the vast majority of immigrants finding employment as direct care workers entered the U.S. through more conventional means, such as family sponsorship or as refugees or asylees. These immigrants often face challenges associated with language barriers, cultural competency, and training costs. Because lower-skilled immigrants entering direct care occupations have fewer resources to complete their training and gain proficiency in these areas, several states have begun to develop microfinance options to assist them. The nonprofit sector and private employers, such as nursing homes, that need individuals to fill their direct care positions have also begun to provide financial assistance and on-site training for individuals seeking to become direct care workers.

Little previous quantitative research has been conducted on direct care workers, including assessment of the impact of occupational licensing on direct care workers and the impact of the relatively high number of immigrant direct care workers on quality of service. Our analyses of the impacts of licensing on immigrant direct care workers did not find that more stringent licensing requirements for nursing aides affect the earnings of immigrant nursing aides or the participation of immigrants in the nursing aide labor force. Similarly, our analyses suggest that the impact of immigrants on the quality of the direct care workforce is either neutral or positive.

Immigrants currently comprise a disproportionate number of physicians and direct care workers, and meaningful policy would be needed to allow immigrants to further fill the increasing demand in these occupations. Increasing federal funding for medical residency positions would potentially loosen the residency bottleneck for foreign-born IMGs, thereby increasing the number of foreign-born IMGs allowed to practice medicine in the U.S. Allowing these additional foreign-born IMGs to practice in the U.S. would require increasing the number of H-1B and J-1 visas available annually to non-U.S. citizens. Further, increasing the number of Conrad 30 waivers available to each state, which are currently limited to 30 waivers annually, would potentially reduce the shortage of PCRs in rural and underserved communities. Filling available positions in the physician and direct care workforce is of the utmost importance for the long-term viability of the U.S. healthcare sector, and immigrants will likely play an increasingly vital role in fulfilling this demand.

I. Introduction

At present, healthcare, immigration, and occupational regulation are viewed as critically important policy areas. The recent passing of the Patient Protection and Affordable Care Act (ACA) has dramatically shifted the healthcare landscape and will likely result in the extension of coverage to millions of previously uninsured Americans. Comprehensive immigration reform is currently in high-level deliberation in Congress, and if enacted in some form, will likely reshape immigration policies for immigrants in the healthcare sector. Lastly, the impacts of occupational licensing on labor markets continue to become more pronounced, as the number of occupations requiring licensure continually increases and existing requirements become more stringent.

The ACA is projected to tremendously increase the demand for physicians and healthcare support staff in upcoming decades. This increasing demand comes at a time when relatively large segments of the American population are already categorized as medically underserved, particularly those in rural and low-income urban areas. In particular, international medical graduates (IMGs) play an important role in filling the physician gap in underserved areas, and may become an increasingly important factor as the demand for physicians grows over the next 15 years. International medical graduates consist of both U.S.-born individuals (U.S.-born IMGs) and foreign-born individuals (foreign-born IMGs) who received their training and degree from a medical school outside of the U.S. and Canada.

Additionally, immigrants currently comprise a disproportionate share of the number of direct care workers (nursing aides, home health aides, personal care aides) in the United States. The demand for direct care workers is expected to increase as a result of an aging population and the increased availability of long-term care services. At the same time, immigrants seeking to

work in healthcare face challenges due to occupational licensing, which may limit the ability of immigrants to help fill the future demand for healthcare workers.

While extensive research has been conducted on healthcare, immigrants, and occupational licensing individually, little research has been conducted at the intersection of these policy streams. Our research aims to fill this knowledge gap by answering the following questions:

1. How does licensing affect the ability of immigrants to gain high-skill and low-skill employment in the healthcare sector; in particular, as either physicians or direct care workers?
2. How do the occupational licensing requirements that immigrants face affect the quality of healthcare and the public's access to medical services?

To answer these questions, we used a mixed-methods approach, making use of both qualitative and quantitative analyses. Our qualitative research consisted of interviewing fifteen respondents, each representing various viewpoints both within the immigrant community and from the perspective of healthcare administrators. These interviews were set in context by an initial review of the literature on immigrants in licensed occupations, both in general and in the healthcare sector specifically. Our quantitative analysis consisted of our own analyses conducted using American Community Survey (ACS) data and immigration records from the Department of Homeland Security. Our own calculations were then complemented through a review and inclusion of relevant findings from previously conducted, peer-reviewed quantitative research.

The paper is organized as follows. First, we provide a description of direct care workers to familiarize readers with their role in the provision of medical care. Second, we discuss each of the three policy streams (occupational licensing, immigration, and healthcare) and their

interactive impacts. Then, we discuss the most salient issues raised by our qualitative analyses, followed by our quantitative analyses of physicians and direct care workers.

II. Background

Description of Direct Care Workers

The direct care sector consists of workers who provide care and personal assistance to individuals needing assistance eating, dressing, bathing, and negotiating other daily tasks (National Research Council, 2008). Direct care workers typically work with the elderly, the disabled, and the chronically ill.

The ACA defines “direct care workers” as consisting of the following occupations: (i) nursing aides (often referred to as certified nursing assistants or CNAs), (ii) home health aides, and (iii) personal care aides.¹ These three types of workers provide similar types of care, but the settings in which they work vary.

- (i) *Nursing Aides.* Nursing aides work primarily in nursing homes and assisted living facilities, though some may work in hospitals. Their duties include feeding, bathing, dressing, grooming, and moving patients, as well as changing linens. They also do some basic clinical tasks such as range-of-motion exercises and blood pressure readings. Studies show that in nursing homes, nursing aides provide 80%-90% of the care (Pennington, 2003). Nursing aides generally work under the supervision of nursing staff (National Research Council, 2008).
- (ii) *Home Health Aides.* Home health aides have largely the same duties as nursing aides, but work in a patient’s home or a community-based setting (e.g., senior living facility). Home health aides generally work under the supervision of a nurse or

¹ The ACA also considers “psychiatric aides” as direct care workers. This paper, however, does not include psychiatric aides as direct care workers for three reasons. First, there are relatively few psychiatric aides (77,880 nationwide in 2012 as estimated by the U.S. Bureau of Labor Statistics), and the psychiatric aide occupation will experience only modest growth over the next decade, as forecasted by the Bureau of Labor Statistics. Second, respondents in the American Community Survey (ACS) working as psychiatric aides are difficult to identify for purposes of our analysis because they are not separately identified in the ACS occupational codes. Third, much of the secondary literature does not include psychiatric aides as direct care workers.

therapist (National Research Council, 2008). Often their responsibilities include light housekeeping, preparing food, and tracking patients' prescriptions.

- (iii) *Personal Care Aides.* Personal care aides work in private homes or community-based facilities, including rehabilitation facilities. Various titles are used for personal care aides, including homemaker, caregiver, companion, and personal attendant. Like nursing aides and home health aides, personal care aides assist patients with daily tasks, but unlike nursing aides and home health aides, personal care aides do not provide medical services. Personal care aides are often hired in addition to other health workers, such as hospice workers, and their responsibilities may include providing companionship (National Research Council, 2008).

According to 2011 Bureau of Labor Statistics data, nursing aides make up approximately 34% of the direct care workforce, while home health aides and personal care aides represent approximately 43% and 23% of the direct care workforce, respectively.

The employers of nursing aides are generally the institution or facility in which they work, such as a nursing home (National Research Council, 2008). Home health and personal care aides are generally employed by organizations or agencies that deliver in-home services and support for clients in other settings. Some home health and personal care aides are also hired directly by patients under publicly-financed programs that permit patients to hire their own aides for in-home services. In addition, a number of home health and personal care aides work for individuals under private arrangements. Home health and personal care aides working under private arrangements are often referred to as a "grey market" because they are unaccounted for in government statistics (Seavey & Marquand, 2011).

Occupational Licensing

Occupational licensing can be defined as when “entry into an occupation cannot occur except with the permission of the State, and sellers and buyers cannot transact and exchange the relevant services of the occupation unless the state has given its permission” (Rottenberg, 1980). Therefore, any individual seeking to practice in an occupation that is licensed must first receive consent from the state in the form of licensure.

Licensed occupations can be found in a diverse range of industries in the U.S., including interior design, childcare, law, cosmetology, dentistry, and healthcare, among others. In the U.S., approximately 800 occupations are licensed in at least one state (Council on Licensure, Enforcement and Regulation, 2004). In total, nearly 40% of the U.S. labor market is required to obtain a license or certificate from a governing body (Kleiner, 2013), up from 4.5 % of the workforce that was required to obtain a license immediately following World War II (Kleiner and Krueger, 2010).

The rise in occupational licensing has had serious and controversial effects on service costs, service access, political control of entry to occupations, and differential impacts on labor markets. As requirements for entry into an occupation increase, the number of individuals available for employment in that occupation is expected to decrease. Kleiner (2013) estimates that growth in employment for particular occupations was 20% higher in states not requiring licensing compared to states requiring licensing in the same occupations. Evidence also suggests a positive impact of licensing on price and services (Kleiner, 2006).

Another criticism of occupational licensing is the political nature of control of access into an occupation. In particular, when licensing boards, which often set licensure requirements, are comprised of members of the same occupation, an incentive may exist for boards to set standards

that are beneficial to the current workforce in that occupation. However, these standards may be disadvantageous to new entrants and the general public. Finally, occupational licensing often leads to differential outcomes for major groups in the labor force. Immigrants, who may suffer from language barriers and significant financial constraints, are particularly likely to be impacted by occupational licensing.

Arguments in favor of licensure are centered on improving the quality of services delivered by ensuring reasonable standards of practice (Kleiner, 2013). Ensuring high quality of services throughout an occupation is a particularly common argument for licensing requirements in the healthcare sector. However, research across industries generally finds that occupational licensing has little impact on improving the quality of services (Kleiner, 2013).

Occupational Licensing in Healthcare

Over 76 % of healthcare workers in the U.S., excluding physicians, work in licensed occupations (Kleiner and Park, 2010). Further, additional standards affect large segments of the healthcare labor force (Kleiner and Park, 2010). Additional regulatory requirements include limiting the scope of practice of particular occupational groups, requiring a formal supervisory relationship and review between members of two different occupational groups, and limiting the ability of some groups to be reimbursed by health insurance companies. Occupational licensing exists among all skill levels of healthcare occupations, from direct care workers to nurse practitioners and physicians.

At the state level, licensing requirements often differ for healthcare professionals. Although physicians, nurse practitioners, and direct care workers are universally licensed in all states and the District of Columbia, occupational requirements for direct care workers differ considerably across states.

Licensure of physicians. Physician licensing occurs at the state level through state medical boards. While physicians are currently universally licensed, the extent of licensing and licensing requirements has changed dramatically over the past 140 years. The first physician licensing laws were passed by ten states in the 1870s to control access to the market and improve medical quality (Baker, 1984). By 1881, half of U.S. states had implemented physician licensure laws (Baker, 1984). Occupational licensing of physicians changed dramatically in the early 20th century following the publication of the influential Flexner Report in 1910. The Flexner Report resulted in the American Medical Association gaining *de facto* control of licensing and regulation of physicians across all states through the Federation of State Medical Boards (Beck, 2004; FSMB).

Before receiving an occupational license in the state in which a physician intends to practice, all U.S. medical graduates (USMGs) and IMGs must complete the U.S. Medical Licensing Exam (USMLE) sequence, which is comprised of three steps and four exams. Completion of the USMLE is a standardized requirement across all U.S. states and territories. Step 1 is a multiple-choice exam “designed to test how well the examinee applies basic, integral science concepts to clinical scenarios” (Kaplan Medical). Step 2 of the USMLE is comprised of two separate exams. The first of these exams is a multiple-choice clinical knowledge (CK) exam “designed to determine whether the examinee possesses the medical knowledge and understanding of clinical science considered essential for the provision of patient care under supervision” (Kaplan Medical). The second Step 2 exam is a “hands-on,” clinical skills (CS) exam “that tests the examinee's clinical and communication skills through his or her ability to gather information from standardized patients, perform a physical examination, communicate the findings to the patient, and write a patient note” (Kaplan Medical). Step 3 is a multiple-choice

exam that assesses “the examinee's ability to apply medical knowledge and the understanding of biomedical and clinical science essential for the unsupervised practice of medicine” (Kaplan Medical).

All physicians intending to practice in the U.S. are also required to complete a residency in their field of specialization. Trainee physicians are placed in a residency program via the National Residency Match Program (NRMP). The length of the residency varies from three to eight years depending on the field of specialization, with primary care specialties tending to have shorter residency lengths than surgical specialties. The number of residencies available to USMGs and IMGs has remained relatively stagnant since the late 1990s due to a 16-year cap on federal support for residency training. Graduate Medical Education residency positions are funded primarily from Medicare, with roughly \$8.5 billion paid annually to teaching hospitals.

Teaching hospitals and academic medical institutions spend more money educating resident physicians than those physicians bill for medical care and labor; Congress acknowledges these costs by providing hospitals with supplementary Medicare funds for each physician in residency (American Hospital Association, 2009). Arguments in favor of public funding of graduate medical education include that it facilitates the training of highly competent physicians, supports teaching hospitals that provide healthcare to underserved populations, and also helps foster medical innovations that occur in educational environments (Rich, 2002). However, Medicaid, the Veterans Administration, the Department of Defense, individual states, and private payers also contribute funds to resident physician education (Rich, 2002).

The number of residencies offered in internal medicine, a primary care specialty, has actually decreased from 328 residency positions in 1999 to 247 residency positions in 2009 (Steinbrook, 2009). According to an interview with a high-level administrator of a residency

program, some academic health centers and hospitals have substituted for family medicine or internal medicine residency positions with more lucrative services in specialty care.

Attaining state licensure requires completing a specific number of years of a residency program, but generally does not require completion of the residency and subsequent board certification, which indicates a physician is certified to practice medicine in a particular field. The residency length required to obtain an unrestricted medical license varies across states from 12 to 36 months, with some states holding different requirements for USMGs and IMGs.

Unlike USMGs, both U.S-born and foreign-born IMGs are required to obtain certification from the Educational Commission for Foreign Medical Graduates (ECFMG) in order to participate in the National Residency Match Program (NRMP). In addition to passing Steps 1 and 2 of the USMLE exams within a period of seven years, IMGs are required to provide their final medical school diploma and transcripts from a medical school registered in the International Medical Education Directory to receive ECFMG certification.

Licensure of direct care workers. The occupational licensing requirements for direct care workers involve competency and training standards. Occupations within the direct care sector are generally subject to separate licensing regimes, though instances of overlap do occur.

Unlike the licensing systems for physicians, direct care licensing systems are not universal. Licensing requirements do not, as a matter of law, apply equally to all direct care workers. Instead, licensing requirements for direct care workers are generally triggered by the nature of the worker's employer; specifically, whether the employer is eligible to receive public healthcare funds and, if so, the particular type of funds. The licensing of direct care workers is, in effect, implemented entirely through regulations tied to public healthcare programs, predominantly Medicare and Medicaid, but also related state programs (National Research

Council, 2008). In practice, these regulations amount to a universal licensing requirement for both nursing aides and home health aides, since nearly all employers of these two types of direct care workers receive public healthcare funds.

Nursing aides. Since 1987, federal law has required that nursing aides only work for a Medicaid/Medicare-certified facility if they have been trained and evaluated under a program approved by the state in which the employer is located (Omnibus Budget Reconciliation Act of 1987). These programs are often referred to as nurse aide training and competency evaluation programs (NATCEPs). Federal rules prescribe certain minimum features of NATCEPs, including a basic curriculum, a minimum of 75 training hours, and certain other competency requirements (42 CFR 484.36). Box 1 outlines the specific training and competency requirements, though states are permitted to have training and competency requirements that go beyond those mandated federally. Currently, 31 states have more rigorous requirements than those mandated by the federal government.

Box 1.

Summary of Federal Minimum Training and Competency Requirements for Nursing Aides

- 75 hours of training, including at least 16 hours of supervised practical or clinical training.
- Basic nursing skills, such as monitoring vital signs and height/weight and caring for a dying patient.
- Personal-care skills such as bathing and grooming.
- Mental health and social service skills, such as monitoring patient behavior.
- Basic restorative skills, such as training patients to self-care and maintain range of motion.
- Understanding patient rights, including privacy and confidentiality.

States are not required to recognize another state's NATCEP as a substitute for their own, which would allow a nursing aide licensed in one state to work in another state without meeting additional requirements. However, a number of states will exempt out-of-state nursing aides from certain portions of their NATCEP (training requirement) if the nursing aides can show that they have completed a NATCEP in another state (Texas Dept. of Aging and Disability Services, 2013).

NATCEPs can be provided in a number of settings so long as the settings are approved by the given state (Office of the Inspector General, 2002). Importantly, federal rules permit the employers of nursing aides to provide the necessary training and competency evaluation required by the state (Tyler et al., 2010). Employers that provide the necessary training and competency evaluation are then reimbursed by Medicaid/Medicare for the costs they have incurred. Aside from employers, other locations for the delivery of NATCEPs include community colleges, high schools, vocational-technical schools, proprietary training facilities, and non-profit organizations, such as the Red Cross (Tyler et al., 2010). The cost of the NATCEP generally ranges from \$150 to \$1,500 when delivered outside of an employer setting (Tyler et al., 2010). Critically, under Medicaid/Medicare rules, nursing aides who complete their NATCEP outside of an employer are entitled to reimbursement of their NATCEP costs if a certified employer hires them within a year of passing all requirements (Tyler et al., 2010).

Data indicates that 57% of nursing aides completed their NATCEP through their employer in 2004 (Khatustsky et al., 2011). Of this 57% of nursing aides, 82% paid none of their NATCEP costs, 12% paid all of their training costs, and the remainder paid some portion of their costs. In contrast, 43% of nursing aides who received training in community colleges paid for none of their own training, while 47% paid all of their training costs. Similarly, among nursing

aides trained in other locations (e.g., for-profit training facilities), 41.2% paid none of their NATCEP costs, while 51.3% paid all of their NATCEP costs (Khatustsky et al., 2011).

Overall, a much larger percentage of nursing aides who complete the NATCEP outside of an employer pay more of their own costs to complete the NATCEP. However, a recent study showed that the portion of employers providing a NATCEP is falling, despite the fact that the number of nursing aides is increasing (Tyler et al., 2010). The reduction in the number of employers providing a NATCEP may be occurring because the Medicaid/Medicare reimbursement formula does not fully reimburse employers for their costs, and because of the relatively high regulatory costs for employers to maintain approval to deliver the NATCEP, along with an increase in other venues delivering the NATCEP (Tyler et al., 2010).

Further, a rural/urban split exists among employers providing the NATCEP, with rural employers being more likely to provide the NATCEP (approximately 35% of employers) than urban employers (approximately 20% of employers). The rural/urban split is mostly likely due to fewer alternative sources that provide the NATCEP in rural areas (Tyler et al., 2010).

Home health aides. The structure of the licensing regime for home health aides is very similar to that for nursing aides. Currently, 15 states go beyond the federal requirements. Box 2 outlines the specific training and competency requirements for home health aides.

Box 2.

Summary of Federal Minimum Training and Competency Requirements for Home Health Aides

- 75 hours of training, including at least 16 hours of supervised practical or clinical training.
- Reading and recording vital signs and height/weight.
- Observing, reporting, and documenting patient status and the care and services provided.
- Basic infection control procedures.
- Recognition of and procedures for emergencies.
- Basic nutrition.
- Safe transfer techniques.

The main differences between the licensing of nursing aides and home health aides are procedural. First, the licensing requirements for home health aides come only via Medicare, not Medicaid. Second, states are not federally mandated to maintain a registry of licensed home health aides, though some do maintain a registry.

In contrast to nursing aides, the number of home health aides working for non-Medicare-certified employers cannot be determined. Thus, the percentage of aides not subject to the federal licensing requirements is also unknown. However, this percentage is thought to be relatively small given the dominance of Medicare-certified home health agencies in the industry. Consequently, nearly all home health aides are generally assumed to be subject to federal licensing requirements (A. Marquand, telephone interview, October 28, 2013).

Critically, Medicare does not provide a mechanism to reimburse either employers or employees for the cost of licensing home health aides, as opposed to program rules regarding nursing aides. No data is available on the percentage of home health aides who must pay out-of-pocket expenses to attain licensure, but the percentage for home health aides is assumed to be higher than the percentage for nursing aides (Khatustsky et al., 2011). This differential is

primarily due to a greater portion of home health aides completing their training and licensing outside of their employer. Data indicate that in 2007 at least 50% of home health aides completed their licensing program in a venue other than through an employer (Khatustsky et al., 2011).

Given the similarity in licensing of nursing aides and home health aides, overlap between the two systems exists in some states. In fact, ten states currently require home health aides to also be certified as nursing aides, and in eleven other states, some or all of the training time completed as part of the NATCEP can be applied to the licensing process to become a home health aide (Marquand, 2013).

Personal care aides. In contrast to both nursing aides and home health aides, personal care aides are not subject to federal standards (Marquand, 2013). Requirements often occur at the state level, but requirements vary considerably across states as well as within states, depending on the type of public healthcare funds received by the aide's employer (Marquand, 2013). In general, when states do have training requirements for personal care aides, the training requirements are less involved and less rigorous than those for nursing aides or home health aides because personal care aides are not typically involved in the delivery of clinical services (National Research Council, 2008). Box 3 provides an example of the training requirements for personal care aides in Minnesota, which applies to personal care aides across the state's Medicaid plan and waiver programs (MN Dept. Human Services, 2013).

Box 3.

Summary of Minnesota's Training Requirements for Personal Care Aides

- Complete a free online training course that is available in 6 languages.
- Course covers such topics as infection control and precautions, body mechanics, and understanding behavior.
- Pass an exam based on the online training course.

At present, approximately 75% of states have some minimum training requirements for personal care aides (Marquand, 2013). Within these states, the requirements are generally only applicable if the aide’s employer receives public healthcare funds through Medicaid state plans or waiver programs. The number of personal care aides that work for an employer receiving at least some Medicaid funds is not known, but the number is believed to be a large portion of all personal care aides (A. Marquand, telephone interview, October 28, 2013). Thus, to the extent that a given state imposes minimum training requirements across its Medicaid programs, those requirements likely apply to many of the personal care aides within the state.

At the same time, states generally have multiple Medicaid programs and the requirements for personal care aides across these programs are not necessarily the same (Marquand, 2013). The net result is that state regulation of personal care aides can best be understood as falling within one of four categories: (i) uniform requirements across all programs; (ii) requirements across all programs, but the requirements are not uniform; (iii) requirements in some programs, but not all; and (iv) no requirements in any state programs (Marquand, 2013). Table 1 provides the numbers of states (and the District of Columbia) that fall within each one of these categories.

Table 1: Description of State Requirements for Personal Care Aides

	Requirements across all state programs are uniform (i)	Requirements across all state programs, but are not uniform (ii)	Requirements in some state programs (iii)	No requirements in any state programs (iv)
Number of states & D.C.	21	8	12	10

Source: Marquand, 2013

Immigrants in the Healthcare Sector

Foreign-born IMGs almost exclusively enter the U.S. through either H-1B or J-1 visas. While both H-1B and J-1 visas are considered non-immigrant visas because they do not provide a direct pathway to permanent residency or citizenship, for the purpose of our analyses we are considering foreign-born IMGs practicing in the U.S. to be immigrants. The majority of foreign-born IMGs initially coming to the U.S. enter on a J-1 visa which provides foreign students and researchers with educational exchange opportunities. Physicians on a J-1 visa are allowed to work only for the hospital or related institution where they are serving as a resident or fellow and can work for a maximum of seven years. The J-1 physician is then required to return to their country of origin for two years before they can return to practice in the U.S. unless they obtain a Conrad 30 waiver. This waiver allows J-1 medical doctors to be granted an H-1B visa if they practice in a health care facility in an area designated by the US Department of Health and Human Services as a Health Professional Shortage Area (HPSA), Medically Underserved Area (MUA), or Medically Underserved Population (MUP), where the physicians must work for three years (United States Citizenship and Immigration Services, 2013). Although requirements vary by state, every state in the U.S., in addition to the District of Columbia, offers a Conrad waiver program through one of their health agencies and receives up to 30 waivers per year (Sostrin and Baker, 2009).

The H-1B visa, which also is primarily issued outside of the Conrad 30 Waiver Program, is designed for employers seeking to hire temporary foreign nationals in high-skilled, “specialty occupations,” such as physicians. To qualify for an H-1B visa, physicians must have already completed all necessary training, including passing the USMLE exams and completing 1-3 years of their medical residency and be fully licensed in the U.S. The H-1B visa is used for an initial

three-year period with a maximum stay of six years. The H-1B visa is also one of the few “dual intent” visas, which allows individuals to apply for and attain permanent residency (receive a “green card”) while holding an H-1B visa. In the past, applying for green cards through the employment-based process generally took three or fewer years, which is less than the length of the H-1B visa. However, in recent years, the employment-based green card process can last five to eight years, or even decades, depending on the country of the origin of the applicant and the green card category (Anderson, 2012).

In contrast to foreign-born IMGs, immigrants that enter direct care occupations are, for the most part, in the U.S. as either refugees or asylees or have entered the country through family connections. For immigrants, almost all lower-skill direct care workers enter on family-based visas which also are the visas for the lion’s share of all U.S. immigrants (Lowell, 2012).

The Border Security, Economic Opportunity, and Immigration Modernization Act of 2013, which was passed by the Senate in June 2013, contains major reforms which, if enacted, would alter the immigration landscape in the healthcare sector. One such component is the creation of the W-Visa which would help employers bring in low-skilled workers desired for occupations such as direct care. The W-Visa would allow for 20,000 low-skilled foreign workers to enter the U.S. beginning in 2015 and could grow to a cap of 200,000 after five years depending on unemployment rates, job openings, and employer demand. The W-Visa would allow recipients to petition for permanent status after completing their term and switch jobs while in the United States.

The Senate Immigration Bill, which has yet to receive approval by the House of Representatives, also includes various provisions affecting the J-1 and H-1B visas. The number of H-1B visas would be increased from 65,000 to 110,000 annually with a cap that could be

raised to 180,000 depending on demand. In 2010 and 2011, physicians were issued roughly 3% of all initial H1-B visas, on average, so lifting the H1-B cap to 110,000 or 180,000 would likely result in an additional 1,650 or 5,400 initial visas to physicians (U.S. Citizen and Immigration Service, 2012).

The Senate Immigration Bill would also implement a new “merit-based” green card system that would significantly increase the number of skills-based green cards. This new system would likely reduce waiting times for physicians already in the country and for those with temporary work visas, such as the H-1B. The “merit-based” green card system would be particularly beneficial for individuals applying in newly created, uncapped high-skill green card categories. Further, the Senate Immigration Bill would allow high-skill workers, including foreign-born IMGs, to have greater flexibility in petitioning for green cards without an offer of employment. In 2018, the “merit-based” green card system would provide a minimum of 120,000 green cards, which would be the first year the system would be at this minimum level. Over a period of 15 years, the number of green cards issued would likely expand to the system’s maximum limit of 250,000. The Migration Policy Institute estimates that in the uncapped employment-based categories alone, 3,000 physicians would receive green cards in 2018 (Sumption & Bergeron, 2013).

Lastly, to continue funneling foreign-born IMGs into underserved areas, the Senate Immigration Bill would make the Conrad 30 waiver program permanent, and would establish a procedure to increase the number of waivers available for each state (American Immigration Council, 2013). Three new Conrad 30 waivers per state would be provided for medical centers, and the number of state waivers would be increased by five per state if 90% of waivers are filled nationwide in a year.

Future Demand for Healthcare Services

The need for immigrants to enter healthcare occupations is accentuated by recent policy changes that will likely drastically alter demand for services. The ACA, which was signed into law by President Obama in March 2010, was created to lower the rate of uninsured and increase the quality and affordability of healthcare in the United States. The Congressional Budget Office and Joint Committee on Taxation estimate that by 2019 this comprehensive overhaul of the U.S. healthcare system will reduce the number of nonelderly uninsured Americans by 32 million (CBO, 2010). As a result of this increase in the number of insured, an aging population and technological advancements, occupations within the healthcare sector are among the fastest growing in the United States. Ultimately, the ability of the U.S. to fill this projected demand is crucial to the success of the nation's healthcare system.

As shown in Table 2, employment for physicians and direct care workers is projected to grow considerably faster than for occupations as a whole. The Association of American Medical Colleges (AAMC) estimates that the U.S. faces a physician shortage that is expected to grow to 130,600 by 2025 (AAMC, 2010). The Bureau of Labor Statistics forecasts a 52% increase in the number of direct care jobs from 2010 to 2020 (as compared to a 14% increase in all occupations), with the direct care workforce growing by about 2,300,000 workers. The main drivers of the growth in direct care workers are the aging U.S. population, increased access to long-term care services, medical advances that allow individuals with chronic conditions and severe disabilities to live longer, and the labor-intensive nature of direct care occupations (National Research Council, 2008).

Table 2: Projected Job Growth: Physicians and Direct Care Workers

	Employment (2010)	% Projected Job Growth (2010-2020)
Physicians	691,000	24%
Nursing Aides	1,505,300	20%
Home Health Aides	1,878,700	70%
Personal Care Aides	985,230	69%
All Occupations	127,523,76	14%

Source: Bureau of Labor Statistics

Primary care physicians. According to the AAMC, the U.S. currently has a shortage of primary care physicians (PCPs), which include the areas of pediatrics, family medicine, internal medicine, obstetrics and gynecology, and geriatrics (AAMC, 2010). In 2015, this shortage is expected to be 30,000 physicians, but by 2025 the shortfall in primary care providers is expected to be nearly 66,000 (AAMC, 2010). This shortage is driven largely an aging population in the U.S. The aging baby boomer population (currently aged 49-67) will require increasingly large amounts of healthcare for chronic illnesses, such hypertension, heart disease, arthritis, cancer and diabetes, and currently accounts for one-third of all healthcare spending and 40% of visits to physicians. By 2020, 5.6 million new health care jobs will be needed to accommodate this large influx of patients with multiple risk factors of chronic illness (Keller, 2013).

Additionally, the PCP shortage is being driven by difficulties in recruiting PCPs who are more likely to burn out and leave clinical practice than many of their subspecialty peers (Shanafelt et al., 2012). Primary care physicians often work more hours for lower pay than physicians in subspecialties, who can make three times the earnings of PCPs (Steinbrook, 2009).

International medical graduates play a significant role in primary care. Research indicates that approximately 25% of PCPs in the U.S. are IMGs (50,804 total) and that approximately 41%

of all IMGs are PCPs, compared to 33% of USMGs (Fordyce et al. 2012; Thompson, 2009). Further, patients who identified as Hispanic or Latino and Asian or Pacific Islander are more likely to visit IMGs (24.9%) than USMGs (12.4%) (Hing, 2009).

Increased funding and the affordable care act. The ACA makes several significant changes to decrease the shortage of PCPs in the United States. Teaching Health Centers Development Grants will provide funding for academic health institutions to establish or expand primary care residency training programs. Additionally, effective in 2013, Medicaid fee-for-service payments and managed care payments for primary care services increased. The Medicaid payments will offset natural increases in primary care usage resulting from individuals having greater access to preventative services. The ACA will provide a 10% bonus payment in Medicare from 2011 through 2015 for PCPs. The ACA will also increase the number of Graduate Medical Education (GME) training positions by redistributing currently unused slots in rural and underserved areas, with a focus on primary care residency positions, to states with resident physician-to-population ratios that are lower than average (Kaiser, 2013).

Important goals of the ACA are to increase workforce supply and support training of health professionals with loans and scholarships. The ACA offers grants and training to increase care in medically underserved and rural areas, including state grants to providers in medically underserved areas and for additional recruitment of providers in rural areas. The ACA also aims to promote training of a diverse workforce and promote cultural competence training of health care professionals (Kaiser, 2013).

Direct care workers and the Affordable Care Act. According to the National Center for Health Workforce Analysis, there is a shortage of direct care workers due to the attrition of people leaving the profession due to causes such as general dissatisfaction with the challenges of

the job, a lack of respect from management, and low wages and benefits (NCHW, 2004). The factors affecting future demand for long-term low-skill workers include an aging general population, chronically ill patients with longer lives due to technological advances, and an increased focus on home health care rather than residential housing of elderly or infirm patients (NCHW, 2004). The Affordable Care Act's "Personal and Home Care Aide State Training Program" aims to increase personal and home care aids. This program offers grants to state entities to develop core training competencies for PCAs and HCAs toward certification (Catalog of Federal Domestic Assistance).

III. Qualitative Analysis

Methods

Literature review. The purpose of our literature review was to inform our discussion of topics related to opportunity, access, and quality associated with occupational licensing of foreign-trained professionals in healthcare. Literature research included in this section comes predominantly from peer-reviewed academic journals and studies, but may also include appropriate newspaper and magazine articles that informed our framing of relevant issues.

Interviews. Interviews with individuals provided another critical source of information for our analysis. We sought out immigrants who have current or past experience in healthcare-related professions and conducted interviews by phone or in-person. Healthcare administrators, some of whom were and some of whom were not immigrants to the United States, were also interviewed. The primary goal of our interviews was to gain a range of perspectives from immigrants and administrators on the role and impact of occupational licensing in both high- and low-skill healthcare professions.

Interview procedure. As a framework for our research and analysis into the intersection of healthcare occupational licensure and immigration, the interview questions were written and coded to explore three themes: opportunities for employment, access to healthcare, and quality of healthcare. A complete list of the questions asked is included in Appendix A.

The interview findings included in this paper come from a selective sample rather than a random sample, as interviewees were found and contacted through personal and professional networks. In all, fifteen interviews were performed: two in person and thirteen over the phone. Interviewees were compensated for their time with gift cards and were informed that their name, professional title, and immigration status would not be revealed in this paper.

Limitations and concerns. While a random sample survey or a series of in-depth focus groups would have provided more generalizable results, time and resource constraints limited our qualitative research in both geographic scope and sample size. Although we were able to gain several perspectives from individuals outside of Minnesota, most respondents were residing in Minnesota at the time of the interview.

The sensitive nature of questions related to immigration, employment, and healthcare may have lowered interviewee's incentive to be truthful in response. Even though this paper refrains from identifying respondents by name, the contentious nature of some questions may have resulted in some individuals choosing not to respond to those questions, or to not be completely frank with their answers. In addition, interview questions were not validated, and a number of those interviewed were colleagues of the interviewers, which might have resulted in bias.

Sample participants. Of the fifteen participants interviewed, five were administrators or high-level policy makers, two were practicing medical doctors, four were non-practicing MDs, and two were in training to become certified nursing aides. Interviewees were originally from Bhutan, Spain, Chile, Colombia, India, Eritrea, Nigeria, and the United States. Among the administrators interviewed, three of the administrators were from the U.S., one was from Bhutan, three were MDs and one was an MPA.

Eight respondents indicated that they had previously been licensed physicians in their home countries. Six of those eight are currently unlicensed in the United States, and four of those unlicensed six are in the process of recertifying in the United States. Some respondents who were formerly licensed indicated that they found opportunities elsewhere in research and industry positions, and no longer wish to pursue a licensed healthcare occupation. The two respondents

who are fully licensed in the U.S. hold the same title that they had in their former country, and of the individuals seeking licensure, all of them look to work in a similar role to their previous experience.

The following summaries illustrate key issues regarding occupational licensure and immigrants in the healthcare sector. All issues are viewed through the three lenses of opportunity, access, and quality.

Opportunity

The impact of occupational licensing on immigrant employment. Occupational licensing requirements have been found to restrict entry into licensed occupations (Kleiner, 2013). There are universal English language proficiency requirements for physicians across all 50 states, with state-level variation for nursing aides, personal care aides, and home health aides. English proficiency and cultural understanding are common obstacles for foreign-trained healthcare professionals. A 2006 study found that immigrants coming to the U.S. from an English speaking country increased their likelihood of gaining employment by 11 percent over those who did not emigrate from an English speaking county (Mattoo et al., 2006). In addition, for immigrant physicians who have entered the U.S. on a family-based or humanitarian visa, being accepted to a medical residency program is oftentimes an insurmountable obstacle on the path to licensure. In some instances, these foreign medical graduates will pursue other occupations in the healthcare sector such as direct care worker.

Employment opportunities in rural and underserved areas. Addressing healthcare needs in rural and underserved areas throughout the U.S. has long been a challenge for policy makers. Respondents generally indicated that they were aware of rural health issues such as low physician-to-population ratios and gaps in services over geographic areas. When asked about

training programs that place foreign-trained or newly-licensed healthcare professionals in underserved and rural areas, respondents indicated that they were aware of the existence of such programs. However, although several respondents indicated interest in serving in rural and underserved areas, they did not have detailed knowledge of the steps required to finding employment in these areas.

The nature of the relationship between immigrants and employers. Due to the vulnerable nature of immigration status, employers in the U.S. may have an incentive to require immigrants to work long hours for little pay. Some have characterized new immigrants as being disregarded and treated as if they are invisible (Hondagneu-Sotelo, 2007), while others see the immigrant labor pool as a critical component of the American economy. Employee-sponsored visa programs, such as the J-1 and H-1B, are widely used in the healthcare sector, and allow for temporary employment of immigrant physicians. The temporary nature of such positions may, at times, adversely affect working conditions for immigrants.

The financial burden of licensure requirements. Oftentimes immigrants are required to retrain in their field of expertise in order to practice in the United States. Unless a foreign degree or certification is acknowledged by a state licensing board, an immigrant may have to begin schooling again at an accredited institution in the United States. Even in cases where foreign schooling or training is deemed acceptable by the board, additional licensing requirements such as residency or passing state exams may be required for licensure (Kleiner, 2013). This type of retraining is expensive, as valued in both cost to the immigrant and in opportunity cost. Interviewees expressed difficulty in their ability to work and train simultaneously, causing a strain on their ability to afford the training. Although training expenses must generally be

covered by the immigrants themselves, many certified nursing aides benefit from employer-sponsored training.

Access

Access to medical care. Patient access to healthcare is an increasingly important policy issue in the United States. Access is restricted by the cost of services, a lack of health insurance coverage, the limited availability of services in some areas, and the ability of providers to meet the needs of culturally diverse populations.

Immigrants' ability to access to healthcare services. According to several interviewees, many distinct ethnic communities are hesitant to seek medical care and advice because of cultural differences, but the cost of healthcare is also a major deterrent to seeking timely medical assistance. Ultimately, the hesitation in seeking care did not come from the perceived quality of care, but rather in the delivery of services. Specific barriers mentioned by respondents included chronic lateness, the wide extent of medical specializations, and difficulty understanding the insurance market.

Access to healthcare in rural and underserved areas. Multiple healthcare administrators mentioned problems with physician recruitment and retention in underserved and rural areas. They suggested an elective rural rotation during residency or offering student loans that require service in rural areas to help address shortages. Many international medical residents come from rural areas and would like to gain experience in rural areas in the U.S. before they go back to serve communities in their home country. In fact, several interviewees – both administrators and foreign-trained practitioners – spoke positively about the Conrad 30 Waivers program that requires work in an underserved population in order to stay and practice in the United States. In support of immigrant physicians who did not arrive on an employment-based

visa, one administrator advocated for residency programs to accept physicians who are already here in the U.S. and want to serve in rural areas, noting that these immigrants are already familiar with American culture.

Quality

Assessing immigrant physician quality. Healthcare administrators we interviewed found that, in general, occupational licensing ensures quality healthcare, though one administrator questioned the length of residency demanded of already experienced professionals. A shortened residency requirement and an expedited step three of the USMLE exam was proposed as a more efficient way to get doctors into the workforce.

Overall, most immigrant respondents believed that because the U.S. is more technologically advanced than other nations, doctors here have more tools that facilitate success in diagnosing and treating patients. Conversely, some international medical graduates found that because they were trained in countries with less developed healthcare sectors, they generally had far more hands-on experience and adaptability than U.S. medical graduates. In short, from the perspective of many interviewees, physician quality is not necessarily higher in the U.S., but simply different.

Learning about U.S. healthcare delivery. Once international medical graduates have secured a residency in the U.S., they need to learn about healthcare delivery models here. The healthcare system in the U.S. is complex, with different payers, medical sub-specialties for referral, advanced technology for diagnosis, an ever-expanding assortment of pharmaceuticals for treatment, voluminous research literature to provide evidence-based care, and many inter-occupational medical teams with whom to collaborate. In addition, many international medical

graduates must learn to work with electronic medical records and utilize diagnostic coding and billing; and in some cases, even learn how to type or use a computer.

Cultural competency in the provision of healthcare. According to research from the Institute of Medicine, “cultural competence training improves the attitudes, knowledge, and skills of physicians, as well as patients' ratings of care” (Betancourt & Green, 2010). Patients who trust their providers are more likely to seek preventative medical services, which is why cultural competency training is provided to both U.S. medical graduates and international medical graduates – though international medical graduates often have more to learn about the diversity of cultures in the United States.

There is a wealth of literature on the connections among health disparities, the cultural competency of medical providers and patient access. If patients do not trust their medical providers to be helpful and sensitive, the patients will not return – and perhaps will delay medical care altogether until emergencies. In the U.S. racial and ethnic minorities receive lower quality care and have fewer healthcare options than non-minority patients, even after controlling for other factors affecting such as insurance status and income (Smedley, 2009).

Selected Responses from Interviewees

The selection of interviewee responses below further address the key issues summarized above. This section of the paper mirrors the previous section and provides greater depth to the broader themes of opportunity, access, and quality.

Opportunity

The impact of occupational licensing on immigrant employment. We were told by several interviewees that many residency programs will not accept applicants who have graduated from medical school more than five years ago. This creates a nearly insurmountable

barrier for physicians who are older, especially for those who may have arrived in the U.S. following the hardship of life in a refugee camp, or a difficult immigration process. One respondent, who is currently seeking licensure as a physician, held a similar position in his country of origin, but is now working as an EKG and medical interpreter to gain experience in the American healthcare system because he cannot get a medical license. In general, respondents felt that occupational licensing requirements in healthcare were a hindrance to an immigrant's employment opportunities, and individuals who were either working or seeking to work in a low-skill occupation also highlighted the difficulty of navigating various complexities of the licensing process.

Language proficiency was identified by all 15 of our respondents as a barrier to attaining licensure. One respondent remarked that, "*Language is the biggest thing. Even though the medical terminology is very similar, the way the questions are presented was not something I was used to seeing.*" Although every respondent identified language requirements for gaining employment in healthcare fields as a barrier, there was not a consensus on the importance of language proficiency. One respondent claimed, "*It's a barrier, but not a major barrier.*"

Some bilingual immigrants find positions as medical interpreters while they continue to seek occupational licensure to work in other areas of healthcare. Two of the immigrants we interviewed work as medical interpreters and told us that the work is flexible, allows them time to study and care for their families, and is related to their previous work in healthcare. Medical interpreters, it should be noted, are minimally regulated and not required to be licensed, though there is an optional certification program (National Board of Certification for Medical Interpreters, 2013).

Nonetheless, some respondents also view occupational licensing requirements as an opportunity for immigrants to showcase their talent and ability in ways that would not be possible if stringent requirements were not in place. One respondent claimed:

“It’s the best system in the world! There is an objective criteria. Once you jump through the hoops [standardized exams] at least on paper you can show your scores and show your competency. I took the same exam as all U.S. and international students, and my score was in the 99% percentile. I proved my competency and was able to get into residency.”

Overall, respondents had mixed opinions about the merits of occupational licensing in healthcare, yet there was a consensus that language, to varying degrees, is a barrier for immigrants seeking to enter a licensed medical occupation.

Notably, eleven of thirteen respondents who addressed wages indicated that they felt occupational licensing increases wages in a given field. When asked why licensure is associated with an increase in wages, respondents identified factors such as occupational licensing proving competency, illustrating assimilation into American culture and the lowering supply of licensed job-seekers increases wages.

Employment opportunities in rural and underserved areas. Despite the known shortage of medical professionals in rural areas, one residency program administrator said that many foreign physicians would rather live in a culturally-diverse urban area for personal and social reasons. However, there are examples of international medical graduates who have worked in rural regions (usually on a Conrad 30 waiver) and remained there because of the fulfilling, medically challenging nature of the work in rural areas. One IMG who is having difficulty

getting into residency stated, *“It doesn’t matter where I work, as long as I can practice and help people. I just want to use my knowledge.”*

Another administrator, who represents refugee and asylee IMGs said that remote areas in the U.S. do not feel rural to many foreign-trained physicians because cars, houses, and electricity are all readily accessible, especially compared to rural areas in their countries of origin. Foreign-trained physicians may be especially well-suited to serving in rural areas because the work requires more independence and the ability to cope with fewer resources. Whether by choice or not, many international medical graduates work in rural areas because the only way to stay in the country and practice is by agreeing to work in an underserved population.

Generally, respondents claimed that they do not have a strong preference as to where they practice, only that they wish to gain employment in their field of interest. One respondent indicated that they were purely interested in pursuing licensure in order to serve immigrants:

“One of the most important reasons for me was that I wanted to be a part of the healthcare delivery system here. I realize that since I have an M.D. back home, if I don’t utilize it here, don’t get licensure here, then it would be a disservice to immigrants here who want to have a provider who speaks their language.”

One respondent described the licensing process in their country of origin, where 6-12 months of rural service is required after one graduates from medical school, while a couple of respondents remarked that physicians who serve in rural areas are more flexible and competent across a wider range of health issues.

The nature of the relationship between immigrants and employers. The majority of respondents indicated that they felt accepted and respected by their employers and co-workers. When asked whether they felt pressures from native populations within their occupation, one

respondent replied that the, "... *system works in a way that if you do your job and do it well, no one is going to tell me anything bad simply because I am an immigrant.*" However, another respondent conceded that they felt somewhat ignored by their co-workers when they originally started working, but now feel welcome and supported.

Another concern raised by interviewees was how current immigration and occupational licensing requirements may leave immigrants vulnerable to exploitation by employers. One international medical graduate, following residency, took a position with a large rural hospital that hires only J-1 physicians. This would allow the physician to remain in the U.S. long enough to earn a green card. However, it was reported that large companies often staff hospitals with international physicians on J-1s and then assign them very large caseloads (20 patients per day instead of 12-15) with little autonomy. This particular respondent voiced the complaint that international physicians on J-1 visas feel "exploited" when placed in such working conditions.

The financial burden of licensure requirements. Of all opportunity-related issues, respondents almost universally agreed that the financial aspect of licensing was perhaps the greatest barrier to employment for immigrants. Nonetheless, financial concerns were not given as the deciding factor for the two respondents who chose not to pursue licensure. Factors identified by respondents as contributing to the high cost of licensure include enrollment in test preparation courses, licensing board exams, hiring actors to "practice" on, enrollment in medical courses, and the loss of alternative economic opportunities. Low-skill immigrants, in particular, identified the loss of income due to exhaustive training programs as the primary finances-related barrier to obtaining a license. One respondent elaborated such:

"I have difficulty raising capital. I am spending six hours in school (training) everyday, Monday-Friday. It is very difficult to work during training."

Lack of access to credit was identified by several respondents as a concern. One individual noted that they had substantial credit card debt after paying for exams because it was impossible to get a loan from the bank.

However, three respondents indicated that they are currently taking part in training programs at little or no cost to them individually. Additionally, several high-skilled interviewees said they felt like they were at a financial advantage relative to their native-born colleagues due to the comparatively high cost of education in the United States – whereas their medical education had been subsidized by the government in their home country.

Access

Access to medical services. Those we interviewed agreed that access was generally defined as wait time, provision of consistent care, access to health insurance, the number of professionals working in given field, and the ability to treat diverse populations. In addition, respondents indicated that access to medical services is dictated primarily by cost, and in turn, those who are uninsured only receive medical attention if it is truly “needed.” In anticipation of the rollout of the Affordable Care Act, one IMG trainee, who has a graduate degree studying health disparities in healthcare access, stated:

“I see more patients being able to have health insurance and get access to doctors. The volume of patients will definitely increase however my concern is that the insurance companies will decrease the amount of time physicians can spend with patients.”

Immigrant access to healthcare services. Respondents were generally aware of patient access issues among underserved populations. One immigrant we interviewed was surprised by the limited access to healthcare:

“The cost of healthcare can be supplemented by insurance. People with good insurance have good access, but people without insurance have to use the emergency department as primary care. When I arrived in the U.S., I thought, ‘Ok, the U.S. is among the richest countries’. I expected more access than what I observed.”

Somali and Hispanic groups (particularly in the Minneapolis-St. Paul area) were identified by one participant as groups who avoid medical care because they do not feel as if they are welcome to be treated. One medical doctor who we interviewed is from an area of the world that is highly represented in the immigrant community in the Twin Cities. This physician said he felt that if he did not move forward with seeking licensure here, it would be a disservice to immigrants here that would benefit from a medical provider from a similar culture; to not continue working as a doctor would also be a disservice to the years of studying and work he did in his home country.

Access to healthcare services in rural and underserved areas. One healthcare administrator expressed interest in physicians who want to work in rural areas, especially those already living in the U.S. and familiar with American culture. By looking “in your own backyard” instead of abroad, the physician shortage could be addressed while also giving qualified individuals an easier path to becoming practitioners. Indeed, one foreign-trained physician said that underserved areas are, *“the areas I want to serve, whether I am in my home country or in the United States. My commitment is to work to improve health access everywhere.”*

Quality

Assessing immigrant physician quality. Most interviewees commented that the higher level of medical care received in the U.S. was the result of the quality of the healthcare system as a whole, not the quality of the physician. In the home countries of the interviewees, physicians

tend to have more power in the healthcare system than U.S. doctors, but in countries with greater access, physicians tend to be overburdened and hospitals tend to be understaffed. As a result, in their home countries, physicians are often forced to rely more on physical exams than on diagnostic tools.

Typically, residency applicants are recruited from the same schools as previously successful residents because it is difficult to confirm the quality of international medical schools and of applicants. Pakistan, India, the United Kingdom, and Canada were identified as nations with models of medical school instruction most similar to the United States. Because the Minneapolis-St. Paul area does not have a large Pakistani or Indian community, it struggles to attract many applicants from these nations. However, IMGs from these countries typically integrate well into the American system.

More generally, healthcare administrators noted that foreign-trained medical graduates display less sense of entitlement and greater internal motivation than most graduates of U.S. medical schools. However, one concern raised was in regard to foreign-trained residency applicants that are older than their American counterparts. In these cases, they have most likely already completed their education, residency, and fellowship in another country, making the physical rigor of a second residency much harder to bear.

Learning about U.S. healthcare delivery. Several administrators discussed how some foreign-trained immigrants have challenges adjusting to the electronic medical records system; some need to learn to type, use computers, and how to take extensive notes on each patient. In some international medical systems the doctor does nothing but write a brief note or prescription, and the nurses are in charge of record-keeping, whereas in the U.S. physicians are responsible for

using multiple technologically advanced resources to ensure accurate billing and continuity of care. One international medical graduate who is currently in residency remarked that:

“The U.S. is obviously more technologically advanced than back home. Here, there is more information provided, more research, more etiology, and more treatment options.”

Another IMG, currently studying for exams to qualify for residency, echoed this sentiment:

“Here, we [doctors] have more specialized knowledge. Here, new technology creates an improvement but it is difficult to keep up with the technology.”

Cultural competency in the provision of medical services. The administrators we interviewed said that a major objective of residency is to expand the cultural competency of all residents, so that they can provide sensitive, quality care to a diverse set of patients. One medical director gave this example of the importance of IMG residency training in relation to gaining in cultural competency in the United States:

“I had one patient who was an OB/GYN faculty from India, spoke English very well, and had excellent knowledge. In her first year of residency she struggled because we have totally different expectations for medical practice. This OB/GYN physician had never taken a full sexual history of a patient before. Having that conversation in a sensitive way with patients is an experience here that is a core part of being a physician, especially working with women in reproductive health. But in India physicians might never ask about sexual history, use of condoms, and sex with men or women. This trainee was completely at a loss. Medical students in the U.S. are taught the process of taking a sexual history, taught not to be judgmental, what appropriate language to use, and how to help patient adherence to a medical plan. These concepts were totally new to her.”

However, when working with immigrant populations, foreign-trained physicians may be able to provide higher levels of cultural competency than U.S. medical graduates. One respondent commented that non-immigrant African-American patients often respond positively to providers who are also immigrants from Africa and physicians of color. An IMG physician trainee from western Africa described some of the ways he is able to connect with immigrant patients as follows:

“Patients from immigrant communities benefit from seeing foreign physicians from a similar culture or language. For example, in Minnesota there is a large Somali community, and I am from Nigeria. Nigerians and Somalis, our cultures are very family-centered, and patients feel very connected to families. Family opinion weighs very closely to family decision. So as a physician I need to take the time to allow for family-centered decision making. Whereas many Americans are individualized and more personalized in your decision making.”

One foreign-trained MD discussed an instance when her work as a medical interpreter allowed her to assist in providing culturally competent care to patients. When a doctor was speaking with an immigrant patient with high blood pressure, and asked whether the patient adds salt to his food, the patient said no. But when the physician or the medical interpreter asked more questions about whether the patient adds a salty fish paste to his food, the patients said, ‘yes, of course, that is my daily food’. It is important that the medical team is able to ask the correct questions in a sensitive way to build trust with the patients to generate good outcomes.

Discussion

Microfinance. Because of the frequency in which cost was mentioned in the interviews as a hurdle faced by immigrants hoping to enter healthcare occupations, we explored further how

many immigrants fund their licensure process. For the most part, immigrants were unable to get a loan (as a result of their minimal credit history) and were strained by the costs of the training programs.

Microfinance is one option that state governments and nonprofits have identified as a means to ensure equal access to the labor force of licensed occupations. Immigrants and those who may wish to redirect their career focus may not have adequate financial resources or access to credit to fulfill the steps required towards licensure in healthcare. The state of Minnesota and various nonprofits throughout the nation have developed pilot programs to provide microfinancing to immigrants who seek licensure in healthcare fields.

In 2006, the Minnesota Legislature approved a one-time \$450,000 appropriation from the state's Workforce Development Fund. This pilot project encouraged the licensure in Minnesota of foreign-trained healthcare professionals, including physicians, nurses, dentists, pharmacists, veterinarians, and other health care professions (Minnesota Laws 2006, Chapter 282, Article 11, Section 2, Subdivision 12). Funding was appropriated to workforce service providers to provide resources to prepare customers for license tests. In total, the International Institute of Minnesota, African and American Friendship Association for Cooperation and Development Inc. (AAFACDI, now called the New Americans Alliance for Development), and the Rochester (MN) Workforce Center served 165 foreign-trained medical professionals hoping to gain licensure in their professions (Holder and Omondi, 2006). Results of this program include: 99 participants enrolled at Kaplan for test preparation, 12 physicians completed their examinations, and 9 doctors secured residencies (Dept. of Employment and Economic Development, 2006). Funding for this program was extended for State Fiscal Year 2014-15.

Microfinance options exist for immigrants looking for employment in certified nursing assistant positions as well. Jewish Vocational Services (JVS) offers 64 students per year the opportunity to enroll in a 14-week program that helps recent immigrants improve their English skills and navigate the job market to find work as certified nursing assistants. JVS covers the \$5,400 cost of the American Red Cross CNA training program as well (Restuccia, 2013). If pursued on a full-time basis, American Red Cross CNA training can be completed in as little as four weeks.

Another option to ease the financial burden of immigrants is to work with banks to offer loans for educational expenses. Many immigrants have no credit or little credit and have difficulty getting traditional loans from banks. Critically, having access to financial resources may enable immigrants to take additional time off work to study for licensure exams or attend school for further certification in a profession of their choice.

IV. Quantitative Analysis of Physicians

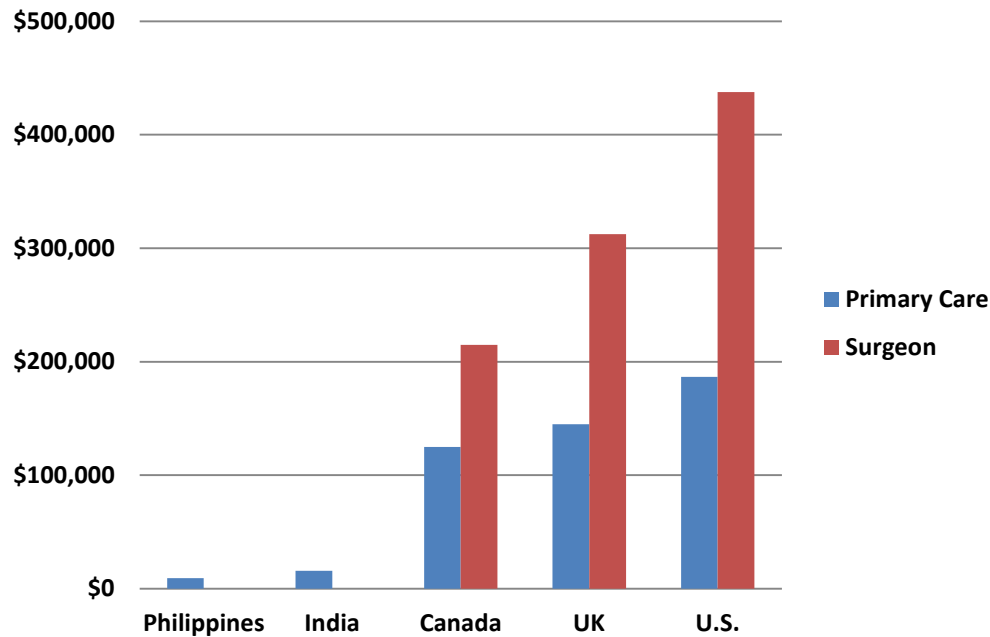
This section uses a quantitative lens to examine the impact of licensing on immigrant physicians and the impact of immigrants on the physician workforce. As with the above qualitative analysis, this section is organized around the issues of opportunity, access, and quality:

- (i) *Opportunity* – how licensing requirements affect immigrant physicians;
- (ii) *Access* – the impact of immigrant physicians on the public’s access to medical services; and
- (iii) *Quality* – the effect of immigrant physicians on the quality of medical services provided.

Descriptive Statistics

Wages. International medical graduates who intend to practice as licensed physicians in the U.S. are often motivated to immigrate by the higher wages and greater opportunities for advancement that the U.S. offers compared to their country of origin. Physician wages for specialists and primary care physicians (PCPs) in the U.S. dramatically exceed those of physicians in other developed and developing countries (Figure 1).

Figure 1: Physician Salaries, Cost of Living Adjusted (2008\$)

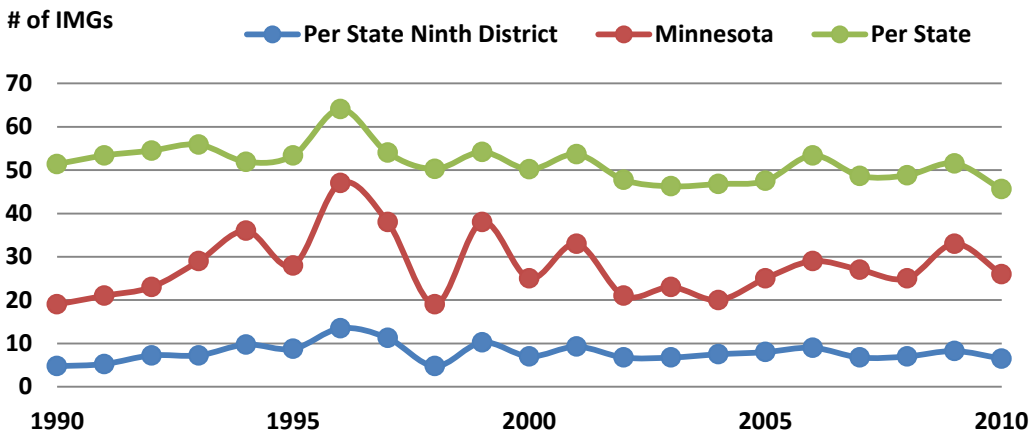


Source: Laugeson and Giled 2011, PayScale

Surgeons in the U.S. make approximately \$120,000 more per year than surgeons in the UK, and over \$200,000 more annually than surgeons in Canada in cost-of-living adjusted dollars (\$2008; Laugeson & Giled, 2011). In stark contrast, the average annual adjusted salary of family practitioners in the Philippines and India is \$9,250 and \$16,000, respectively, which is only a fraction of the yearly earnings of PCPs in the U.S (PayScale, 2013).

Migration of IMGs to the U.S. The number of migrants nationwide and in different states was documented using immigration records from the Department of Homeland Security. The annual flow of foreign-born IMGs into the U.S. remained relatively constant from 1990-2010, averaging 52 foreign-born IMGs per state yearly (Figure 2).

Figure 2: Migration Flow of International Medical Graduates into the U.S., 1990-2010



Source: Department of Homeland Security Immigration Records

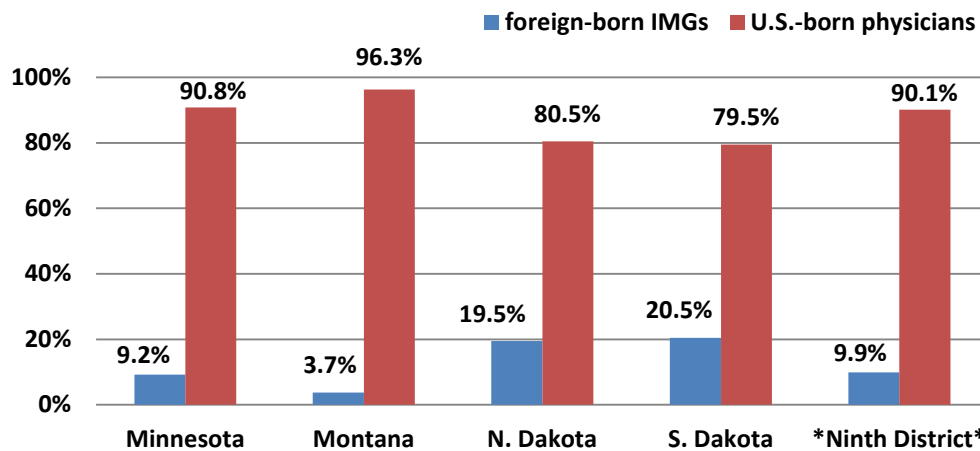
However, the number of foreign-born IMGs moving into states in the Ninth Federal Reserve District, excluding Wisconsin and the Upper Peninsula of Michigan, was considerably less during the same period (Figure 2). The number of foreign-born IMGs moving into the Ninth Federal Reserve District ranged from two per state in 1998 to 14 per state in 1996, with an average of eight per year from 1990-2010. Minnesota has been the largest, and occasionally, the exclusive recipient of foreign IMGs, receiving nearly 90% of all IMGs in the Ninth District yearly. This large disparity between the numbers of foreign-born IMGs entering states outside the Ninth Federal Reserve District relative to states in the Ninth Federal Reserve District is not surprising given the disproportionately rural composition of states in the District.

Foreign-born IMGs in the U.S. In 2012, the number of post-residency IMG physicians practicing in the U.S. was 256,386—representing roughly 22% of the total physician population. Of these 256,386 IMG physicians, approximately 27% were U.S.-born IMGs, indicating there were 68,178 U.S.-born IMG physicians in the U.S. Thus, the number of post-residency foreign-born IMGs totals 186,217, which is 19.6% of the total post-residency physician population in the

U.S. (American Medical Association, 2013). The top five countries of medical education for IMG physicians, which includes both U.S.-born and foreign-born IMGs, are India (20.4%), the Philippines (8.1%), Pakistan (6.0%), Mexico (5.4%) and the Dominican Republic (3.2%) (American Medical Association, 2013). The top five countries of origin for IMGs from lower income countries are India (52,874), the Philippines (20,625), Pakistan (12,433), China (5,584), and Thailand (1,688) (Torrey and Torrey, 2012). While migration dynamics likely shift over time, differences between the top countries of medical education for IMGs and the number of foreign-born IMGs practicing in the U.S. indicate that Mexico and the Dominican Republic are likely destinations for U.S.-born IMGs to receive physician training. Canadians also represent a high number of physician migrants to the U.S., and in 2011, Canadian citizens were issued the second highest number of ECFMG certificates (ECFMG, 2012). In contrast to other foreign-trained physicians, Canadian-trained physicians are not required to perform an additional residency before practicing in the U.S., which in combination with its close geographic proximity, may incentivize migration to the United States.

In the Ninth Federal Reserve District, excluding Wisconsin and Michigan, foreign-born IMGs represent 9.9% of the total physician population, which is approximately 10% less than the national average (Figure 3). We considered non-native physicians to be foreign-born IMGs if the physicians came to the U.S. when they were 25 years or older. Of the Ninth Federal Reserve District states, Montana has the lowest percentage of foreign-born IMGs (3.7%), and North Dakota has the highest percentage of foreign-born IMGs (20.5%)—only slightly higher than the national average (Figure 3).

Figure 3: Percentage of Foreign-born IMGs and U.S.-born Physicians in Ninth Federal Reserve District States



Source: Author’s calculations from 3-year American Community Survey, 2009-2011

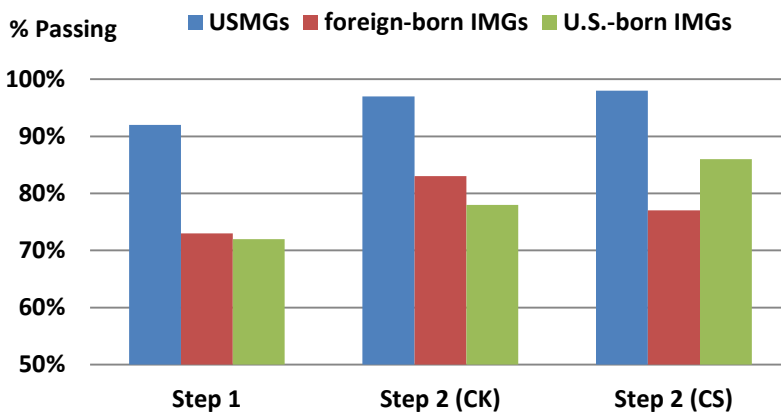
While most foreign-born IMGs enter the U.S. to practice medicine as H-1B or J-1 visa holders, other individuals who were physicians in their home countries come to the U.S. as refugees or asylees. The exact number of individuals who are currently living in the U.S. who were physicians in their home countries but are not licensed or board certified in the U.S. is unknown; however, the International Medical Graduate Association has over 550 members who have become citizens of the United States and are qualified for medical residency training, but have not yet been accepted into training. In Minnesota alone, The New American Alliance for Development represents over 200 foreign-trained medical doctors working toward licensure (New Americans Alliance for Development, 2013).

Licensing Impacts on Employment Opportunities for IMGs

Test scores. Passing the USMLEs and attaining high test scores are necessary for being successfully matched to a residency position and eventually attaining licensure. High test scores are particularly critical for IMGs to attain a residency. The Step 1 exam, which tests knowledge of basic scientific concepts necessary to practice as a physician, is typically taken by USMGs

after the second year of medical school and is the only standardized measure of all residency applicants. Foreign-born IMGs take the Step 1 and 2 exams after previous completion of a medical program outside of the U.S., which makes attaining a high score on the exam more challenging. The pass rate on the Step 1 exam for USMGs that are first time test takers was 19% higher than that of foreign-born IMGs in 2011 (ECFMG, 2012; Figure 4).

Figure 4: Pass Rates for First-Time Test Takers on the USMLE Exams



Source: ECFMG, 2012

For both USMGs and IMGs, scores on the Step 1 exam are an important criterion for selecting students for residency matches. The average scores of USMGs who were successfully matched into residency programs in 2011 ranged from 213 out of 322 for Family Medicine to 249 out of 322 for Plastic Surgery (ECFMG, 2012).

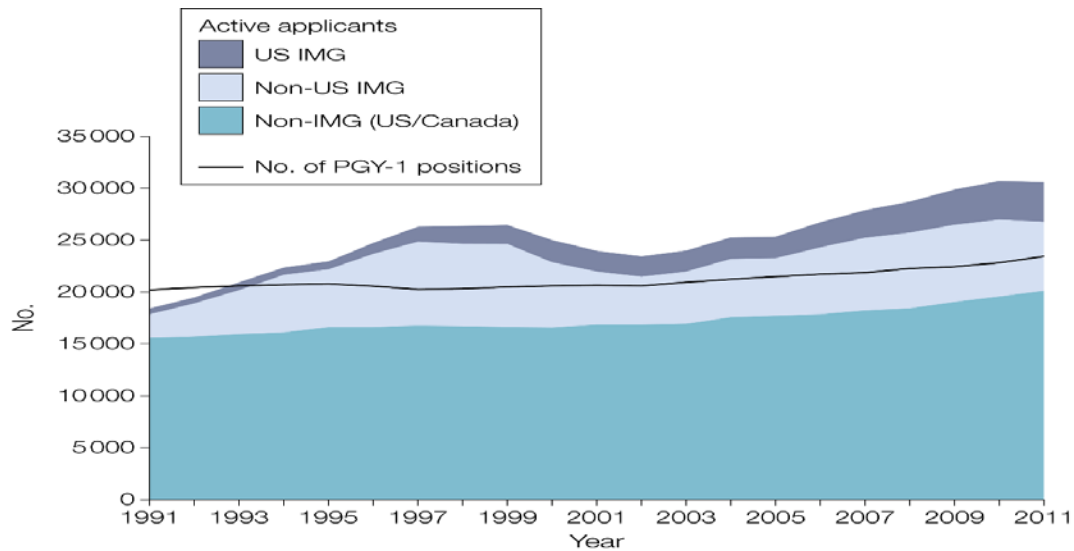
The first test in Step 2 (CK exam), which tests clinical application of medical knowledge, is typically taken during the fourth year of medical school by USMGs. The pass rate on the CK exam for first-time test takers was 14% higher for USMGs than for foreign-born IMGs in 2011 (ECFMG, 2012; Figure 4). The second test in Step 2 (CS exam), which tests the “hands-on” application of clinical skills, is taken towards the end of the senior year for most USMGs. The

pass rate for first-time test takers on the CS exam is 21% higher for USMGs than for foreign-born IMGs (ECFMG, 2012; Figure 4). The relatively large differential between USMGs and foreign-born IMGs on the CS exam may be due to cultural, language, and practice pattern differences between physicians born inside and outside of the U.S. This assertion is supported by pass rate differences between foreign-born and U.S.-born IMGs. United States-born IMGs have a 9% higher pass rate on the Step 2 CS exam than foreign-born IMGs, but a 5% lower pass rate and a 1% lower pass rate than foreign-born IMGs on the Step 2 CK and Step 1 exams, respectively (ECFMG, 2012; Figure 4).

Lastly, the Step 3 exam, which tests whether medical knowledge can be practiced in an unsupervised environment, is typically taken by USMGs and IMGs after completing their first year of residency. However, approximately ten states allow IMGs to complete the Step 3 test before beginning residency. There is often a perception that being able to take the Step 3 test early enhances the ability of foreign-born IMGs to obtain a residency; however, scores on Steps 1 and 2 are more important factors in attaining a residency. The pass rate on the Step 3 exam is 96% for USMGs and 84% for IMGs (ECFMG, 2012). Overall, test results patterns in 2011 are similar to those across other years for USMGs, U.S.-born IMGs and foreign-born IMGs (ECFMG, 2012).

Residency bottleneck. The limited number of residencies available yearly for USMGs and IMGs is the most crucial factor restricting the number of practicing physicians in the United States. The number of residency positions available to first-year post-graduate USMGs or IMGs (PGY-1 positions) has increased slowly over the past thirty years, while the number of applicants for available positions has increased much more rapidly (Figure 5; Traverso and McMahon, 2012).

Figure 5: Trends in Applicants Participating in the National Match Residency Program and the Number of Postgraduate Year 1 Positions



Source: Traverso and McMahon, 2012

The number of applicants, including USMGs and IMGs, participating in the NRMP in 1991 was roughly 3,000 less than the number of PGY-1 positions available in 1991; however, by 2011 the number of applicants was roughly 6,000 *more* than the number of PGY-1 positions available (Figure 5; Traverso and McMahon, 2012). Available PGY-1 positions grew from 20,192 in 1991 to 23,421 in 2011, a 0.883% increase yearly, while the number of foreign-born IMGs applying for PGY-1 residencies increased by over three-fold from 2,259 in 1991 to 7,568 in 2013 (ECFMG, 2013; Traverso and McMahon, 2012;). Notably, the ratio of residency positions per applicant has been at historically low levels since 2008. From 2008 to 2013 there have never been more than 77 available residency positions per 100 applicants, with as few as 75 positions per 100 applicants in 2009 and 2010 (NRMP, 2013).

The match rates (percentage of residency applicants successfully matched to a residency) for USMGs and foreign-born IMGs differ substantially. The PGY-1 match rate for seniors in

U.S. medical schools (future USMGs) has remained virtually constant since the early 1980s, averaging 94% (NRMP, 2013). In contrast, the PGY-1 match rate for foreign-born IMGs has fluctuated from less than 25% in 1985 to nearly 65% in 1991 to 48% in 2013 (NRMP, 2013). Over the past three years, the match rate for foreign-born IMGs has averaged 43%, which has resulted in only 9,097 of 21,055 foreign-born IMG NRMP applicants being placed in a residency (ECFMG, 2013). The low match rate of foreign-born IMGs, in combination with the overall limited number of residencies available, severely restricts the ability of foreign-born IMGs to practice in the U.S.

Length of residency for state licensure. All states require USMGs and IMGs to complete a portion of their residency prior to receiving an occupational license; however, the required length varies across states from 12 to 36 months. As a result, physicians can receive their license to practice medicine before completing their residency and before receiving board certification. This “early” licensure is important because it allows physicians to supplement their limited salaries by practicing medicine without supervision (“moonlighting”). Residents double their yearly earnings, on average, by moonlighting, and roughly 40% of residents practicing internal medicine moonlight (Peterson et al., 2013). Research further indicates that IMGs moonlight more frequently than USMGs despite visa constraints, which is likely due to IMGs being more likely to have dependents than USMGs (Peterson et al., 2013).

The portion of residency required to be completed for initial licensure is often longer for IMGs than for USMGs (Table 3): 37 states, including the District of Columbia, have lengthier residency requirements for IMGs. As a result, IMGs have lower expected returns to medical training in states with longer residency requirements.

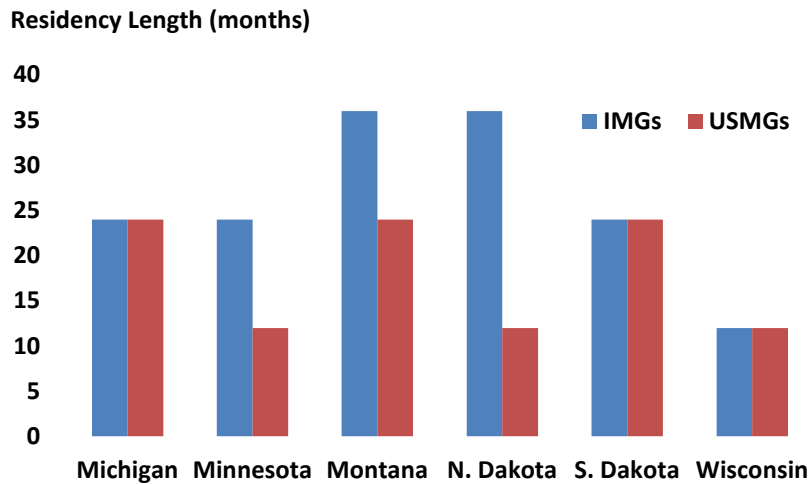
Table 3: Number of States by Length of Residency Requirement

Residency Requirements	USMGs	IMGs
12 months	35	2
24 months	14	22
36 months	2	27

Source: Peterson et al., 2013

In the Ninth Federal Reserve District, three of the six states (Minnesota, Montana and North Dakota) have longer residency requirements for IMGs (Figure 6).

Figure 6: Residency Lengths in Ninth Federal Reserve District States



Source: Peterson et al., 2013

Residency lengths for both USMGs and IMGs have also increased through time. Since 1980, the average length of the residency requirement for IMGs has increased from 15 months to 30 months, and has increased from five months to 16 months for USMGs (Peterson et al., 2013).

Research by Peterson et al. (2013) indicates that requiring longer residencies for IMGs results in fewer IMGs. States with the longest residency requirements for IMGs (36 months)

receive four fewer IMGs annually in comparison with otherwise equivalent states that have no residency requirement for licensure (Peterson et al., 2013). A counterfactual simulation that estimates the expected increase in the number of physicians from 2005-2009 (summed) if states' residency requirements for IMGs and USMGs were equivalent reveals that these policy changes would have resulted in an additional 640 IMGs in the U.S., reducing the U.S. physician shortage by approximately 9%, which totaled 6,977 in 2009 (Peterson et al., 2013). Larger states, such as California (112 physicians) and New York (183 physicians), would have experienced the largest gains in IMGs from reducing the length of residency requirements, while small, rural states, such as Montana, Alaska, and Wyoming, would have experienced virtually no increase in IMGs (Peterson et al., 2013). In the Ninth Federal Reserve District, Minnesota would have gained roughly six IMGs and eliminated 11% of its physician shortage, which totaled 52 in 2009. In contrast, North Dakota would have gained roughly one IMG from 2005-2009, and Montana would have gained zero IMGs, resulting in little to no reduction in their physician shortages of 34 and 47, respectively (Peterson et al., 2013).

The hypothetical reductions in physician shortages would have resulted in savings of \$280 million nationally in 2010 (\$5.5 million per state, on average) due to reduced emergency room, outpatient, and inpatient visits (Peterson et al., 2013). In the Ninth Federal Reserve District, Minnesota would have generated approximately \$2.6 million in savings, while Montana and North Dakota would have saved over \$50 million in 2010 (Peterson et al., 2013). It is important to note that the physician gains and fiscal savings estimated through the simulation assume that there are no restrictions to increasing the number of IMGs. However, in reality, the number of residencies available annually and the number of H-1B and J-1 visas available to

IMGs are severely restricted, which limits the number of foreign-born IMGs who would be able to practice medicine in the U.S.

The differing residency lengths required for USMGs and IMGs across the majority of states and the District of Columbia appears to be largely due to protectionist use of licensure regulation, not potential quality differences between USMGs and foreign-born IMGs. From 1973-2010, states with greater physician control of medical licensing boards (self-financed boards) relative to state-financed licensing boards enacted longer residency length requirements for IMGs relative to USMGs, which consequently decreased the annual flow of IMGs into these states (Peterson et al., 2013).

IMGs and Public Access to Medical Services

International medical graduates in rural and persistent poverty areas. International medical graduates who are primary care physicians (PCPs) are twice as likely to practice in urban areas (19.1 IMGs per 100,000) than rural areas (10.6 IMGs per 100,000; Fordyce et al., 2012). States with the highest concentration of foreign-born IMGs are also states that are within the 50th percentile of the most urban states, including the District of Columbia (percent of the state's population that lives in urban areas; Table 4; U.S. Census Bureau, 2010).

Table 4: States with the Highest Concentrations of Foreign-born IMGs

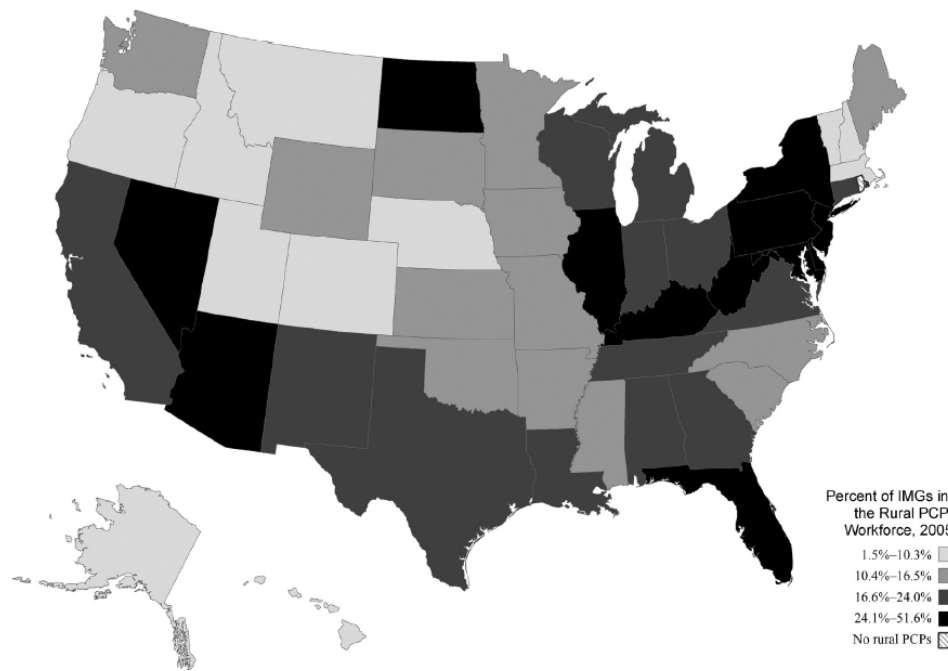
State	% Foreign-born IMGs	Urban Rank
New Jersey	32.5%	3 rd
New York	29.5%	13 th
Florida	27.4%	7 th
Michigan	25.4%	25 th
Illinois	24.9%	11 th

Source: U.S. Census Bureau, 2010

Thus, the large disparity between the numbers of foreign-born IMGs entering states outside the Ninth Federal Reserve District relative to states in the Ninth Federal Reserve District is not surprising given the disproportionately rural composition of states in the District.

Over the past thirty years, the percent of rural PCPs represented by IMGs has increased by more than 45%, which reveals the increasing importance of IMGs in the delivery of healthcare in rural areas (Hart, 2007). Overall, IMGs represent nearly 20% of rural PCPs (Fordyce et al., 2012). In the Ninth Federal Reserve District, including Michigan and Wisconsin, the number of IMGs as a percentage of rural PCPs varies significantly across states, ranging from 5.7% of the rural PCP workforce in Montana (fifth lowest in the country) to over 24% in North Dakota (Figure 7; Fordyce et al. 2012).

Figure 7: International Medical Graduates as a Percentage of the Rural PCP Workforce

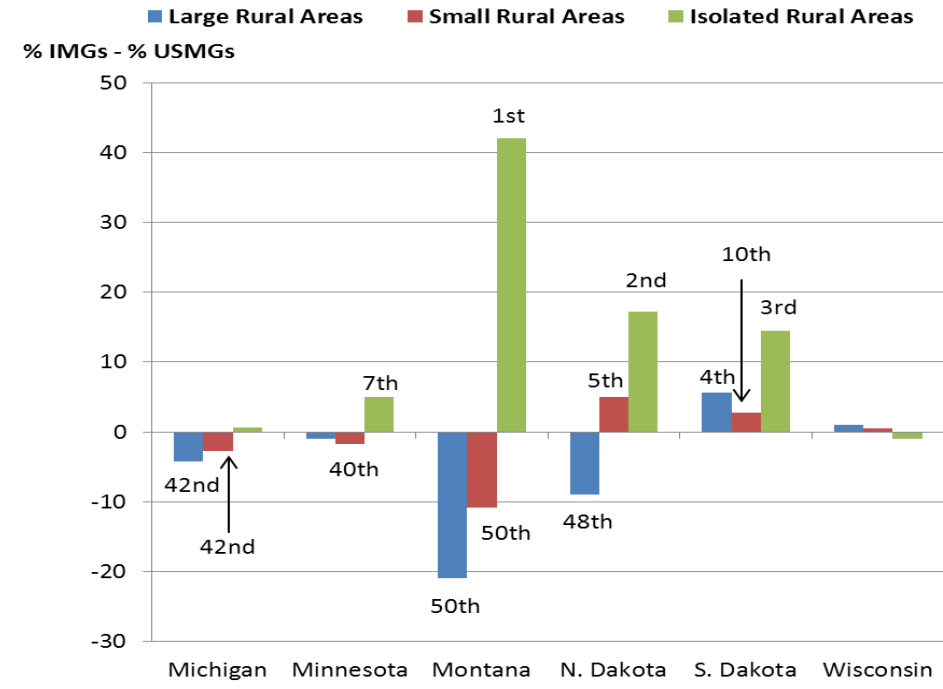


Source: Fordyce et al., 2012

As a proportion of the rural PCP workforce, the relative representation of IMGs generally declines as the degree of rurality increases. In large rural areas, 19.7% of the total PCP workforce is comprised of IMGs, while in small rural areas and small isolated rural areas the percentage decreases to 19.4% and 17.3%, respectively (Thompson et al., 2009). However, among states that have relatively more PCP IMGs practicing in isolated rural areas (state % of national IMGs *minus* state % of national USMGs in isolated rural areas), Montana (42), North Dakota (17.2) and South Dakota (14.5) have the three highest positive differentials, indicating the high relative importance of IMGs in isolated rural areas in these states (Thompson et al., 2009). Figure 8 provides a comparison of the relative proportion of IMGs versus USMGs in

large rural, small rural, and isolated rural areas for states in the Ninth Federal Reserve District along with national ranks for IMG concentrations (Thompson et al., 2009).

Figure 8: Comparison of National Percent of Primary Care IMGs and USMGs (IMG % - USMG %) for States in the Ninth Federal Reserve District



Source: Thompson et al., 2009

In contrast with rural areas overall, IMGs are more likely to practice in rural persistent poverty counties than USMGs (12.4% versus 9.1%), which reveals the important gap filled by IMGs in rural high-need areas (Fordyce et al., 2012). Previous estimates indicate that if all PCP IMGs were removed from service, 20% of sufficiently served rural counties would become underserved, and the overall number of rural counties with a physician shortage would increase by 14% (Fordyce et al., 2012). These findings are particularly relevant for the Ninth Federal Reserve District, which has the highest levels of Health Professional Shortage Areas (HPSAs) in primary medical care among Federal Reserve districts (Rural Assistance Center, 2013).

International Medical Graduates also play an important role in providing care in underserved urban areas. Previous research has found that IMGs are disproportionately located in poverty areas in numerous U.S. cities relative to USMGs, and that IMGs are found more frequently in urban poverty areas as city size increases (Mick & Lee, 1999). Seven of 14 urban areas with a population over 2.5 million had a disproportionate number of IMGs located in high poverty areas (Mick & Lee, 1999). However, relative to the other 13 largest urban areas, the lowest number of IMGs in high-poverty neighborhoods was in Minneapolis-St. Paul, where IMGs represented only 12.8% of physicians in high-poverty neighborhoods (Mick & Lee, 1999).

International medical graduates and the predicted physician shortage. The projected demand for physicians is likely to increasingly outpace the supply of physicians over the next 15 years, largely due to the additional 32 million individuals who are projected to gain coverage under the ACA (CBO, 2010). The gap between physician supply and demand is expected to expand from 62,900 in 2015 to 91,500 in 2020 and 130,600 by 2025 (AAMC, 2010). The PCP supply and demand gap is expected to comprise approximately 50% of the total physician gap in 2015 and 2025 (AAMC, 2010). The ability of foreign-born IMGs, who represent a disproportionate number of PCPs in the U.S., to help reduce the potential supply and demand gap is severely limited due to the low match rate of foreign-born IMGs to residencies and the severe bottleneck created by the limited number of residencies available annually. If the number of residencies were expanded to allow for a foreign-born IMG match rate that is comparable to the USMG match rate (94%), an additional 7,982 and 47,832 foreign-born IMGs would be practicing in the U.S. in 2015 and 2025, respectively, which would fill approximately 13% and 37% of the overall physician gap. Similarly, foreign-born IMGs would increase the PCP workforce by 3,539 in 2015 and 21,233 in 2025, which would fill 12% and 32% of the PCP

physician gap in 2015 and 2025. However, important immigration policy changes would have to be implemented for the long run projections to be viable, including expanding the number of H-1B and J-1 visas, extending the length of the visas, and increasing the ability of foreign-born IMGs to permanently immigrate to the United States.

IMGs and Physician Quality

A common argument against increasing the number of foreign-born IMGs in the U.S. is that foreign-born IMGs are of a lower quality than USMGs. Quality and effectiveness can be measured through three main avenues: process, structure, and outcomes (Mick & Comfort 1997).

Structural measures. Original assessments of quality differences between foreign-born IMGs and USMGs have typically relied on structural measures to operationalize quality. These measures typically use examination scores to determine quality across physicians. Research indicates that USMGs perform better in exams than graduates of international medical schools, which is revealed in the lower pass rates of foreign-born IMGs than USMGs on the 2011 USMLEs. Boulet et al. (2006) also found that on first-attempt passes of the first two stages of the USMLE, USMGs typically fare better than foreign-born IMGs, who, in turn, typically fare better than U.S.-born IMGs. Further, Ramsey et al. (1991) found that in a sample of 289 practicing, board-certified internists, USMGs performed statistically significantly better than IMGs on an 82 item multiple-choice exam based on questions from the American Board of Internal Medicine certification exam.

Foreign-born IMGs generally take their USMLE exams later in their careers after completion of medical school and residencies outside of the U.S., which is in contrast with medical students in the United States, who take the USMLEs while attending medical school. Thus, more recent exposure to academic material may foster higher scores on the USMLE exams

for medical students in the U.S. However, higher test scores and pass rates may not be a good proxy of physician effectiveness in delivering patient care.

Process measures. Process measures of physician quality and effectiveness incorporate both the knowledge aspect of examinations and the application of procedures. Research has found little evidence that foreign-born IMGs perform worse than USMGs (Brook & Williams, 1976; Saywell et al., 1979). Tussing and Wojtowycz (1993) found a higher, statistically significant IMG cesarean section rate in a sample of New York State physicians. However, physician performance was significantly linked to hospital characteristics, not physician characteristics such as country of origin. Additionally, Ko, Austin, Chan, and Tu (2005) found that the origin of medical education of the physician played no role in determining treatment options for patients with acute myocardial infarction (AMI).

In some instances, IMGs have been found to fare better than USMGs on certain clinical skills. Ozuah, Curtis, and Dinkevich (2001) found that a study of the skills needed to adequately perform physical examinations showed IMGs fared better than USMGs on all skills. Additionally, Schnable, Hassard, and Kopelow (1991) found that reports of the interpersonal skills of IMGs and USMGs were equally positive. In other examination measures, such as the In-Training Examination in External Medicine (IM-ITE), Garibaldi et al. (2002) found that IMGs have persistently outperformed graduates of US medical schools since 1995.

However, IMGs are often perceived as being of lower quality. For example, in an analysis of the treatment of the elderly, patients had negative perceptions of IMGs related to issues of communication, cultural competency, ageism, and unnecessary expenses (Howard et al., 2006).

Outcome measures. Assessing the comparative health outcomes of patients treated by foreign-born IMGs and USMGs are likely the most accurate mechanism to assess potential quality differences between foreign-born IMGs and USMGs. Typically, studies have used length of stay in the hospital, mortality rate, and medical malpractice as outcome measures of physician quality. These studies have generally found no differences in effectiveness between IMGs and USMGs. Burns and Wholey (1991) found that graduation from a foreign medical school had little influence on length of stay and mortality rates for an un-named western state's entire population of 1988 discharges. Further, Schwartz and Mendelson (1989) found that IMGs were no less likely than US medical graduates to lose their malpractice insurance, and a 1987 US General Accounting Office report found that IMGs were not more likely to be involved in malpractice claims than were USMGs. More recently, in an analysis of 244,153 Pennsylvania hospitalizations for congestive heart failure or acute myocardial infarction, Norcini et al. (2010) found that patients of physicians who were foreign-born IMGs had statistically significantly lower mortality rates than patients cared for by USMGs or U.S.-born IMGs.

V. Quantitative Analysis of Direct Care Workers

In this section, we use a quantitative lens to examine the impact of licensing on immigrant direct care workers and the impact of immigrants on the direct care workforce. Relatively little quantitative analysis of direct care workers has been conducted at the national scale, including with respect to immigrants (Leutz, 2007). As with the above analysis of physicians, this section is organized around the issues of opportunity, access, and quality:

- (iv) *Opportunity* – how licensing requirements affect immigrant physicians;
- (v) *Access* – the impact of immigrant physicians on the public’s access to medical services; and
- (vi) *Quality* – the effect of immigrant physicians on the quality of medical services provided.

Descriptive Statistics

Table 5 provides descriptive statistics of the direct care workforce. Workers in these occupations are overwhelmingly female (88% of all direct care workers), approximately half live in households earning less than 200% of the federal-poverty level (compared to 25% among all workers), and the median hourly wage is relatively low at \$10.88. Further, 40% of direct care workers work part-time (as compared to 22% among all workers), and 43% of all direct-care workers are non-white (as compared to 24 % in the workforce overall).

Table 5: Descriptive Statistics of Direct Care Workers

	All Direct Care Workers	Nursing Aides	Home Health Aides	Personal Care Aides
Median Age	42.1 (0.0632)	44.2 (0.1440)	38.5 (0.0995)	43.9 (0.1007)
% female	88% (0.0015)	92% (0.0030)	91% (0.0025)	85% (0.0028)
% married	44.33% (0.0022)	47.44% (0.0053)	42.30% (0.0032)	44.55% (0.0033)
% single mothers	20.6% (0.0020)	22.6% (0.0048)	22.6% (0.0036)	18.1% (0.0029)
% work in urban areas	79.0% (0.0021)	81.4% (0.0041)	74.6% (0.0039)	81.3% (0.0030)
% that primary language at home other than English	25.8% (0.0021)	29.2% (0.0059)	18.9% (0.0036)	29.7% (0.0035)
% in households with income less than 100% of poverty level	18.4% (0.0018)	20.9% (0.0047)	15.7% (0.0031)	19.5% (0.0030)
% in households with income less than 200% of poverty level	49.5% (0.0024)	51.6% (0.0050)	46.9% (0.0040)	50.6% (0.0037)
% working part-time	39.30% (0.0025)	45% (0.0063)	28.80% (0.0034)	45.00% (0.0035)
Average hourly wages	\$10.88 (0.0243)	\$10.82 (0.0607)	\$11.60 (0.0433)	\$10.27 (0.0377)
% non-white	43% (0.0025)	48% (0.0054)	45% (0.0038)	41% (0.0035)
% with only high school education or less	54.3% (0.0025)	58.0% (0.0054)	53.6% (0.0046)	53.3% (0.0036)
% with associates degree or more	14.6% (0.0016)	14.1% (0.0038)	10.7% (0.0023)	17.9% (0.0027)

Source: American Community Survey, 2009-2011

Sample weights used

Standard errors in parentheses

Table 6 provides descriptive statistics of immigrants working as direct care workers relative to native direct care workers. For immigrants, the statistics are separated into three categories of immigrants: all immigrants; immigrants who arrived in the U.S. at the age of 25 or older (i.e., likely foreign-educated immigrants); and immigrants in the U.S. less than 5 years (i.e., new immigrants). Immigrant direct care workers are, on average, older than their native counterparts, have higher average hourly wages than native workers (\$11.60 versus \$10.65), and have, on average, an education degree beyond a high school diploma. Immigrants also comprise a greater share of the direct care labor force (22.9%) than of the overall labor force (16.3%).

Table 6: Descriptive Statistics of Native and Immigrant Direct Care Workers

	Native Workers	All Immigrants	Immigrants who arrived in the U.S. at age 25 or older	Immigrants in the U.S. less than 5 years
Age	40.8 (0.0737)	46.2 (0.1300)	50.6 (0.1354)	39.6 (0.3541)
% female	88.80% (0.0018)	87.30% (0.0033)	88.00% (0.0043)	79.30% (0.0120)
% married	39.2% (0.0027)	60.86% (0.0047)	65.6% (0.0059)	60.0% (0.0143)
% single mothers	22.1% (0.0026)	15.7% (0.0038)	14.7% (0.0050)	7.9% (0.0080)
% work in urban areas	73.4% (0.0027)	96.3% (0.0017)	97.4% (0.0021)	97.7% (0.0040)
% that primary language at home other than English	9.2% (0.0016)	79.7% (0.0050)	79.4% (0.0055)	82.2% (0.0120)
% in households with income less than 100% of poverty level	19.8% (0.0024)	14.2% (0.0035)	12.7% (0.0035)	16.5% (0.0107)
% in households with income less than 200% of poverty level	50.9% (0.0030)	44.9% (0.0047)	42.5% (0.0067)	49.7% (0.0159)
% working part-time	40.40% (0.0026)	35.70% (0.0055)	33.40% (0.0062)	36.50% (0.0141)
Average hourly wages	\$10.65 (0.0281)	\$11.60 (0.0594)	\$11.75 (0.0830)	\$11.19 (0.1359)
% non-white	35.5% (0.0028)	68.9% (0.0048)	78.7% (0.0131)	73.0% (0.0063)
% with only high school education or less	53.2% (0.0030)	58.2% (0.0045)	56.9% (0.0069)	48.8% (0.0155)
% with associates degree or more	12.7% (0.0018)	20.7% (0.0042)	25.1% (0.0058)	29.5% (0.0134)
Percent of US Workforce	1.2% (0.0001)	16.3% (0.0003)	6.6% (0.0002)	2.3% (0.0002)
Percent of direct care work force	77.1% (0.0020)	22.9% (0.0020)	13.0% (0.0016)	3.2% (0.0008)

Source: American Community Survey, 2009-2011

Sample weights used

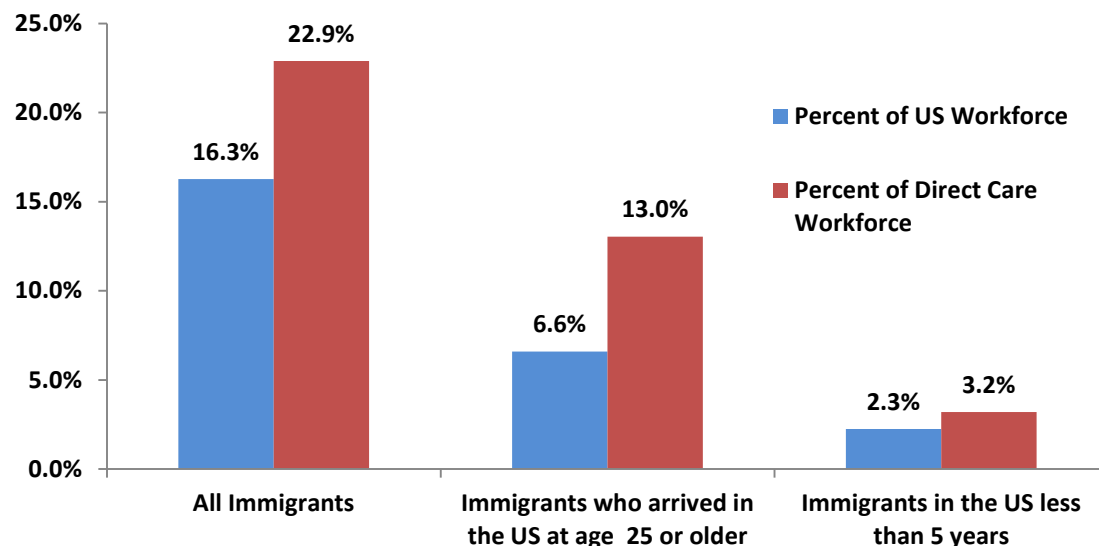
Standard errors in parentheses

Data on the overseas education and experience of immigrant direct care workers is limited. A 2004 survey of nursing aides revealed that only 15% of immigrant aides were trained overseas as a healthcare professional (U.S. Dept. HHS, 2004). Further, the 2003 New Immigrant Survey revealed that only 2.1% of immigrants whose first job in U.S. was in the healthcare support field, which includes direct care workers, matched work experience they had before coming to the U.S. (Jasso et al., 2006). These findings suggest that most immigrant direct care workers do not come to the U.S. specifically to be employed as direct care workers, and many immigrant direct care workers did not serve as direct care workers overseas.

Licensing and Employment Opportunities for Immigrant Direct Care Workers

This subsection addresses the effect of direct care licensing on labor force participation and wages among immigrants direct care workers. As Figure 9 reveals, all three classes of immigrants studied in this paper disproportionately participate in the direct care workforce, relative to their participation in the US workforce overall. This data suggests that immigrants are not disadvantaged, relative to native workers, by direct care licensing. However, given the expected large increase in demand for direct care workers and the shortages currently reported, licensing may deter more immigrants from entering the direct care workforce.

Figure 10: Percent of Immigrants in Workforce



Source: American Community Survey, 2009-2011
Sample weights used

State-based indexes of direct care licensing were developed to assess whether occupational licensing hinders immigrants from working in the direct care industry (Kleiner, 2013). The indexes measure the relative difficulty of direct care licensing requirements in each state.² An index was developed for each direct care occupation, but due to data limitations only the nursing aide index was used for analysis. The nursing aide index is based on the number of training hours each state requires for initial licensure beyond the federal minimum of 75 hours. Though required training hours are only one component of nursing aide licensure, the index served as a straight-forward metric to compare states and a reasonable proxy for the overall robustness of each state's licensing regime. Two variations of the index were developed to assess whether any results are a function of the form of the index. Table 7 provides a statistical summary for each of the indexes developed.

² Appendix B describes the methodology for developing the licensing indexes and also provides the indexes.

Table 7: Statistical Summary of Nursing Aide Index

Licensing Index (as of 2011)	Mean	Std. Dev.	Min	25 th Quartile	Median	75 th Quartile	Max
Nursing Aide 1	2.20	2.63	0.00	0.00	1.00	4.50	10.00
Nursing Aide 2	0.78	0.73	0.00	0.00	1.00	1.00	3.00

Basic regression methods were used to assess whether the relative difficulty of a state's licensing requirements affected immigrant wages or participation in the direct care sector in that state. A state fixed effects approach was used to control for heterogeneity among states.³

The following basic wage and labor force participation models were used:

- $\ln(Earnings_{ist}) = \beta_0 + \beta_1 Lic. Index_{st} + \beta_2 X_{ist} + \beta_3 \delta_s + \beta_4 \gamma_t + \varepsilon_{ist}$
- $Participation_{ist} = \beta_0 + \beta_1 Lic. Index_{st} + \beta_2 X_{ist} + \beta_3 \delta_s + \beta_4 \gamma_t + \varepsilon_{ist}$

$Earnings_{ist}$ is the earnings of the i^{th} nursing aide in state s in year t . $Lic. Index_{st}$ is the state licensing index in state s in year t . X is a vector of individual level covariates.⁴ δ_s and γ_t are state and year fixed effects, respectively. ε_{ist} is the error term, and $Participation_{ist}$ is a binary variable indicating whether the i^{th} individual in state s in year t is a nursing aide.

These models were run with respect to all nursing aides (including natives), all immigrant nursing aides, immigrant nursing aides who arrived in the US at age 25 or older, and immigrant nursing aides who have resided in the U.S. for five years or less. Table 8 shows the results for the earnings model, and Table 9 provides the results for the participation model.

³ A cross-sectional regression analysis was used for home health aides and personal care aides because data limitations prevented the use of state fixed effects with these occupations. However, as explained further in Appendix B, results from the cross-sectional analysis proved unreliable.

⁴ Descriptions of the individual level characteristics included in the wage and labor force participation models are provided in Appendix B.

Table 8: Licensing and Earnings (Nursing Aides): Regression Results

	(1)	(2)	(3)	(4)
	All Nursing Aides	Immigrant Nursing Aides	Immigrant Nursing Aides who arrived in the US at age 25 or older	Immigrants in the US 5 years or less
Nursing Aide Index 1	-0.002 (0.20)	-0.036 (0.83)	0.053 (0.43)	0.061 (1.12)
R-squared	0.590	0.520	0.590	0.510
Nursing Aide Index 2	-0.005 (0.14)	-0.165 (0.94)	0.237 (0.43)	0.232 (1.06)
R-squared	0.590	0.520	0.590	0.510
Year Fixed Effects	Yes	Yes	Yes	Yes
State Fixed Effects	Yes	Yes	Yes	Yes
Individual Level Covariates	Yes	Yes	Yes	Yes
Observations	32281	5054	679	2852

Dependent Variable: Log of Earnings

Robust t statistics in parentheses

* significant at $\alpha=5\%$; ** significant at $\alpha=1\%$

Table 9: Licensing and Participation (Nursing Aides): Probit Model Results

	(1)	(2)	(3)	(4)
	All Nursing Aides	Immigrant Nursing Aides	Immigrant Nursing Aides who arrived in the US at age 25 or older	Immigrants in the US 5 years or less
Nursing Aide Index 1	-0.008 (1.41)	-0.005 (0.18)	-0.016 (0.33)	-0.031 (0.98)
Nursing Aide Index 2	-0.039 (1.57)	0.006 (0.06)	-0.074 (0.33)	-0.106 (0.78)
Year Fixed Effects	Yes	Yes	Yes	Yes
State Fixed Effects	Yes	Yes	Yes	Yes
Individual Level Covariates	Yes	Yes	Yes	Yes

Dependent Variable: 0/1 dummy variable, "1" indicates that the *ith* individual is a nursing aide
 Absolute value of z statistics in parentheses

* significant at $\alpha=5\%$; ** significant at $\alpha=1\%$

In sum, the models do not provide statistically significant evidence that the level of state licensing (i.e., the extent to which a state imposes licensing requirements above the federal minimum) impacts the wages or labor market participation of nursing aides, either generally or for any of the three classes of immigrants. The results are consistent for both indexes.

There are several possible explanations for these results. First, the difference between states with licensing requirements set at the federal minimum (e.g., 75 training hours) and those with higher requirements may not be large enough to impact wages or the participation of nursing aides. Second, marginal differences in licensing requirements may not be sufficient to cause differences in wages across states because the scope of nursing aide work does not change across states. Third, increased training requirements may not create increased financial barriers for nursing aides themselves because it is suspected that in approximately 50% of cases out-of-pocket costs for nursing aide training are paid for by the employer. Fourth, methodologically, the

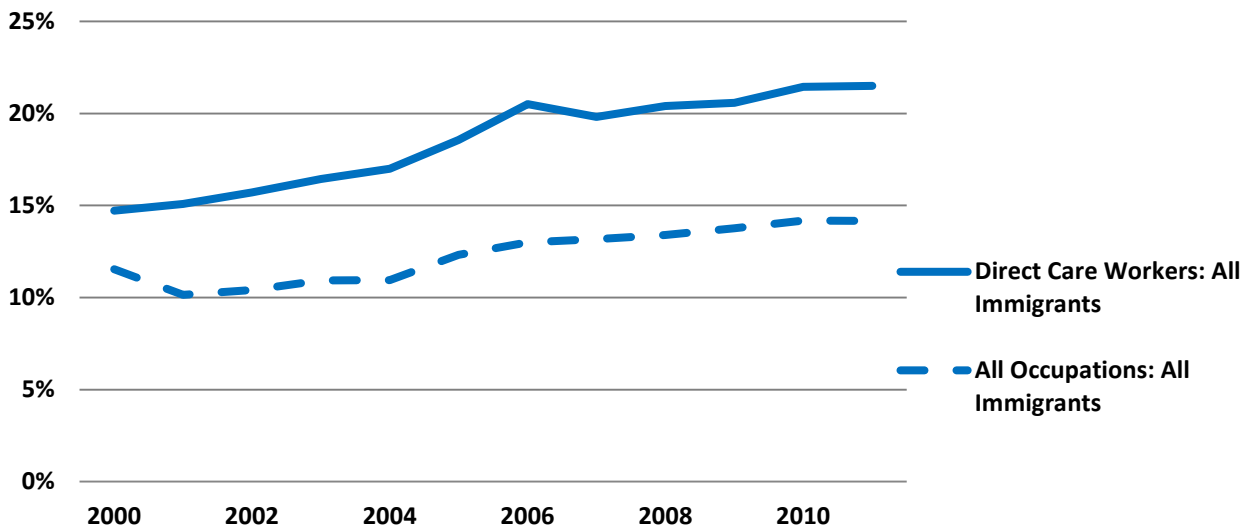
indexes developed may not adequately capture state variation in licensing requirements, particularly given that training hour requirements are only one component of state licensing.

Further, our models for nursing aides did not evaluate the issue of licensing requirements versus no licensing requirements. Rather, our models assess the impact of increased requirements above what is, in effect, a national minimum requirement imposed by federal law. Many of the most important licensure-related barriers that immigrants face in becoming a direct care worker (e.g., language, navigating the licensing process, and cultural barriers) are encountered by immigrants regardless of the stringency of licensing requirements in a particular state. Hence, our models do not capture these baseline barriers for immigrants created by direct care licensure.

Immigrants and Access to Direct Care Services

Since 2000, the percentage of immigrant direct care workers has been increasing (Figure 11). During this same period, a number of reports by government agencies and outside research organizations have pointed to concerns about current shortages of direct care workers (HRSA, 2004). Thus, the increasing number of immigrants in the direct care workforce over the last decade likely helped offset any shortages in the number of direct care workers, and consequently, improved the public's access to direct care services.

Figure 11: Percent of Direct Care Workers that are Immigrants



Source: American Community Survey, 2009-2011
Weighted Figures

However, in comparison with physicians, little systematic data is collected on shortages in the direct care workforce (e.g., unfilled vacancies) or the geographic distribution of shortages. Furthermore, reports of persistent shortages are belied to some degree given that real wages for direct care workers have fallen nationally since 2000 (Table 10).

Table 10: Real Direct Care Worker Wages, 2000 and 2011

	2000	2011
Median Wages for Direct Care Workers (1999 Dollars)	\$9.41 (.0249)	\$8.06 (.0215)

Source: 2000 US Census (5% Sample); American Community Survey 2009-2011
CPI Factor: All Urban Consumers
Weighted Samples Used
Liberalized Standard Errors in Parentheses

While limited quantitative data constrains inferences regarding shortages of direct care workers over the past decade, demographics of an aging U.S. population make the need for more direct care workers over the coming decade a near certainty (National Research Council, 2008). As discussed previously, the Bureau of Labor Statistics forecasts a 52% growth in the number of direct care workers needed from 2010 to 2020 (in comparison with 14% growth in all occupations).

Geographically, the comparatively higher percentage of older persons in rural areas suggests that the relative per capita need for direct care workers is likely to be greater in rural areas than in urban areas (Probst, 2009). As a result, some states have identified the need for rural direct care workers as a major challenge for their healthcare systems (Probst, 2009).

In addition, rural areas are thought to face distinctive challenges in recruiting, retaining, and training an adequate number of direct care workers, due to, among other reasons, a generally less educated workforce and comparatively fewer continuing education opportunities (Probst, 2009). Responding to these challenges, the U.S. Department of Health and Human Services launched the Nursing Assistant and Home Health Aide (NAHHA) grant initiative in 2010 which provides funds to support community-based training programs for direct care workers, with preference given to programs that benefit rural or other underserved areas (HRSA, 2013).

However, the projected need for rural direct care workers is unlikely to be met by immigrants. Immigrant direct care workers are employed overwhelmingly in urban areas. In 2011, 96% of immigrant direct care workers were employed in cities, accounting for 30% of direct care workers in urban areas; whereas immigrants represented only 3% of all rural direct care workers. These figures are nearly identical in the Ninth Federal Reserve District.

The high concentration of immigrant direct care workers in urban areas, in part, reflects that immigrants, in general, work overwhelmingly in urban areas (95% of immigrants, according to 2011 ACS data). However, the high concentration is also likely due, in part, to workers generally not migrating to take direct care jobs, in contrast to some other forms of low-skill employment, such as agriculture and food-processing. Survey evidence suggests that one of the primary attractions of direct care jobs for workers is that positions are available close to their current home. For example, in a 2007 survey of home health aides, 79% reported that the availability of jobs near their home was one of the reasons they became a home health aide (US Dept. HHS, 2007).

Thus, while immigrants represent a large overall labor pool to help meet the U.S. demand for direct care workers, immigrants are unlikely to fill demand in rural areas. As a result, policy tools like the NAHHA grant initiative and other “grow-your-own” workforce development approaches will likely play an important role in meeting the need for direct care workers in rural areas.

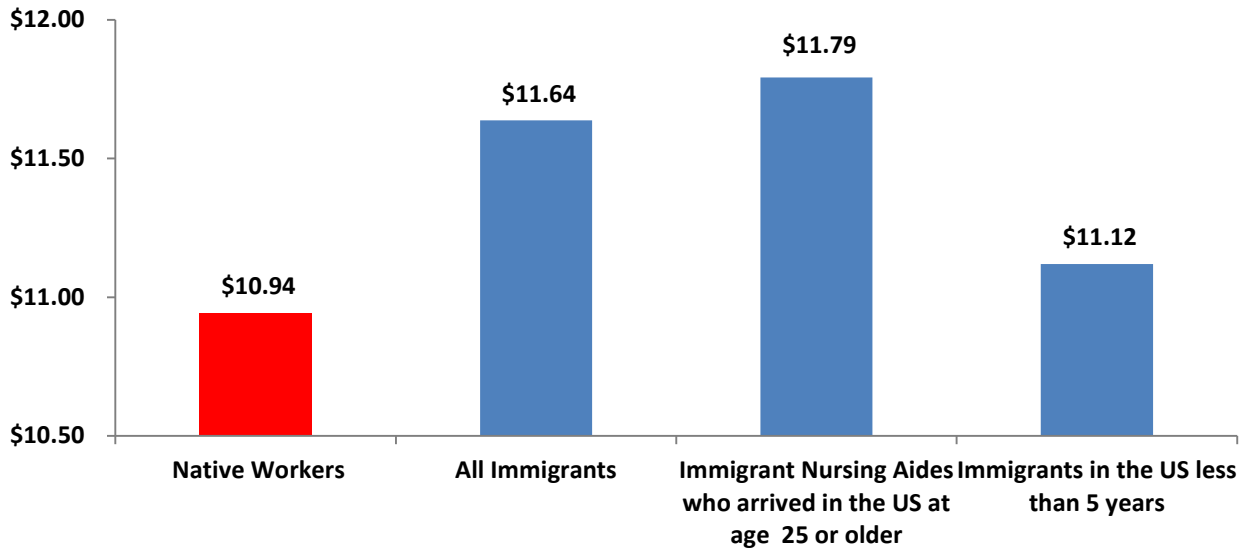
Immigrants and the Quality of the Direct Care Workforce

Relatively little previously published research has used a quantitative approach to assess the quality of direct care workers (Acker, 2013). This lack of research is largely due to methodological difficulties in ascribing patient outcomes to services provided by direct care workers. Additionally, a substantial element of the quality of direct care workers consists of soft or personal skills, since many of their tasks are non-clinical (Cohen et al., 2013).⁵ For these reasons, we used three proxies to assess the impact of immigrants on the quality of the direct care workforce: wages, education, and tenure at current job.

Using wages to assess quality. Hourly wages are an indirect measure of worker quality, with higher wages suggesting higher quality. Figure 12 shows that immigrant direct care workers are paid more than their native counterparts in metropolitan areas, on average, though this discrepancy varies according to the type of immigrant. The wage gap is on average 6.4% for all immigrants, 7.8% for immigrants who arrived when they were 25 years or older, and 1.6% for immigrants in the country five years or less.

⁵ For these reasons, among others, quantitatively assessing the impact of licensing on the quality of the direct care workforce was set aside. We investigated whether data from the National Practitioner Data Bank, which includes state data on adverse actions against the licenses of healthcare practitioners, including direct care workers, could be used as a resource for measuring the quality of direct care workers and the influence of state licensing on their quality. However, data in the National Practitioner Data Bank lacks sufficient detail and comprehensiveness through time and across states to permit a reliable analysis.

Figure 12: Hourly Wages of Direct Care Workers in Metro Area, 2011



Source: American Community Survey, 2009-2011
Weighted Figures

To investigate this wage discrepancy, data from the three-year ACS was used (2009-2011) to run earnings regressions for each immigrant category, with the log of earnings as the dependent variable and a vector of individual-level demographic characteristics as the independent variables.⁶ The regression models were structured as follows:

- $\ln(Earnings_DCW_{is}) = \beta_0 + \beta_1 IMM_{is} + \beta_2 X_{is} + \beta_3 \delta_s + \varepsilon_{is}$
- $\ln(Earnings_DCW_{is}) = \beta_0 + \beta_1 IMM_25_{is} + \beta_2 X_{is} + \beta_3 \delta_s + \varepsilon_{is}$
- $\ln(Earnings_DCW_{is}) = \beta_0 + \beta_1 IMM_New_{is} + \beta_2 X_{is} + \beta_3 \delta_s + \varepsilon_{is}$

$Earnings_DCW_{is}$ is the earnings of the i^{th} direct care worker in state s . IMM_{is} , IMM_25_{is} , and IMM_New_{is} , are binary dummy variables indicating whether the i^{th} direct care worker in state s is an immigrant, an immigrant that arrived in the US at age 25 or older, or an immigrant in the

⁶ Annual earnings were used rather than hourly wages in this analysis because earnings data from the ACS are generally more reliable than hourly wages data, which must be derived from annual earnings based on usual hours and weeks worked in the previous year.

U.S. five years or less, respectively. X_{is} is a vector of individual level covariates.⁷ δ_s is the state fixed effects term, and ε_{ist} is the error term.

The results in Table 11 reveal that a statistically significant earnings discrepancy exists between natives and all immigrants, and between natives and immigrants that were 25 or older when they arrived, controlling for basic demographic characteristics. The earnings gap is in favor of natives, but is not statistically significant when examining differences between natives and immigrants who have been in the country five years or less. The immigrant advantage likely disappears due to the shorter work history of immigrants who have been in the country five years or less.

Table 11: Results of Earnings Regression for Direct Care Workers

	(1) All Immigrants	(2) Immigrants who arrived in the US at age 25 or older	(3) Immigrants in the US 5 years or less
Dummy 1=Immigrant 0=Native	0.053 (6.55)**	0.047 (4.74)**	-0.025 (1.39)
R-squared	0.530	0.530	0.530
Year Fixed Effects	No	No	No
State Fixed Effects	Yes	Yes	Yes
Individual Level Covariates	Yes	Yes	Yes
Observations	51174	46479	41252

Dependent Variable: Log of Earnings

Robust t statistics in parentheses

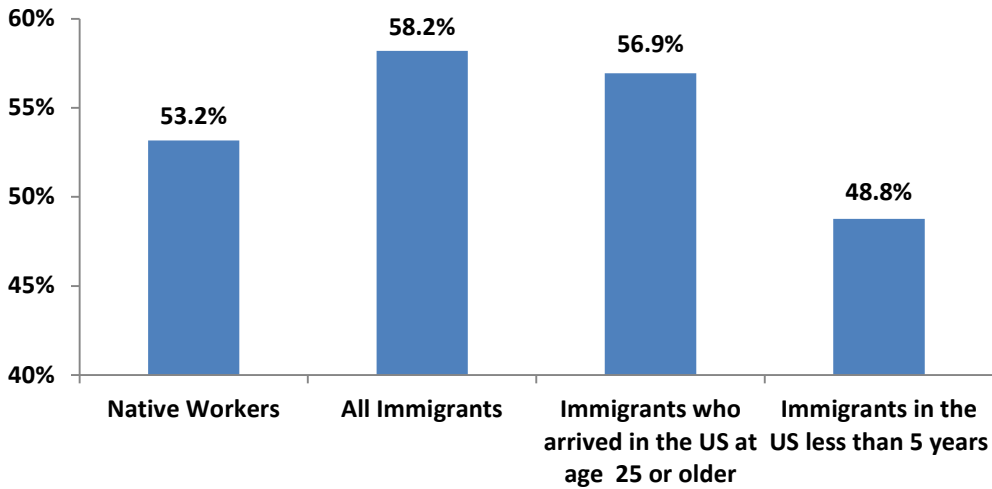
* significant at $\alpha=5\%$ level; ** significant at $\alpha=1\%$

⁷ Descriptions of the individual level characteristics included in the earnings models are provided in Appendix B.

The positive effect on earnings of characteristics not controlled for (i.e., non-basic demographic characteristics) is approximately 5.3% and 4.7% for all immigrants and older immigrants, respectively. These results suggest that other characteristics are increasing the wages of immigrant direct care workers relative to native workers. Quality may be one of these characteristics.

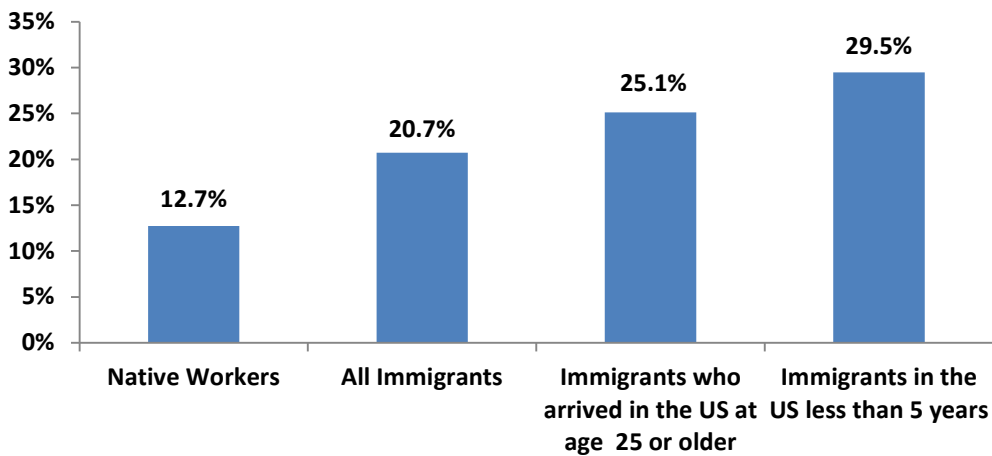
Using education to assess quality. Education can also be used as an indirect measure of worker quality. Among direct care workers, greater technical skills are associated with higher patient satisfaction (Cohen et al., 2013). Figure 13 shows that relative to native workers, generally a higher portion of immigrant direct care workers have only a high school education or less. However, in regards to an associate's degree or higher, the situation is reversed: a higher percentage of immigrant workers have such degrees (Figure 14). The fields in which these degrees are obtained cannot be determined, but among direct care workers, a higher level of formal education is suggestive of attainment of skills beyond those obtained in the minimum training required for licensure.

Figure 13: Percent of Direct Care Workers with Only High School Education or Less



Source: American Community Survey, 2009-2011
Weighted Figures

Figure 14: Percent of Direct Care Workers with Associate Degree or Higher



Source: American Community Survey, 2009-2011
Weighted Figures

Thus, these results suggest that a comparatively larger fraction of immigrant direct care workers relative to natives have some advanced, formal training, which may translate into better technical skills, and thus, higher quality among these immigrant workers.

Of particular interest in our analysis were highly-skilled immigrant physicians who have entered the United States through a pathway other than an employment visa. These physicians, who have likely been trained in a foreign country and had their process interrupted (i.e., forced into refugee or asylee status), have found it increasingly difficult to practice in the U.S. As a result, many former physicians may practice in conventionally lower-skilled occupations, such as direct care, where they may have some familiarity. We recommend further research into these individuals; however, their skills may, in part, reflect the overall higher skills of immigrant direct care workers compared to their native-born counterparts.

Using job tenure to assess quality. Direct care occupations are subject to high turnover rates. Studies have found that 40% to 60% of home health aides leave their job within the first year. In nursing homes, the average turnover per year nationally for nursing aides is estimated to be 71% (National Research Council, 2008). Though the evidence is not conclusive, facility-based research has linked high turnover rates with lower quality patient care (National Research Council, 2008).

Data on turnover among immigrant direct care workers is almost non-existent. However, a 2004 national survey of nursing aides permits limited analyses, albeit with a small number of nursing aides that were identified as immigrants (n=197; U.S. Dept. HHS, 2004). Among native nursing aides in the survey, 25% reported they were currently looking for a different job, whereas 30% of immigrants were looking for alternative employment. Similarly, 45% of natives responded that they were either very likely or somewhat likely to leave their current job within

the year. For immigrants, this figure was 59%. These results, while far from conclusive, suggest that among direct care workers, immigrants may have higher rates than native workers.

Overall, while these three proxies to gauge quality have limitations, our evidence suggests the effect of immigrants on the quality of the direct care workforce is either neutral or positive.

VI. Conclusion and Policy Recommendations

Immigrants must continue to play a vital role in filling gaps left by the U.S. native-born workforce, especially in licensed healthcare occupations such as physicians and direct care workers. Immigrants represent a higher percentage of physicians and direct care workers than in the healthcare sector as a whole and the overall workforce in the U.S. In addition to being among the fastest growing occupations in the U.S., these occupations, particularly physicians, also offer immigrants the opportunity to earn higher wages than in their native countries. While the physician and direct care occupations currently rely heavily on immigrants, the ability of immigrants to enter these occupations can be challenging.

While equalizing the length of residency requirements for IMGs and USMGs would open the door to additional IMGs practicing in states with previously unequal requirements, restrictions in the number of available residencies inhibits potential growth in the number of physicians practicing in the U.S. For foreign-born IMGs to serve as an increasing part of the solution to the current and potentially growing physician shortage in the U.S., the number of residencies would have to grow at a pace above the current 1% growth rate in recent years. The discussion regarding increasing federal funding (through Medicare) of physician residencies entered the political sphere in March 2013, with the introduction of the bipartisan Training Tomorrow's Doctors Today Act (H.R. 1201). The legislation, which did not receive a vote on the floor of the House of Representatives, proposed funding an additional 15,000 residencies over the next 5 years (3,000 yearly). Given the roughly 4,000 foreign-born IMGs annually that are not matched to a residency, all of the increased residency positions could be filled by foreign-born IMGs if their match rate approached that of USMGs (94%). Furthermore, given projections of future physician supply and demand, this residency expansion would result in 19% of the total

physician gap being filled in 2015. If funding to increase the number of yearly residencies was extended through 2025, approximately 3% of the total physician gap would be filled in 2025, which reflects the increasing rate of the projected expansion of the total physician gap. The new residencies also could be reserved for primary care positions, which could help reduce the PCP shortage, particularly in rural and persistent poverty areas.

If foreign-born IMGs became a primary recipient of newly created residencies, the number of H-1B and J-1 visas made available to foreign-born IMGs would also have to increase. In addition, the process of establishing permanent residency and becoming a naturalized citizen would have to be eased for foreign-born IMGs to be part of a long-run solution to the problem of a continued physician shortage. The 2013 Senate Immigration Bill contains provisions that would increase the number of annually allotted H-1B visas, potentially expand the Conrad 30 Waiver Program in each state, and increase the number of green cards available to high-skilled workers, including physicians.

For immigrant direct care workers, language barriers, cultural competency, and training costs are the most difficult barriers to entry into the occupation. Because two occupations within direct care (home health aide and personal care aide) are the two professions projected by the Bureau of Labor Statistics to grow the fastest between 2010 and 2020, the U.S. workforce is unlikely to be able to meet this occupational demand without the assistance of trained immigrants. Because these lower-skilled immigrants have fewer resources to complete their training and gain proficiency in these areas, several states, in addition to the public and non-profit sectors, have begun to develop microfinance or training options to assist them.

Our analyses of the impacts of licensing on immigrant direct care workers found that increased licensing requirements for nursing aides did not affect the earnings of immigrant

nursing aides or the participation of immigrants in the nursing aide labor force. Additionally, our analyses suggest that the quality of care provided by immigrant direct care workers is equal to or better than the care provided by native direct care workers.

Overall, the U.S. is poised to experience noticeable changes in the delivery of healthcare. The changes will not only involve how healthcare is delivered, but also *who* is providing the service. Immigrants must continue to play a major role in the healthcare sector in the U.S. to meet the demands of an aging population and far-reaching public policies such as the Affordable Care Act.

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Appendix A.

List of Qualitative Analysis Interview Questions

Each of the questions listed below are coded to cover the paper's themes of opportunities for employment (O), access to healthcare (A), and quality of medical services (Q).

Questions for immigrants working in healthcare occupations

- O Can you briefly describe your understanding of occupational licensing in your area of work?
- O Are you currently licensed in your profession here in the United States?
- O Were you licensed for a profession in your country of origin? If different, why?
- O Do you want to work toward licensure in another profession?
- O If you are licensed in a profession here, how would you compare the process for licensure or certification here in the United States compared with the process to be licensed in your country of origin?"
- Q How would you view professional standards here compared to your nation of origin? Are the standards here higher or lower?
- O Have you faced any barriers, licensing or other, to employment in the United States?"
- A, Q "Do you feel any hesitation in seeking medical care in the United States?";
- Q How would you describe the level of medical care you received in your home country in comparison to medical care you have received in the United States?
- A As a professional, do you notice any difference in accessibility for patients to medical services in comparison to healthcare in your nation of origin?
- O Does occupational licensing in your field increase wages?
- O What disadvantages does the immigrant community face when seeking employment?
- O Do language barriers prevent immigrants from seeking licensure?

- O Do financial obligations prevent immigrants from seeking licensure?
- O Did you have any difficulty raising capital to obtain financing for school or licensure?
- O Did you come to the United States on an employer-sponsored visa?
- O In practice, would you say a license is actually required to gain employment in your field?
- O Do you worry as an immigrant that you might have difficulty getting a job or getting patients?
- O Do you think that requiring a license for your job may have helped you or other immigrants to be employed because it shows that you are qualified given different education and cultural backgrounds?
- O Do you feel pressures from native populations within your occupation?
- A Do you provide medical care to people who are from the same nation of origin as you?
- A Are you familiar with the term ‘culturally-competent care’? If so, how does it relate to the healthcare that you offer patients?
- A Is the place where you work busy? How do you think the Affordable Care Act will change the number and type of patients that you will serve?
- A Do you live in a rural or urban area?
- A Do you provide healthcare to rural or urban patients, or a mix?
- Do you know what, if any, programs are offered in your profession to encourage healthcare providers to work in rural or underserved areas in the US? Have you participated in any of these, and why or why not?
- Are there any questions that you wish I asked? Is there anything else you want to tell me?

Questions for healthcare administrators, residency coordinators, and medical school admissions committee members.

- O Can you briefly describe your understanding of occupational licensing in your area of work?
- A How do you think the Affordable Care Act will change the number and type of patients that are served in your healthcare field?
- O In your area of healthcare, what are the requirements an immigrant applicant would need to meet in order to be accepted into your program/profession?
- A Is there a shortage of healthcare professionals in your area of work?
- A Would loosening the requirements for acceptance of foreign-trained professionals be beneficial to your area of work?
- Q Do you believe that occupational licensing ensures quality healthcare from qualified providers?
- O Do you believe that occupational licensing makes it more difficult for adequately-qualified providers to work in their area of expertise?
- Q What, if any, are your concerns about the differences in medical education and how foreign-trained healthcare providers might be prepared to offer appropriate care in the United States?
- O In your opinion, does occupational licensing unfairly exclude people who have been educated in foreign countries?
- Q If you see applicants to your program who were trained in a foreign country, are there some countries you would consider to have education comparable to that which is offered in the United States? If so, which nations, and why?

- Q If you are considering foreign-trained applicants to your program, and if you are able to include their foreign training qualifications in their application, do you research the specific schools they attended to determine the quality of education they received?
- O Does occupational licensing in your field increase wages?
- O What disadvantages does the immigrant community face when seeking employment?
- O Do you think that requiring a license for jobs may help immigrants to be employed because it shows that they are qualified given different education and cultural backgrounds?
- O Do language barriers prevent immigrants from seeking licensure?
- O Do financial obligations prevent immigrants from seeking licensure?
- A Are you familiar with the term ‘culturally-competent care’? If so, how does it relate to the healthcare that is offered in your area?
- A Do you feel there is a need to better healthcare services to rural communities?
- Are there any questions that you wish I asked? Is there anything else you want to tell me?

Appendix B.

Background on Quantitative Methods used for Direct Care Workers

Identification of Direct Care Workers in the American Community Survey (ACS)

Personal care aides have their own occupational code (4160). However, as of the 2011 ACS, nursing and home health aides share the same occupational code along with psychiatric aides (3600). Since nearly all nursing aides work in nursing homes, they were separately identified by the industry codes for “nursing care facilities” and “residential care facilities without nursing” (8270 and 8290, respectively). Similarly, home health aides were separately identified by the industry code for “home health care services” (8170).

Development of State Licensing Indexes

The indexes of state licensing requirements for nursing and home health aides were based on training hours required by each state’s licensing program. Information on these requirements was collected from the State Data Center developed by the Paraprofessional Healthcare Institute (<http://phinational.org/policy/states>), along with individual state statutes and regulatory rules.

Two index scoring methods were developed for these occupations. The first was based on the following formula: (state training hours required, less the federal minimum training hours required) divided by 10. The second scoring method classified each state on a scale from 0-3, with a score of 0 indicating the state’s training hour requirements were the same as the federal minimum, a score of 1 indicating the state’s training hour requirements are 10 to 50 hours greater than the federal minimum, a score of 2 indicating the state’s training hour requirements are 50 to 100 hours greater than the federal minimum, and a score of 3 indicating the state’s training hour requirements are 100 or more hours greater than the federal minimum.

The index of state licensing requirements for personal care aides was developed using the summary of state requirements developed by the Paraprofessional Healthcare Institute and

housed in their State Data Center (<http://phinational.org/policy/states>). The scoring in the index was based on a scale of 0 to 3, with a score of 0 indicating the state has no licensing requirements for personal care aides, a score of 1 indicating the state has requirements in some state programs, a score of 2 indicating the state has requirements in all programs but the requirements are not uniform across programs, and a score of 3 indicating the state has uniform requirements across all state programs. The following table shows the values of each index form, as of 2011.

Table B1: Values of State Licensing Indexes (as of 2011)

State	Nursing Aide Index 1	Nursing Aide Index 2	Home Health Aide Index 1	Home Health Aide Index 2	Personal Care Aide Index
Alabama	0	0	0	0	0
Alaska	6.5	2	6.5	2	3
Arizona	4.5	1	0	0	3
Arkansas	1.5	1	0	0	3
California	7.5	2	4.5	1	0
Colorado	0	0	0	0	1
Connecticut	2.5	1	0	0	0
Delaware	7.5	2	0	0	3
District of Columbia	4.5	1	0	0	3
Florida	4.5	1	0	0	2
Georgia	1	1	0	0	3
Hawaii	2.5	1	2.5	1	3
Idaho	4.5	1	4.5	1	3
Illinois	4.5	1	4.5	1	2
Indiana	3	1	0	0	1
Iowa	0	0	0	0	0
Kansas	1.5	1	3.5	1	0
Kentucky	0	0	0	0	3
Louisiana	0.5	1	0	0	3
Maine	7.5	2	10.5	3	2
Maryland	2.5	2	2.5	1	1
Massachusetts	0	0	0	0	1
Michigan	0	0	0	0	0
Minnesota	0	0	0	0	3
Mississippi	0	0	0	0	3
Missouri	10	3	0	0	2
Montana	0	0	1.6	1	2
Nebraska	0	0	0	0	0
Nevada	0	0	0	0	1
New Hampshire	2.5	1	2.5	1	2
New Jersey	1.5	1	0.1	1	1
New Mexico	0	0	0	0	3
New York	2.5	1	0	0	1
North Carolina	0	0	0	0	3
North Dakota	0	0	0	0	3
Ohio	0	0	0	0	1
Oklahoma	0	0	0	0	3
Oregon	7.5	2	0	0	3
Pennsylvania	0.5	1	0	0	1
Rhode Island	2.5	1	2.5	1	1
South Carolina	0.5	1	0	0	3
South Dakota	0	0	0	0	0
Tennessee	0	0	0	0	1
Texas	2.5	1	0	0	1
Utah	0.5	1	0	0	0
Vermont	0.5	1	0.5	1	0
Virginia	4.5	1	0	0	3
Washington	1	1	1	1	3
West Virginia	4.5	1	0	0	2
Wisconsin	4.5	1	4.5	1	3
Wyoming	0	0	1.6	1	2

Limitations with State Indexes

With respect to the indexes for home health and personal care aides, accurate multi-year data on the licensing requirements of each state for these occupations could generally not be identified. In addition, to the extent multi-year data could be obtained for particularly states, no states were found to have changed their requirements within the last decade. Accordingly, state fixed effects regression models could not be run with the indexes for these two occupations. Adequate multi-year data was collected for nursing aides covering the period from 2001 to 2011. During this period, five states changed their training requirements for nursing aides. Accordingly, state fixed effects models could be run with the nursing aide indexes, as discussed in the main body of this paper.

Analysis of Indexes Using Cross-Sectional Methods

Because adequate data was not available to run state fixed effects models for the home health aide and personal care aide indexes, a cross-sectional regression approach was employed on all three indexes using 2011 licensing data. The results from this approach proved unreliable, generating inconsistent results across different iterations of the models, including results inconsistent with the state fixed effects models used with the nursing aide index discussed in the main body of this paper.

The unreliability of the cross-sectional models was confirmed by replacing the indexes used in the cross-sectional models with randomly generated numbers. The random number indexes generally duplicated the results produced with the actual indexes. The primary reason for this unreliability was likely the inability to adequately account for state heterogeneity with state-level covariates in the cross-section regressions.

Individual Covariates Employed in Regression Models

The regression models summarized in Tables 8, 9, and 11 of the main body of this paper employed individual-level covariates as independent variables. For those regressions that examined labor force participation (i.e., the regression models for which the results are summarized in Table 9), the following individual-level covariates were used: *education level*, *age*, *sex*, *race*, and *marital status*. For the earnings regressions (i.e., the regression models for which the results are summarized in Tables 8 and 11), the same individual-level covariates were used along with the following additional covariates: *usual hours worked*, *usual weeks worked*, and a dummy variable for whether or not the individual worked in a *metropolitan area*.

Survey Weights

Where it is indicated in the main body of the paper that survey sample weights were used with American Community Survey data, weighting was done using the replicate weighting method as discussed in IPUMS USA, “Replicate Weights in the American Community Survey/Puerto Rican Community Survey,” available at <https://usa.ipums.org/usa/repwt.shtml> (last accessed December 23, 2013).