North Carolina's Health Care Workforce:
How Global Are We?

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The globalization of health care is often characterized as an up-and-coming phenomenon, but one aspect of the US health care system has been "globalized" for many years: internationally educated health professionals have played a significant role in the provision of health care in the United States since at least the 1960s. Today, international medical graduates (IMGs) compose approximately 25% of the nation's physician workforce, and internationally educated nurses (IENs) compose at least 5% of the nursing workforce [1, 2]. The largest source countries of IMGs are India, the Philippines, Pakistan, and Canada [1], and the largest source countries of IENs are the Philippines, Canada, the United Kingdom, and Nigeria [2]. Although data on internationally educated dentists are more difficult to obtain, recent estimates suggest that around 8% of United States dental school graduates were originally trained overseas. The top source countries for dentists include India, the Philippines, and Colombia [3].

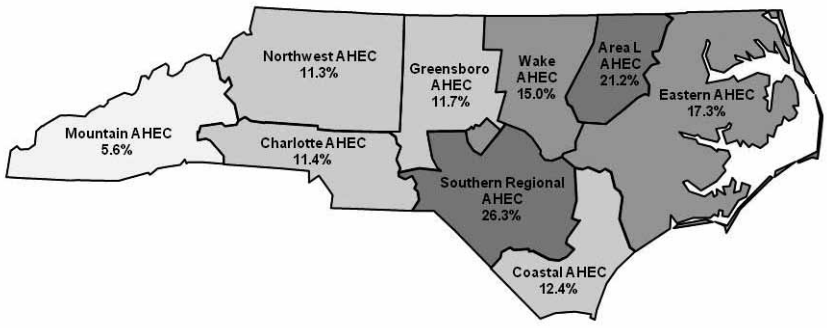
Given the sustained presence of internationally educated health professionals in the US health care system, it is important for state policymakers to understand the role of these professionals in North Carolina's health care system. This article uses unpublished data from the 2008 North Carolina Health Professions Data System to examine the source-country profile and geographic distribution of the state's internationally educated physicians, nurses, and dentists. It also discusses the role of each group in filling shortages in North Carolina and examines the broader implications of health professional migration for sending and receiving countries.

Physicians

IMGs composed 13.4% of the active physician workforce (2,608 of 19,449 physicians) in North Carolina in 2008—a significantly smaller proportion than the national average of 25% [1]. The largest source countries were India (23.6% of IMGs and 3.2% of all active physicians—the only country to supply more than 1% of North Carolina's physician workforce), Canada (6.0% of IMGs), the United Kingdom (5.4% of IMGs), and the Philippines (4.4% of IMGs). The profile was similar to national statistics, although with smaller overall numbers. Also worth noting is the fact that 2.9% of North Carolina's IMG physicians were educated in Grenada; it is likely that many of these were US citizens who were educated at offshore medical schools [4].

The geographic distribution of IMGs within North Carolina, by Area Health Education Center (AHEC) region, is shown in Figure 1. The percentage of IMGs varied from 5.6% (90 of 1,598 physicians) in the Mountain AHEC region in western North Carolina to 26.4% (310 of 1,177 physicians) in the Southern Regional AHEC region. The region with the largest number of IMGs was the Wake AHEC region in central North Carolina, with 610 IMGs (15.0% of 4,112 total physicians). Although the Area L region in northeastern North Carolina had a relatively high percentage of IMGs (21.2%), the overall number of IMGs was the smallest of any region (86 of 406 physicians).

Figure 1.
Percentages of Physicians Who Are International Medical Graduates, by Area Health Education Center (AHEC) Region



Note. Percentages are based on unpublished data from the 2008 North Carolina Health Professions Data System.

The geographic distribution of IMGs is likely influenced by visa provisions that privilege immigrant physicians willing to work in shortage areas. Since they are required to complete residency training in the United States, most IMGs enter this country on J-1 training visas, whose hold-

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ers are required to leave the United States for 2 years before they can apply to return [5]. However, IMGs who serve in federally designated health professional shortage areas can waive the return-home requirement under the Conrad J-1 Visa Waiver Program [6], which allows state health departments to request 30 visa waivers annually for IMGs working for approved employers. Federal agencies such as the Department of Health and Human Services and the Appalachian Regional Commission (a federal-state partnership) can also request waivers [7]. Program requirements vary by state; under North Carolina's Conrad Program, 10 visas may be requested for specialist physicians, whereas 20 are reserved for primary care physicians (ie, those working in family practice, internal medicine, pediatrics, and obstetrics/gynecology).

Although it has not used all of its Conrad Program slots in recent years [8], North Carolina has been relatively successful in retaining IMGs through a variety of channels. The state's IMG retention rate is greater than its retention rate for US medical graduates and greater than the median state retention rate for IMGs [9]. Besides J-1 visa waivers, IMGs who work in shortage areas can pursue residency in the United States through the labor certification or national interest waiver processes. The labor-certification process gives residency to IMGs whose employers can demonstrate a shortage of qualified workers to fill the position. IMGs who work at least 5 five years in medically underserved areas are also eligible for residency through national interest waivers, which are given to immigrants with unique abilities that contribute to the country's quality of life [10].

Nurses

IENs composed 2.9% of North Carolina's active registered nurse workforce (2,496 of 86,896 nurses) in 2008—just over half the national average of 5.6% [11]. The largest source countries were Canada (38.7% of all North Carolina IENs and 1.1% of all North Carolina nurses), the Philippines (30.9%), the United Kingdom (4.9%), and India (4.4%). North Carolina is the third largest destination state for registered nurses who trained in Canada, likely because its offers reciprocal licensure for Canadian nurses [12]. Migration of Canadian nurses to the United States is also facilitated by increased visa eligibility under the 1994 North American Free Trade Agreement (NAFTA) and easier credentialing under the Rural and Urban Health Care Act of 2001 [13].

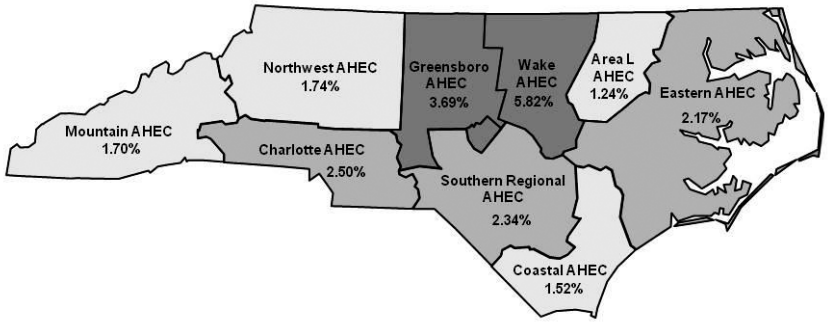
The distribution of IENs in North Carolina by AHEC region is shown in Figure 2. The percentage of IENs in each region's workforce ranged from 1.2% (30 of 2,418 registered nurses) in the Area L region to 5.8% (928 of 15,958 registered nurses) in the Wake region, which also has the largest overall number of IENs. The geographic distribution of IENs did not appear closely correlated with the distribution of IMGs. For example, the Area L region had the second-highest percentage of IMGs and the lowest percentage of IENs, while the Greensboro region had a below-average percentage of IMGs and the second-highest percentage of IENs.

This dissimilarity could be related to the fact that visa policies for IENs are less explicitly concerned than IMG visa policies with placement in shortage areas. Only the H-1C visa category (established under the Nursing Relief for Disadvantaged Areas Act of 1999) is specifically intended to place IENs in underserved areas in the United States, and the program involves a very small number of nurses and employers. Only 1 North Carolina hospital was eligible for the H-1C program, which expired in 2009 [14]. The other temporary visa categories for IENs (H-1B, renewable 3-year visas for workers with bachelor's degrees; and TN, renewable one-year visas for Mexican and Canadian workers linked to NAFTA [15, 16]) can be used by employers in any setting. Because all of these categories are restrictive, many employers seek to hire IENs on permanent (EB-3) immigrant visas, a process that is slowed by numerical quotas and long backlogs despite the fact that nurses are on a list of preferred professions for visas [17].

Dentists

Internationally educated dentists composed 0.75% of North Carolina's dental workforce (30 of 3,987 dentists) in 2008. All were trained in North America—15 each in Canada and Puerto Rico. Figure 3 shows their geographic distribution by AHEC region. Most internationally educated dentists are located in the Eastern, Area L, and Charlotte AHEC regions. The number of internationally educated dentists is very small because, unlike physicians and nurses, they are required

Figure 2.
Percentages of Nurses Who Are Internationally Educated, by Area Health Education Center (AHEC) Region

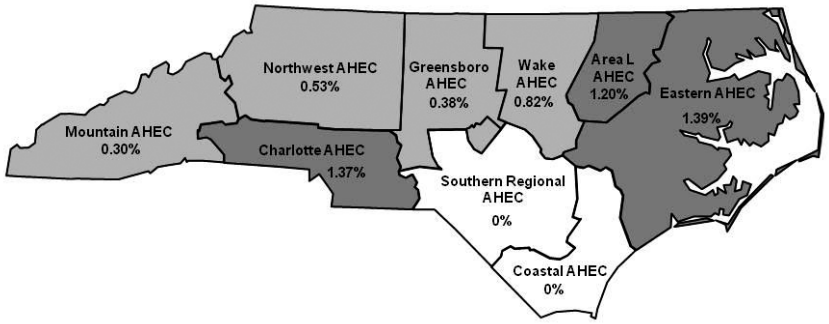


Note. Percentages are based on unpublished data from the 2008 North Carolina Health Professions Data System.

to complete degree programs accredited by the American Dental Association (ADA) before they can work in the United States [18].

North Carolina's Dental Board allows graduates of overseas dental schools to apply for licensure after completing at least 2 years of dental school, earning a degree at an ADA-accredited dental school, and passing written and clinical examinations [19]. Although some United States dental schools offer shortened degree programs for internationally educated dentists, the University of North Carolina School of Dentistry (North Carolina's only dental school) requires them to enter its doctor of dental sciences program as first-year students. The School of Dentistry's recently published *Carolina 2010* academic plan indicates that the school intends to develop an accelerated program for internationally educated dentists, as well as alternative pathways to licensure for internationally educated dentists willing to work in shortage areas [20]. When implemented, these initiatives could make the licensure process less burdensome for internationally educated dentists in North Carolina and provide them with new avenues to fill gaps in the state's dental care system.

Figure 3.
Percentages of Dentists Who Are Internationally Educated, by Area Health Education Center (AHEC) Region



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Policy Implications

International migration of health professionals is a long-standing phenomenon that is likely to continue for many years into the future. Although they offset staffing shortages and fill critical gaps in receiving countries, it is important to remember that the departure of large numbers of health professionals can exacerbate shortages in sending countries, a particular problem for developing countries that can ill afford lost investments in education and diminished health system capacity. Some receiving countries (eg, the United Kingdom) have established concrete ethical recruitment policies to counteract these negative effects [21], but the United States has not, leaving the responsibility of balancing ethical concerns with staffing needs with individual employers. US health workforce planners must carefully consider how meeting domestic needs can place burdens on other countries' health care systems and workforce supplies.

A related concern is the fact that, although international recruitment of health care professionals helps health care organizations meet current needs, it does not address the underlying conditions that contribute to health professional shortages in the United States—insufficient educational capacity, high turnover (especially in nursing), and other issues. Policy changes intended to address domestic supply issues have come from the American Association of Medical Colleges, which has recommended increases in medical school and graduate medical education enrollment in order to address a perceived shortage of physicians [22]. Legislation, such as the 2002 Nurse Reinvestment Act and the 2010 Affordable Care Act, aim to improve recruitment and retention of nurses through loan repayment, education vouchers, and retention grants [23, 24]. Although their overall effects on the role of internationally educated health professionals in the United States health care system are still unclear, these measures reflect a growing awareness that the future of our health system depends on strong domestic education systems, as well. NCMJ

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