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Role of International Medical Graduates in Kentucky Medicine: Implications For Workforce Planning and Medical Education

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An argument for International Medical Graduates (IMGs) as part of a state's physician workforce is that they "fill the gap" created by the shortage of United States Medical Graduates (USMGs) required to meet the demand for physician services, especially primary care physicians in rural areas.

The purpose of this study is to examine the overall impact of IMGs on Kentucky's physician workforce and determine whether they overcome the shortage of USMGs. Information from the Kentucky Board of Medical Licensure (KBML) was used to examine the distribution and practice patterns of IMGs and USMGs. IMGs are similar to USMGs in terms of gender, age, and average hours worked. IMGs were not any more likely than USMGs to practice in a primary care specialty. They were more likely to practice in a rural county and a county with a critical access hospital.

In conclusion, IMGs do not completely "fill the gap" in physician shortages in most Kentucky counties. More programs to attract and retain physicians should be developed, especially in rural areas. Additional residency programs at regional medical centers is one recommendation to accomplish this.

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INTRODUCTION

The United States was at one time projected to have an abundance of physicians in the workforce by the beginning of the twenty-first century. However, now the country has proven to have a severe shortage of physicians.[1] The American College of Physicians has suggested a deficit of 45,000 primary care physicians by the year 2025.[2-3] This demand for physicians will only increase if health care reform is implemented in accordance with the Patient Protection and Affordable Care Act, which will take full effect January 1, 2015.[4] The new legislation is intended to increase access to health care by insuring 92% of the nonelderly population by the year 2019.[5] As such, primary care will be the point of entry at which many of the newly insured first encounter a physician.

Coupled with the already existing shortage in primary care physicians, newer generations of physicians are trending away from careers in primary care. This is because of the attractiveness of lifestyles afforded by other specialties and the challenges associated with caring for chronically ill patients.[6]

In order to address the shortage of primary care physicians, focus has turned to international Medical Graduates (IMGs). IMGs are reported to be of value to the United States health care system by practicing in all specialties and in all demographic areas, particularly by practicing primary care in rural settings.[7] The purpose of this paper is to examine the demographic and practice characteristics of IMGs in Kentucky and to explore the role

of IMGs in "filling the gap" of physicians in underserved areas.

METHODS

Data were acquired from the Kentucky Board of Medical Licensure (KBML) for all 15,445 physicians who were licensed to practice medicine within the Commonwealth as of September 2011. This information was obtained by the KBML in a regular, mandatory, annual relicensure survey of new applications from physicians to practice medicine in Kentucky. The data include variables detailing gender, date of birth, race/ethnicity, specialty, type of practice, birthplace, degree, medical school that granted either MD or DO degree, graduation date, date of licensure in Kentucky, practice location, hours practiced per week, and other variables.

Data were coded to include only physicians who practiced at least an average of 20 hours per week and had a ZIP code, city, or county indicating the location of their medical practice within the State. Physicians who self-reported as being locum tenens and/or semi-retired were included if they met these two criteria. Residents and fellows were excluded because the focus of this analysis is the permanent physician workforce for the Commonwealth of Kentucky.

Physicians were classified as having either primary care or nonprimary care medical specialties. Physicians who indicated a specialty of family medicine, general practice, general internal medicine, or general pediatrics were coded as primary care; all others were listed as nonprimary care. Physicians were also classified as being either an IMG or United States medical graduate (USMG) depending on the geographical location of the medical school from which they graduated. IMGs include physicians who graduated from medical schools outside of the United States and Canada. Canadian medical school graduates were included in USMG aggregations because medical schools of both countries provide reciprocal accreditation through the Liaison Committee on Medical Education and the Committee on Accreditation of Canadian Medical Schools.

The location of physician practices was also classified in terms of rurality using the Rural-Urban Continuum Codes (RUCC)[8] and the presence in the county of practice of a critical care access hospital.[9] The RUCC comprise a schema that distinguishes metropolitan counties by the population size of their metropolitan area and nonmetropolitan counties by degree of urbanization and adjacency to a metropolitan area. These codes enable refinement of county data into more precise residential groups than the metropolitan-nonmetropolitan dichotomy for better determining the influence of degrees of rurality or proximity to a metropolitan area on access to and utilization of physician services. The nine-point Rural-Urban Continuum Codes (RUCC) were used to classify whether the hours practiced were in an urban (1-3) or increasingly rural (4-9) setting.

Statistical tests were of differences between proportions or means between IMGs and USMGs for each type of geographical area or other comparison.

RESULTS

International medical graduates make up 20% of the total physician workforce in Kentucky and 20.7% of primary care physicians. IMGs were similar in several background characteristics to the state's USMGs (Table 1) such as gender, age, and average hours worked per week. All IMGs listed their medical degree as MD, while USMGs reported 93.6% MD and 6.4% DO. The vast majority of

Table 1. Descriptive Characteristics of IMGs and USMGs

Gender	IMGs (1696)	USMGs[2] (6773)	P value
Male	74.6%	74.2%	=.683
Female	25.4%	25.8%	=.683
Age in Years	50.9	50.7	=.553
Hours Work per Week	50.3	49.6	=.145
Years KY License	14.0	17.8	<.001
Time Since Graduation	25.6	24.5	<.001
Degree			
MD	100%	93.6% (6338)	
DO		6.4% (435)	

Table 2. Location of Kentucky's Active IMG and USMG Physicians

Main Practice Site	IMGs (1696)	USMGs (6773)	P value
Rural County[1]	38.5% (653)	26.0% (1761)	<.001
Critical Access Hospital	8.4% (143)	5.4% (366)	<.001

[1]Based on Urban-Rural Continuum Codes (2003).

Table 3. IMG and USMG Specializations

	IMGs N=1696	USMGs N=6770	P value
Primary Care	37.0% (627)	35.4% (2399)	=.239
Surgery	6.5% (111)	11.6% (786)	<.001
Other	56.5% (958)	53.0% (3585)	=.01

IMGs are from India (33%), Pakistan (14%), and the Philippines (9%), with 5% or less coming from 94 other countries. Nine percent of IMGs were born in the United States (representing 32 states). Only 21 (1.3%) of the IMGs from the United States (USIMG) were originally from Kentucky.

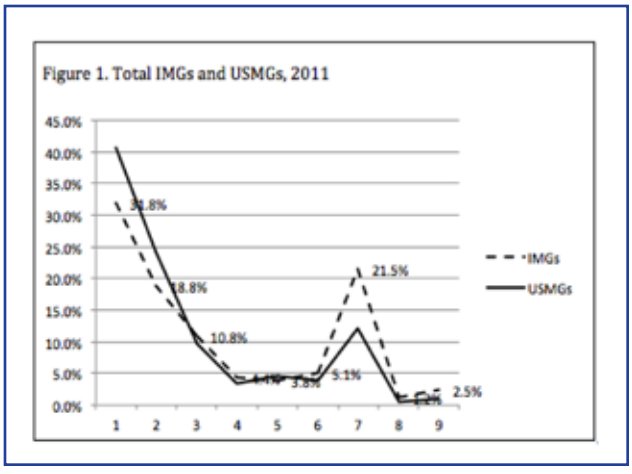
IMGs were more likely to practice in a rural county and a county that has a critical access hospital (Table 2). Relative to medical specialization (Table 3), the percentage of IMGs practicing primary care was similar to USMGs. They were less likely than USMGs to specialize in surgical specialties and more likely to specialize in emergency medicine and hospital-based specialties.

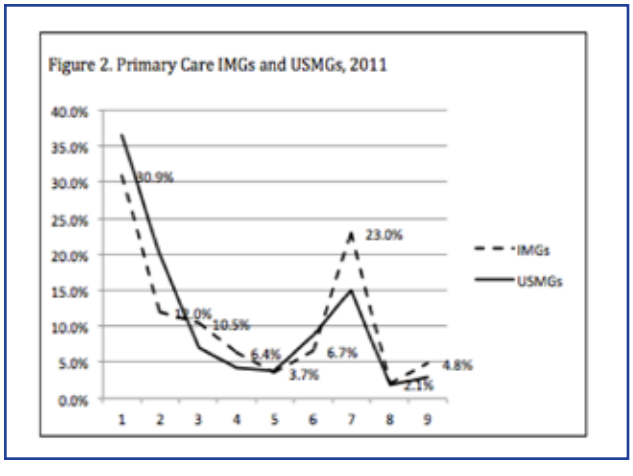
Figure 1 shows the distribution of all Kentucky IMGs and USMGs by RUCC, and Figure 2 shows the distribution of those in each category who are primary care physicians. Both IMGs (61.5%) and USMGs (74.5%) are more likely to practice in RUCC 1-3. This pattern is also true for primary care physicians, as shown in Figure 2, but to a lesser extent (53.4% vs 63.5%, P<.001). The urban area covered by RUCC 1-3 includes 35 counties and 57.8% of Kentucky's 4.3 million citizens. Several of these urban counties have large multi-specialty medical centers that serve patients referred from counties outside this zone.

Although the distribution pattern is similar, the percentage of IMGs involved in medical practice is slightly greater than USMGs in RUCC 3 both in total and in primary care groups (10.8% vs 8.4%, P=.01 and 10.5% vs 7.0%, P=.01, respectively). However, this pattern is not consistent for the more rural counties (RUCC 4-9). A slightly larger percentage of total and primary care IMGs practice in RUCC 7 (P=<.001), and for primary care in RUCC 9 (P=<.01). The twenty-four counties classified as RUCC 7 are defined as being non-metropolitan with a population between 2,500 and 19,999 and not adjacent to a metropolitan area. RUCC 9 counties are isolated rural counties with small populations.

DISCUSSION

The results of this study show that, while the distribution of International Medical Graduates (IMGs) and United States Medical





Graduates (USMGs) is similar in urban and rural areas throughout Kentucky, IMGs are found in higher concentrations than USMGs in some rural areas. As indicated in Table 3, IMGs are more likely to practice in a rural county and a county that has a critical access hospital. Further, the percentage of IMGs practicing in a given RUCC begins to increase beyond that of the USMGs starting with RUCC 3 and becomes most noticeable in RUCC 7. However, as indicated by the results of this study, the role of IMGs in filling the growing coverage gap in Kentucky is not as remarkable as initially thought. In fact, the percentage of IMGs practicing in Kentucky still lags far behind the national average (25%).[10]

As Table 1 reports, IMGs had been licensed for fewer years in Kentucky than USMGs and also showed a longer time since graduation from medical school. IMGs have a considerably longer path to medical practice in the United States, regardless of specialty. To practice in the United States, IMGs must first graduate from an international medical school. This is followed by obtaining certification from the Educational Commission for Foreign Medical Graduates (ECFMG) and by achieving satisfactory results on the United States Medical Licensing Exam (USMLE), English proficiency exam, and clinical skills exam. All of these steps must be completed prior to applying for a residency position.

Moreover, the results of this study found that IMGs were no more likely than USMGs to specialize in primary care (Table 3). This agrees with the decision of newer generations of physicians to steer away from primary care because of the attractiveness of more manageable lifestyles of other specialties.[6] Reasons cited by medical students for the declining interest in internal medicine included unnecessary paperwork, declining reimbursement, and challenges associated with caring for chronically ill patients. Medical students no longer see the appeal of becoming a primary care physician. Nonetheless, IMGs may be pursuing primary care specialties because of the presence of available residency positions as compared to other specialties. In the past, USMGs have only matched into 40% to 45% of the available first-year family medicine residency positions, leaving 55% potentially available for IMGs; this number slightly increased last year as USMGs matched 48% of the available first-year family medicine residency positions.[11]

Despite the fact that IMGs have demonstrated value to the United States health care system by practicing in all specialties and all demographic areas, Kentucky is still faced with the task of "filling the gap" of physicians in underserved areas.[12] If the Patient Protection and Affordable Care Act takes full effect in 2015, the demand for physicians will certainly increase as many uninsured finally gain insurance coverage and access to care.[13] The current and future need is for more of the state's physicians to practice in a primary care specialty in a rural, underserved area.

The seriousness of the challenge for Kentucky achieving this goal is indicated by some findings from the latest Association of American Medical Colleges (AAMC) Workforce Study.[14] In 2010 the State ranked 12th from last among the 50 states in the ratio of active patient care primary care physicians to population (69.8/100,000). Also, at 8.2 residents and fellows per 100,000 population, Kentucky fell into to the lowest ratio category (1.84-8.21) among ACGME-accredited primary care programs compared to a US average of 13.4/100,000. On the encouraging side is the fact that Kentucky ranked 12th (46.4%) in retention of active physicians who graduated from medical school or osteopathic school in-state.

In order to fulfill the demand for physicians, the number of residency positions in the state of Kentucky, especially in primary care, must be increased. This will facilitate the increase in number of physicians, not only the USMGs, but the IMGs as well. In recent years, the increase in both allopathic and osteopathic USMGs has created more competition for residency positions in all specialties; this ultimately has decreased the total number of residency positions available for IMGs. Additionally, the ECFMG has varied the number of certificates issued to IMGs making them eligible for graduate medical education (GME) in the United States and frequently exceeded the number of available

training positions.[15] By increasing the number of training positions available, the role of IMGs in "filling the gap" can be increased as Kentucky faces a physician shortage. Funding for additional residency positions may be difficult because Medicare funding has been capped since the 1997 Balanced Budget Act except for new programs. New programs could be established, and they would be eligible for Medicare funding. Senate Bill 28, the Kentucky statute that funds primary care residencies, could also be expanded for new residency positions.

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