INTERNATIONAL AND US MEDICAL GRADUATES IN US CITIES

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ABSTRACT

Objectives. This study examines the comparative distributions of postresident international medical graduates (IMGs) and US medical graduates (USMGs) in high and low poverty areas of US cities. Existing research has established that IMGs are more likely than USMGs to practice in urban areas, yet there is the question whether IMGs locate more frequently than USMGs in urban poverty areas.

Methods. Data from the 1997 AMA Physician Masterfile and 1990 US Census were merged to classify physicians' practices into low- and high-poverty areas in selected cities.

Results. In 14 cities with populations of 2.5 million or more, IMGs were located in a statistically significant disproportion in poverty areas of 7 cities. Of 36 cities with populations of 1,000,000 to 2,499,999, there were 5 cities that had significant IMG disproportions in poverty areas. Of a random sample of 27 cities with populations of 250,000 to 999,999, there were 2 cities that had significant IMG disproportions. Many cities in all three size categories had a large proportionate IMG complement of the total physician workforce located within high-poverty areas.

Conclusions. IMGs were found in disproportionate numbers in poverty areas in a number of US cities, especially the very largest ones. These findings are discussed in light of the current debate about a physician surplus and initiatives to reduce the number of IMGs in residency training.

KEY WORDS Cities, Foreign Medical Graduates, International Medical Graduates, Physician Distribution, Physician Supply, Poverty, Urban Areas.

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INTRODUCTION

Whether international medical graduates (IMGs) and US medical graduates (USMGs) are distributed in the US such that IMGs are more likely to be found in locales characterized as high in need or medically underserved has been debated for some time.[1,2] Research has focused on the distribution of IMGs in rural versus urban areas and has established that, at the national aggregate level, IMGs are more likely to be found in urban areas.[3–5] Other reports have found that IMGs are more likely than USMGs to be located in places characterized as high in need when data have been disaggregated into smaller geographical groupings (e.g., census divisions or states).[1,6] This tendency is particularly marked in rural areas.[7–9] Yet, it is unclear if the same pattern occurs in urban areas, especially in big cities with evident areas of high poverty.

There is surprisingly little research examining this question. The few studies that exist are from the 1970s, focus solely on hospital residents, or have limited or small samples.[10] The objective of this study was to provide a contemporary, comprehensive, and large sample size description of urban IMG-USMG location, the first such effort known to us. Further, the focus is on high versus low poverty sections of US cities, which range from the very largest down to those with at least 250,000 population.

METHODS

Cities, metropolitan areas, or urban areas (terms we use interchangeably) were defined according to the US Office of Management and Budget criterion as areas comprising a Metropolitan Statistical Area (MSA).* Cities were grouped into three categories by population: 2,500,000 or more, 1,000,000 to 2,499,999, and 250,000 to 999,999. (Results for cities in two smaller size categories are not presented due to space limitations and the very small number of IMGs involved.) Within city boundaries, two data sources were used to classify physicians into high- and low-poverty areas: (1) the 1997 American Medical Association (AMA) Physician Masterfile and (2) the 1990 US Census of Population and Housing Summary Tape File (STF) 3B.[11] The AMA Physician Masterfile contains information on all active allopathic physicians who had completed residency training in 1997. The AMA also had information on approximately 80% of active osteopathic physicians, and because no osteopaths licensed in the US were trained abroad, all osteopaths were considered USMGs.[9] The data set excluded inactive physicians and physicians who were in graduate medical education. In other words, our focus was on physicians who were beyond residency training and who were

*PMSA = Primary Metropolitan Statistical Area.

most probably permanent members of the US physician workforce. In addition, our analysis excluded all Canadian medical graduates. The Liaison Committee for Medical Education accredits Canadian and US medical schools according to identical standards, and, unlike other IMGs, Canadian medical graduates are exempt from the Educational Commission for Foreign Medical Graduates' (ECFMG) certification requisite for residency training in the US.

The STF-3B contains variables from the 1990 US Census reported at the ZIP code level. These variables provided indicators to classify ZIP codes into high- and low- poverty areas. A high-poverty zone of a metropolitan area was a cluster of ZIP codes with 20% or more of its population below the federal poverty level, the threshold of the federal definition of a "poverty area."[12] This measure has been used in studies that show consistent correlations between poverty and health outcomes.[13–16] We tested the reliability of this poverty measure in three pretest cities: Chicago, Illinois; Detroit, Michigan; and New York City, New York. The location of the these high-poverty ZIP codes mapped well with areas known as the "inner-city" neighborhoods, such as Harlem, Spanish Harlem, the Bowery, sections of the Bronx, and sections of Brooklyn in New York City.

ZIP codes in cities with populations of 250,000 or more were divided into two groups according to the 20% or more poverty criterion. Physicians located in high- or low-poverty areas were identified by the ZIP code of their reported addresses in the AMA Physician Masterfile. They were divided further into those who were IMGs and USMGs. For each city, the classification of physicians by graduate training and location created a two-by-two matrix, and cell counts for each of the four cells formed the basis of our two analytical approaches.

First, in each city, we calculated the proportions of IMGs and USMGs located inside high-poverty areas. That is, we divided the number of IMGs (or USMGs) in high-poverty ZIP codes by the total number of IMGs (or USMGs) in the entire city. The IMG proportion then was subtracted from the USMG proportion to yield a difference of percentages. A negative value indicated an IMG disproportion, and a positive value suggested USMG disproportion. This procedure allowed us to test whether IMGs distributed themselves in a pattern similar to that of USMGs when comparing high- and low-poverty areas in a city.

Second, a given city's IMG composition of the physician workforce in high-poverty areas (i.e., the ratio of IMGs in high-poverty areas to the total number of physicians in high-poverty areas) was compared to the aggregate national proportion of IMGs in high-poverty areas of cities of similar size. This technique showed how a city's physician composition in high-poverty areas differed from the relevant national benchmark. Whereas the first analytic approach examined the propensity of IMGs relative to USMGs to locate in high-poverty areas of US cities, the second analytic approach assessed whether the IMG component of physician workforce in high-poverty areas varied across cities. We report relevant tests of significance for both statistical techniques.[17]

RESULTS

Cities with Populations of 2,500,000 or More

Figure 1 shows that, of the 14 of the largest US cities, there were 7 that had statistically significant IMG disproportions in high-poverty areas, whereas two had statistically significant USMG disproportions. Minneapolis–St. Paul, Minnesota, had the largest IMG disproportion (–9.0%) and Riverside–San Bernardino, California, had the smallest significant IMG disproportion (–1.4%), with most of the IMG disproportion cities falling around the –2.0% range. On the other hand, Dallas, Texas, and St. Louis, Missouri, had significant USMG disproportions of 4.5% and 2.6%, respectively. Of the largest cities in this large-size category, New York City and Los Angeles–Long Beach, California, had significant IMG disproportions; Chicago had an IMG disproportion, but it was not significant statistically. Overall, most of the proportion differences, regardless of direction, were small.

A different picture emerged when each city's IMG proportion in high-poverty

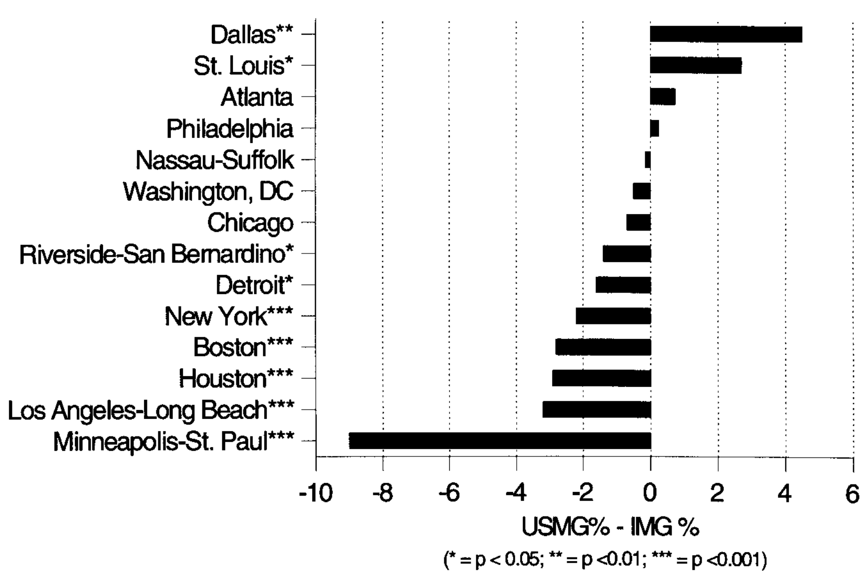

FIGURE 1 Difference in proportions of active postresident USMGs and IMGs in MSAs/PMSAs with 2,500,000 population, ZIP codes reflecting poverty at 20% or above, 1997. *Source*: 1997 AMA Physician Masterfile and 1990 US Census.

areas was compared to the national benchmark. For these largest American cities, the proportion of IMGs in high-poverty areas combined was 29.6%. As Table I shows, New York City; Nassau-Suffolk, New York; Riverside–San Bernardino; Chicago; Detroit; Los Angeles–Long Beach; and Houston, Texas had significantly larger IMG proportions. Note, however, that in Nassau-Suffolk and Riverside–San Bernardino, the number of both IMGs and USMGs in high-poverty ZIP codes was very small. Cities at the opposite end of the spectrum—those with significantly smaller IMG proportions than the average—included Boston, Massachusetts; St. Louis; Philadelphia, Pennsylvania; Atlanta, Georgia; Minneapolis–St. Paul; and Dallas. In these cities, the number of USMGs was generally much larger than the number of IMGs.

For America's largest metropolitan areas, data showed that the disproportionate location of IMGs versus USMGs in high-poverty neighborhoods was not salient, with the exception of one city, Minneapolis–St. Paul. However, this city had many more USMGs than IMGs (1,340 versus 196) in its high-poverty ZIP

TABLE I Number and Proportion of Postresident International Medical Graduates (IMGs) and US Medical Graduates (USMGs) in MSAs/PMSA ZIP Codes ≥20% Poverty for US Cities ≥2,500,000 Population Ordered by Declining Percentage of IMGs, 1997

	No. IMGs	No. USMGs	IMG %
New York*	1,761	1,872	48.5
Nassau-Suffolk*	29	31	48.3
Riverside–San Bernardino†	46	66	41.1
Chicago*	1,083	1,857	36.8
Detroit*	513	935	35.4
Los Angeles–Long Beach*	830	1,541	35.0
Houston†	282	527	34.9
Washington, DC	55	129	29.9
Total and average %	6,443	15,317	29.6
Boston*	559	1,940	22.4
St. Louis*	266	956	21.8
Philadelphia*	610	2,647	18.7
Atlanta*	48	308	13.5
Minneapolis–St. Paul*	196	1,340	12.8
Dallas*	165	1,168	12.4

Source: 1997 AMA Physician Masterfile and 1990 US Census.
*$P < .001$.
†$P < .01$.
‡$P < .05$.

code areas. A striking IMG presence was registered for about one-half dozen major metropolitan areas, especially New York City. Yet, in these cities, the distribution of IMGs in and outside poverty areas tended to be comparable to that of USMGs.

Cities with 1,000,000 to 2,499,999 Population

There were 37 cities in the next largest category of 1,000,000 to 2,499,999 population; Middlesex-Somerset, Massachusetts, was dropped from analysis because it had no high-poverty ZIP codes. The results of proportionate differences are shown in Fig. 2. A large and significant IMG disproportion was found for San

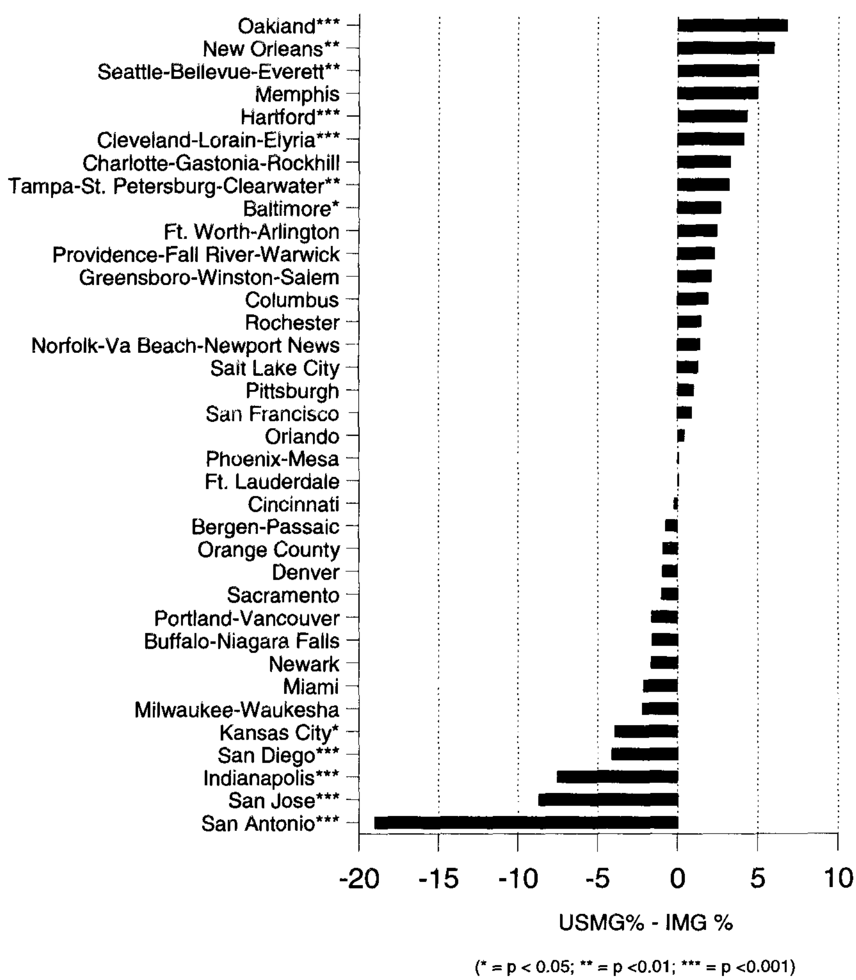

FIGURE 2 Difference in proportions of active postresident USMGs and IMGs in MSAs/PMSAs with 1,000,000–2,499,999 population, ZIP codes reflecting poverty at 20% or above, 1997. *Source*: 1997 AMA Physician Masterfile and 1990 US Census.

Antonio, Texas (–19.1%), and a smaller range of significant IMG disproportions (–9.0% to 3.8%) was found for San Jose, California; Indianapolis, Indiana; San Diego, California; and Kansas City, Missouri. On the other hand, significant, but small, USMG disproportions were found for Oakland, California (6.4%); New Orleans, Louisiana; Seattle-Bellevue-Everett, Washington; Hartford, Connecticut; Cleveland-Lorain-Elyria, Ohio; Tampa–St. Petersburg–Clearwater, Florida; and Baltimore, Maryland (2.5%), in descending order. The majority of cities in this size category had no statistically significant IMG and USMG differences. Except for San Antonio, the proportional differences of IMGs or USMGs in high-poverty areas were all small.

Cities between 1,000,000 and 2,499,999 inhabitants varied widely in the relative presence of IMGs in high-poverty ZIP codes. Table II shows that average IMG proportion for this city grouping was 21.6%, and that a number of cities had proportions well beyond this value. Bergen-Passaic, New Jersey, led the list with about 65% IMGs in high-poverty ZIP codes, but the overall number of both IMGs and USMGs located there was small. A salient presence of IMGs in high-poverty areas occurred in Miami, Florida; Newark, New Jersey; San Jose, California; Buffalo–Niagara Falls, New York; Cleveland-Lorain-Elyria; San Antonio; and Baltimore, with IMG proportions ranging from a high of 55.7% to a low of 25.5%.

At the opposite end were 17 cities with a proportion of IMGs in their high-poverty areas significantly smaller than the average of this size category. The extremes (~5% or less) were Oakland; Seattle-Bellevue-Everett; Denver, Colorado; Charlotte-Gastonia-Rockhill, North Carolina; and Salt Lake City, Utah—all of which, save one, were Pacific or Mountain census division cities.

With a few notable exceptions, cities in this size category showed neither strong IMG nor strong USMG disproportions when all physicians inside and outside high-poverty areas were compared. Three cities—San Antonio, San Jose, and Indianapolis—exhibited substantial IMG disproportions. In addition, these three cities had above average proportions of IMGs located in high-poverty ZIP code areas. If our two analytic approaches can be construed to indicate IMG "dependency," then a handful of cities clearly were qualified. Also, several other cities in this size category had above average IMG proportions in their high-poverty ZIP code zones. Numerically, these cities were offset by the larger number of cities that had below average IMG proportions. What emerged from this analysis was a concentration of IMGs in poor areas in a small, but nontrivial, number of cities, whereas many other cities had neither IMG disproportions nor large IMG complements within their high-poverty areas.

TABLE II Number and Proportion of Postresident International Medical Graduates (IMGs) and US Medical Graduates (USMGs) in MSAs/PMSA ZIP Codes ≥20% Poverty for US Cities 1,000,000 to 2,499,999 Population Ordered by Declining Percentage of IMGs, 1997

	No. IMGs	No. USMGs	IMG %
Bergen-Passaic*	12	7	63.2
Miami*	573	456	55.7
Newark*	124	145	46.1
San Jose*	89	119	42.8
Buffalo–Niagara Falls*	288	436	39.8
Orange County†	31	55	36.0
Ft. Lauderdale	6	12	33.3
Cleveland-Lorain-Elyria*	405	1,021	28.4
San Antonio*	189	478	28.3
Orlando	36	93	27.9
Baltimore*	398	1,131	26.0
San Diego	64	183	25.9
Pittsburgh*	434	1,270	25.5
Tampa–St. Petersburg–Clearwater	145	437	24.9
Rochester	50	174	22.3
Milwaukee-Waukesha	56	196	22.2
Total and average %	4,041	14,696	21.6
Providence–Fall River–Warwick	39	163	19.3
Norfolk–Virginia Beach–Newport News	54	262	17.1
Cincinnati†	120	586	17.0
Phoenix-Mesa†	103	526	16.4
Sacramento†	33	196	14.4
Hartford†	37	224	14.2
New Orleans*	207	1,257	14.1
Kansas City*	90	554	14.0
Indianapolis*	85	579	12.8
Memphis*	58	460	11.2
Columbus*	61	488	11.1
Ft. Worth–Arlington*	63	544	10.4
Portland-Vancouver*	24	247	8.9
San Francisco*	101	106	8.6
Oakland*	42	531	7.3
Seattle-Bellevue-Everett*	65	889	6.8
Denver*	21	300	6.5
Charlotte-Gastonia-Rockhill*	14	251	5.3
Salt Lake City*	15	289	4.9
Greensboro-Winston-Salem†	0	31	0.0

Source: 1997 AMA Physician Masterfile and 1990 US Census.
*$P < .001$.
†$P < .01$.

Cities with 250,000 to 999,999 Population

Figure 3 shows results for those cities with 250,000 to 999,999 population. Given the large number of cities falling into this size category, we randomly sampled 3 cities from each of the nine census divisions, yielding a total of 27 cities for the analysis. Salem, Oregon, was dropped because it did not have high-poverty ZIP codes. The findings here paralleled those presented above: Most cities showed no significant disproportion in either direction, and most of them were in the ±5% range. Only two cities—Ft. Pierce–Port St. Lucie, Florida, and Flint, Michigan—had significant IMG disproportions, –9.5% and –8.4%, respectively. By contrast, four cities—Baton Rouge, Louisiana; Birmingham, Alabama; Johnston,

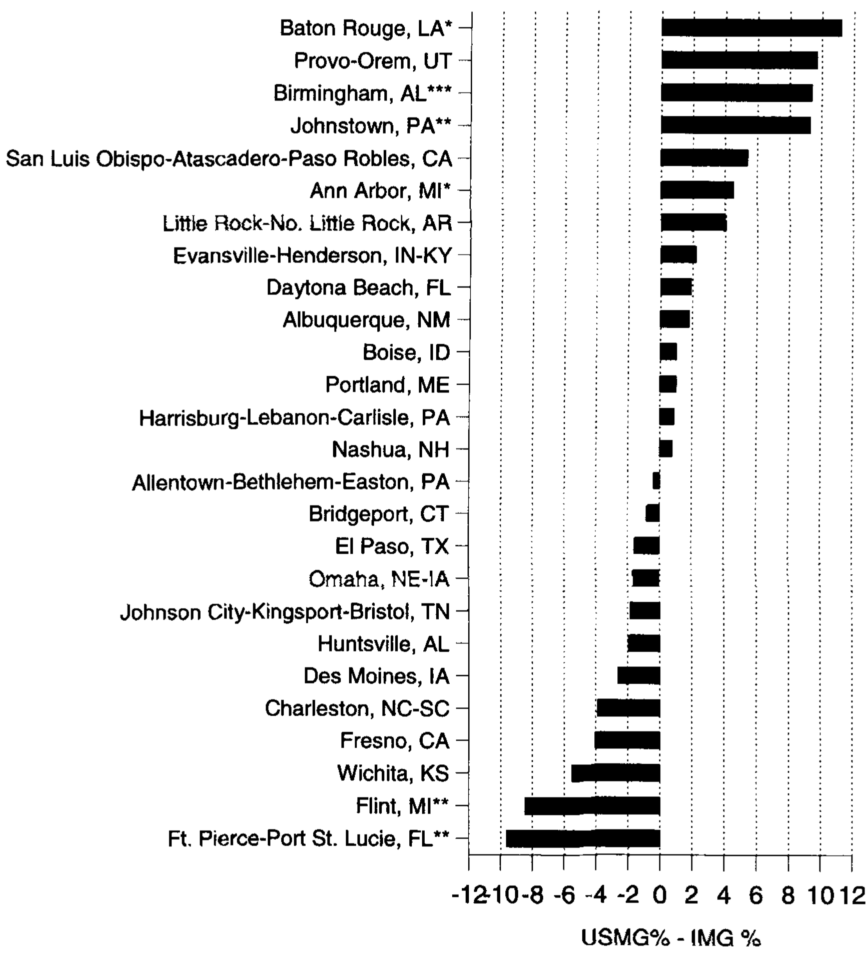

FIGURE 3 Difference in proportions of active postresident USMGs and IMGs in MSAs/PMSAs with 250,000–999,999 population, ZIP codes reflecting poverty at 20% or above, 1997. *Source*: 1997 AMA Physician Masterfile and 1990 US Census.

Pennsylvania; and Ann Arbor, Michigan—had significant USMG disproportions, the first three ranging between 9.2% and 11.4%, and Ann Arbor had 4.5%.

The average IMG proportion in high-poverty areas for cities in this size category was 16.7%. As Table III shows, a number of cities had relatively large proportions of IMGs in high-poverty ZIP code areas. Flint, Michigan; Ft. Pierce–

TABLE III Number and Proportion of Postresident International Medical Graduates (IMGs) and US Medical Graduates (USMGs) in MSAs/PMSA ZIP Codes ≥20% Poverty for Sampled US Cities 250,000 to 999,999 Population Ordered by Declining Percentage of IMGs, 1997

	No. IMGs	No. USMGs	IMG %
Allentown-Bethlehem-Easton	1	1	50.0
Flint*	101	108	48.3
Ft. Pierre–Port St. Lucie*	34	42	44.7
El Paso*	178	352	33.6
Bridgeport†	11	24	31.4
Fresno*	75	178	29.6
Daytona Beach†	25	78	24.3
Johnstown, PA	12	45	21.1
Johnson City–Kingsport–Bristol	5	20	20.0
Wichita	47	197	19.3
Total and average %	755	3,760	16.7
Huntsville	2	10	16.7
Nashua	2	10	16.7
Evansville-Henderson	14	75	15.7
Ann Arbor†	38	261	12.7
Des Moines†	38	265	12.5
Omaha‡	21	188	10.0
Albuquerque*	64	618	9.4
Harrisburg-Lebanon-Carlisle	2	23	8.0
San Luis Obisbo	4	47	7.8
Birmingham*	31	413	7.0
Charleston*	13	180	6.7
Portland†	4	62	6.1
Baton Rouge*	15	241	5.9
Provo-Orem*	8	135	5.6
Little Rock*	10	181	5.2
Boise	0	6	0.0

Source: 1997 AMA Physician Masterfile and 1990 US Census.
*$P < .001$.
†$P < .01$.
‡$P < .05$.

Port St. Lucie; El Paso, Texas; Bridgeport, Connecticut; Fresno, California; and Daytona Beach, Florida, all had significantly above average proportions of IMGs, ranging from a high of 48.3% for Flint to 24.3% for Daytona Beach. Allentown-Bethlehem-Easton, Pennsylvania, had a very high IMG proportion, but the numbers were too small to suggest a meaningful difference. On the other hand, 10 cities had significantly lower than average proportions of IMGs in high-poverty ZIP codes. Ann Arbor; Albuquerque, New Mexico; Portland, Maine; and Little Rock, Arkansas, were some of the examples, with the IMG proportion as low as 5%.

For this group of cities, cities that had IMG disproportions in high-poverty ZIP code areas also tended to have an above average proportion of IMGs as part of the physician workforce within high-poverty areas and vice versa. Both the disproportionate presence of IMGs or USMGs in high-poverty sections of the city were larger in the extreme cases than in the other two larger city size groupings, in part due to the smaller numbers of IMGs and USMGs involved.

SUMMARY

In the 14 US cities with a population of 2,500,000 or more, IMGs were located significantly and disproportionately in high-poverty areas in 7 cities, whereas USMGs were significantly disproportionate in 2 cities. In the 36 US cities with 1,000,000 to 2,499,999 population, IMGs were located significantly and disproportionately in high-poverty areas in 5 cities, whereas USMGs were significantly disproportionate in 7 cities. Finally, in a random sample of 27 cities with 250,000 to 999,999 population, IMGs were located significantly and disproportionately in poverty areas in 2 cities, and USMGs were disproportionately located in 4 cities. In the city size category of 2,500,000 or more, of the total physician workforce located in poverty areas, 7 cities had IMG complements significantly exceeding the average of 29.6% IMGs. On the other hand, 6 cities had significantly lower proportions of IMG complements. In the city size category of 1,000,000 to 2,499,999, 10 cities significantly exceeded the average of 21.6% IMG in high-poverty areas, but 18 had significantly smaller complements. Finally, in the 250,000–999,999 city size grouping, 6 cities significantly exceeded the 16.7% IMG average, but 10 had significantly smaller IMG complements.

CONCLUSION

If statistical significance is taken as the criterion, for a majority of cities, IMGs were distributed more or less like USMGs across poverty and nonpoverty areas.

However, there was evidence that IMGs were found disproportionately in high poverty areas in a number of America's larger cities, and the lack of IMG-USMG differences should not be overstated. As the number of IMGs increased within a city's overall boundaries, the greater was the presence of IMGs in high-poverty areas. Thus, even in cases where IMGs were located disproportionately in low-poverty ZIP codes, they also constituted a large complement of the physician workforce in high-poverty areas. This was particularly true for the very largest US urban areas, such as New York, Chicago, and Los Angeles, but it also held for many other cities in smaller size classifications. In general, the data showed that the IMG presence in cities increased as city size increased, and that the large number of IMGs in high-poverty ZIP codes corresponded more with a large number of IMGs in the entire city rather than with a concentration of these IMGs mostly in the poor areas.

We also found a diminishing proportion of IMGs in high-poverty ZIP codes as the city size decreased, suggesting that IMGs were less likely to be located in smaller cities. What this indicated was unclear. A possible explanation is that most residency training programs were located in larger cities, and as immigrants, IMGs were more likely to stay in larger cities after training. These issues remain in need of further research.

Methodological Issues

Several methodological issues bear on the study's findings. First, we used the "preferred professional address" reported by physicians to the AMA. The AMA estimated that the office address of the physician is given about 70% of the time (L. Randolph, personal communication, AMA, October 17, 1997). For the 30% of physicians living outside ZIP codes in poverty areas, we assumed that both IMGs and USMGs had identical propensities to work in poverty areas.

A second point is the assumption that physicians located in high-poverty ZIP code areas provided services to poor patient populations. Individual physician behavior, however, does not necessarily follow from ecologically determined associations. Put differently, our findings regarding the comparative distribution of IMGs and USMGs can make sense only under the assumption that IMGs and USMGs in ZIP codes with poverty levels of 20% or more did not differ in seeing poor patients.

Notwithstanding these methodological issues, the findings of this study were based on a very large study population (including the majority of osteopaths); we examined 76 different US cities, used a clear-cut poverty measure closely related to the level of health need, and avoided generalization from highly aggregated national data. Its findings provide a clear reference point against which to assess further research using different approaches.

INTERNATIONAL MEDICAL GRADUATE POLICY DEBATE

The findings of this study are important in view of the argument that, because IMGs concentrate in the nation's most populous areas, they exacerbate the physician "surplus."[3] This view has led some to conclude that the tendency of IMGs to locate in populous areas "challenges the wisdom of policies that promote their admission into US practice in the hope that they will mitigate problems of geographic access to medical care."[5(pp127–128)] Although the present findings do not necessarily support such a policy, they do suggest caution in making such a conclusion since the analyses of both the cited studies rested on undifferentiated aggregate national data. By contrast, when cities are examined one by one, many of them—especially the nation's largest—displayed a substantial complement of IMGs in the physician workforce located in poverty areas.

A key conclusion of the present study is that both perspectives about IMGs (presence in poverty, or needy, urban areas versus additions to the physician abundance) are true. If many IMGs were inside a given city's poverty area, many were not, just as was the case for USMGs. The issue of IMG geographic location, therefore, is more subtle than much of the health policy debate has admitted, and neither a wholesale "safety net" perspective nor an unequivocal "surplus exacerbation" view is correct. This reality complicates the policy question of who will replace the IMGs as their numbers are thinned progressively through graduate medical education (GME) reduction policies strongly urged by the Institute of Medicine, the Pew Health Professions Commission, the Council on Graduate Medical Education (COGME), and others.[18–21] In response to a demonstration project approved by the Health Care Financing Administration of reducing residency slots via Medicare financial incentives, teaching hospitals in New York State reduced first-year residencies by 24% and all residencies by 5%, well on schedule for reducing all residencies by 20% to 25% in 5 years.[22] In 1997, New York State trained approximately 15% of all residents in the entire country.[23] In any given recent year, a substantial portion of New York's residents were IMGs (e.g., 46% in 1994).[24] As the number of IMGs finishing their residencies is reduced, so will the number available for postresidency practice, and thus, the question of IMG replacements or substitutes looms large.

Another innovation might reduce further the number of IMGs entering residencies. This is the implementation of the Clinical Skills Assessment (CSA), an examination that, as of July 1, 1998, is an additional element of the overall testing requirement for IMGs seeking certification by the ECFMG, a necessary requirement for appointment to a US-based residency training program.[25] The other examinations are Steps 1 and 2 of the United States Medical Licensing Examination (USMLE), which are also required of USMGs, and an English language test.

There are at least two reasons why the CSA will probably pose a barrier to IMG certification. First, the examination, moving away from a paper-and-pencil test of knowledge of basic and clinical sciences, may well be more difficult for many IMGs, who, in the past, would be required just to pass the USMLE. In a pretest study, 635 IMGs, who had already been certified by the ECFMG, and a comparison sample of 123 USMGs were given the CSA. The clinical skills of 28% of the IMGs who took the exam were found to be inadequate.[26] Second, the CSA will be given only in Philadelphia, the headquarters of the ECFMG, and not in numerous centers around the world, as has historically been the case since the ECFMG began standardized testing of IMGs in 1958. Thus, IMGs wishing to take the CSA must travel to and from Philadelphia and must obtain a visa if they are abroad. In short, the CSA has the potential to be a major constriction in the IMG "pipeline" leading to US residency training.

The concern about IMG "replacements" was evident in COGME's recent recommendations, which called for reduction of GME positions that offer the initial opportunity for IMGs to come to the US and train here.[20] Federal reimbursement for both direct and indirect costs of GME would be reduced at the same time that the number of IMG residents would diminish. Understanding the implications of these reductions, COGME also suggested that a portion of the GME savings could go to support Community Health Centers (CHCs) and National Health Service Corps (NHSC), among others. (The NHSC has been seen as a particularly potent vehicle through which IMG replacements can be effected.[27,28]) Further, COGME called for more support for Public Health Service Act Title VII educational programs to strengthen those programs that are successful in producing physicians who are placed in underserved communities. Whether there will be an infusion of funds to underwrite these "replacement" proposals is still uncertain. By contrast, as the New York State demonstration experiment has shown and the implementation of the CSA may show, it may be easier to reduce the number of residents, including IMGs, than to deploy USMGs (or mid-level practitioners) into urban poverty areas. The challenge will be to devise inventive ways, with adequate funding, to ensure that shortages in physician supply in the poor sections of the nation's cities do not occur.

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