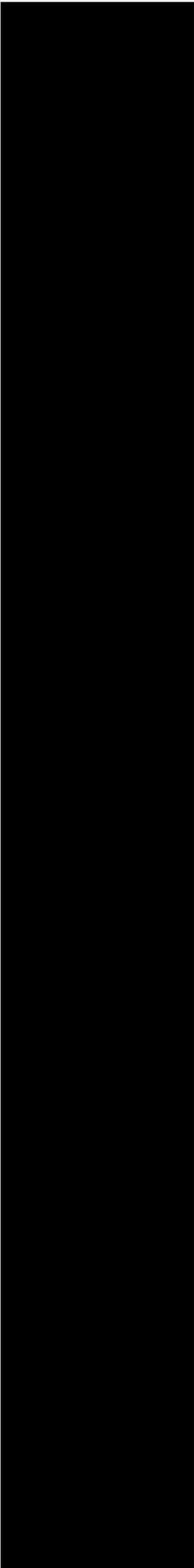


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IF FEWER INTERNATIONAL MEDICAL GRADUATES WERE ALLOWED IN THE US, WHO MIGHT REPLACE THEM IN RURAL AREAS?

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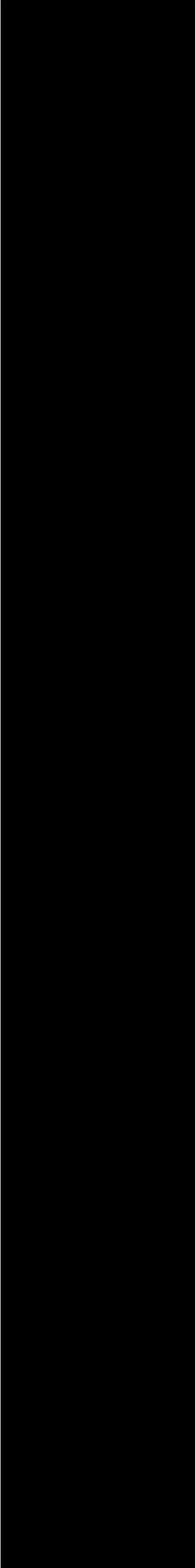
WORKING PAPER SERIES

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**IF FEWER INTERNATIONAL MEDICAL
GRADUATES WERE ALLOWED IN THE
US, WHO MIGHT REPLACE THEM IN
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EXECUTIVE SUMMARY

Recent recommendations by the Council on Graduate Medical Education and six medical associations have called for a reduction in the supply of new international medical graduates (IMGs) to help lower national physician oversupply. IMGs constitute an important component of the US medical workforce, and their numbers have increased rapidly over the past decade. Visa waiver requests to practice in underserved areas (J-1) have increased from 70 in 1990 to 1,374 in 1995. Because many IMGs practice in underserved rural communities, concerns have arisen about what might happen if fewer IMGs are available to work in such settings. This study identifies rural communities that would be most affected should restrictions on IMG entry into the United States be tightened, and reports on the perceptions of physician recruiters and health planners about who might replace IMGs currently working in such areas.

Data from the 1991 and 1996 American Medical Association Physician Masterfile show that almost 70% of the counties with new IMGs in 1996 had at least one IMG in 1991. Many physician shortage areas have strong concentrations of IMGs, especially in Appalachia and the Deep South. Just over 30 percent of all rural counties have physician shortages as defined by the Office of Shortage Designation. If all IMGs currently in primary care practice were removed from this calculation, one out of every five “adequately served” nonmetropolitan counties would become underserved and the percentage of rural counties with physician shortages would rise to 44.4%. In addition, the number of rural counties with no primary care physicians would rise from 161 to 212.

The question of who might replace IMGs in the rural workforce was addressed through 15 semi-structured interviews with state policy makers, health planners, and physician recruiters in four states with high concentrations of IMGs in rural areas (Florida, New York, North Dakota, and West Virginia). The interviews revealed different strategies both within and among states—which strategies to use or emphasize was a frequent concern of informants. Participants overwhelmingly stated that programs to reduce underservice were already in place and would continue in the future. However, some of these strategies were not seen as feasible solutions to replacing IMGs in underserved areas, since they have not been able to erase current shortages.

The National Health Service Corps (NHSC) is often mentioned as a source of health professionals to replace IMGs, but a significant expansion of the NHSC would be necessary to meet the needs of more underserved areas. As of September 1999, 1,356 physicians were in the NHSC and practicing in underserved areas, compared with over 2,000 IMGs with waivers to practice in underserved areas. Study participants had mixed opinions about using an expanded NHSC to replace IMGs. While some participants spoke highly of an expanded NHSC as a valuable approach to offset losses in new IMG supply, others were more hesitant, worrying about flexibility in placement decisions, problems with underservice designations, continuity of care, and bureaucracy.

Given the difficulty of expanding ongoing recruitment and retention efforts, many underserved rural areas would likely remain underserved in the event of a cutback in IMGs, and many rural areas that are currently adequately served could face serious problems as well. This study illustrates the difficulty in finding a single national solution to replace IMGs, since states have variations both in recruitment and retention strategies and in dependence on IMGs. Recruiters and

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planners within states and local areas will need to expand creative and innovative approaches aimed at the recruitment and retention of health professionals in needy areas that are already in use. It is quite possible that, should there be an IMG cutback, many rural communities might have to make do with less.

Although widely accepted as a national policy option, replacing IMGs in the event of a cutback is a major, multifaceted task. It is not clear that federally-directed initiatives can effectively meet the needs of many rural, underserved areas that currently depend on IMGs. Many state and local players, including public agencies, private organizations and medical schools, will need to initiate and coordinate their own solutions, despite already facing problems in the recruitment and retention of physicians. There is still time to gain community input before an IMG cutback would have a pronounced impact, as many IMGs on J-1 waivers would still be under obligation to practice in underserved areas in the first few years of a cutback. Observers calling for an IMG cutback should convene meetings with medical and community leaders in rural and underserved areas that have strong concentrations of IMGs. The stakes for many rural and needy areas are too high to propose solutions from a distance without such collaboration. Even with collaboration, it seems unlikely that longstanding problems in underservice can be fixed easily.

INTRODUCTION

In a recent news story on the television program *60 Minutes* (CBS News, 1999), correspondent Lesley Stahl reported, "If the question used to be 'Is there a doctor in the house,' today it's more likely to be, 'Where are you from, doctor, and how did you end up in the United States?' Not a bad question considering that doctors from abroad now account for 25% of all our MDs." As the national media turns its attention to doctors from abroad, a number of observers appear to have reached a consensus that the United States should have fewer international medical graduates (IMGs) (American Association of Colleges of Osteopathic Medicine et al., 1997; Mullan, 1997; Council on Graduate Medical Education, 1998; CBS News, 1999). However, recent studies indicate that IMGs reduce physician shortages by practicing in rural and inner city areas where US medical graduates (USMGs) are less likely to practice (Baer et al., 1998; Mick and Lee, 1997a, 1999). Although many IMGs tend toward urban-based practices (Politzer et al., 1998), IMGs who do practice in rural areas are more likely to practice in underserved than non-underserved counties (Baer et al., 1998). Moreover, many community health centers have become dependent on IMG staffing so that they can remain open to provide care for the poor and underserved (Baer et al., 1999).

This study explores which communities will be most affected and describes the perceptions of physician recruiters and health planners about who might replace IMGs in the rural workforce should a cutback occur. While this study focuses on replacing IMGs within rural areas of the US, the issue of an IMG cutback reflects international, national, state, and local variations in physician supply. Maldistribution is a problem in other countries, as less developed countries are losing their most highly educated citizens to practice medicine in the US. Within local areas in the US and elsewhere, there is often an inequitable distribution of physicians. For example, IMGs help alleviate physician shortages in local areas within a number of more developed countries besides the United States, such as the United Kingdom and New Zealand (Baer et al., 1998, 1999; Mick

A number of observers appear to have reached a consensus that the United States should have fewer international medical graduates. However, recent studies indicate that IMGs reduce physician shortages by practicing in rural and inner city areas where US medical graduates are less likely to practice.

and Lee, 1997b; Barnett, 1991, 1992; Taylor and Esmail, 1999). Moreover, the blurring of borders in the European Union further raises the potential for physician migration and uneven distributions within a region. Many IMGs who enter the US on temporary visas stay in the country indefinitely (US General Accounting Office, 1996; Verghese, 1997), but there is a void in the literature on the length of time that IMGs stay in specific localities.

Reducing the Supply of New International Medical Graduates

Recent recommendations by the Council on Graduate Medical Education (1997, 1998) and six national stakeholder groups in the US (American Association of Colleges of Osteopathic Medicine et al., 1997) called for a reduction in the supply of new IMGs to help lower national physician oversupply. Mullan et al. (1995) also voiced a concern that IMGs may be taking away jobs that otherwise might go to US citizens, including underrepresented minorities whose enrollment in US medical schools has leveled off or declined (see CBS News, 1999). A difficult balancing act in health workforce policy is the need to eliminate *local* physician shortages without adding to concerns about a *national* physician oversupply (Mick et al., 2000). A national physician oversupply could theoretically lead to unnecessary diagnoses, procedures, referrals, and prescriptions that add to government expenditures on health care (Zweifel and Breyer, 1997). Although governments and others have developed various definitions for shortage areas, there is no precise threshold or benchmark that indicates how many total physicians constitute a surplus (Reinhardt, 1991).

The proposed IMG cutbacks could be achieved by impeding the influx of IMGs at two early points in the immigration pathway: the number of residency slots available to IMGs and the number of J-1 visa waivers that are issued. Several policy proposals call for limiting the total number of residency slots to match more closely the number of physicians graduating from US medical schools (Council on Graduate Medical Education, 1998; American Association of Colleges of Osteopathic Medicine et al., 1997). However, there may be a softening of the language used by some advocates of an IMG cutback; for example, a report by the Council on Graduate Medical Education (1999) indicated that the marketplace can be effective in reducing the number of IMGs entering US residency programs. Medicare pays for much of GME, which adds to policy concerns about how many IMGs should be trained. The number of IMGs in GME more than doubled between 1988 and 1995, while the number of USMGs remained relatively stable during the same time period (Mullan, 1997; Council on Graduate Medical Education, 1998). Since 1995, the number of IMGs in US residency programs has leveled off, and even declined slightly between 1997 and 1998. As of 1998, IMGs constituted around one-fourth of all physicians in US residency programs (Miller et al., 1999).

Upon completion of residency, IMGs with J-1 visas must return to their home country for at least two years, and the Council on Graduate Medical Education (2000) has recommended that this be expanded to five years. (See Table 1 for a description of J-1 visas, and two other, less common, visas used by IMGs.) However, J-1 visa waivers allow these individuals to avoid the return-home requirement by practicing in underserved areas that have difficulty attracting physicians. Waivers can also be granted for family hardship or threat of persecution (US General Accounting Office, 1996). The number of annual J-1 visa waiver requests to practice in underserved areas has increased substantially, from

70 in 1990 to 1,374 in 1995 (US General Accounting Office, 1996), although whether this increase has been sustained since 1995 is unknown. Currently, efforts are underway to count the total number of waivers across the various requesting agencies (Charles Daly, Office of Shortage Designation, personal communication, March 23, 2000). Waivers can be requested by one of at least three federal agencies – the US Department of Agriculture, Appalachian Regional Commission, and Department of Transportation (US General Accounting Office, 1996) – or at the state level.

Table 1: Types of Visas Available to International Medical Graduates

Type of Visa	Purpose of Visa	Eligibility for Visa	Number of Years IMG can stay in U.S. under the Visa
J-1	Temporary work visa granted for foreign workers seeking work in an entry-level position with a U.S. company.	Any foreign worker with at least 1 year of experience or a degree in the field.	Maximum of 18 months with no renewal. J-1 Visa holders are required to exit the U.S. after their J-1 visa expires for at least 2 years; under certain circumstances, this requirement is waived.
H-1B*	Temporary work visa granted for foreign workers seeking employment in a specialty occupation with a U.S. company. H-1B Visa is employer sponsored. H-1B Visa is employer and job-specific.	Foreign workers with at least a university degree or a combination of education and experience equal to a degree**, in a field related to the offered job. If license is required to practice in the occupation, evidence of full state licensure must also be presented.	Status is initially granted for 3 years and can be extended up to a total of 6 years. H-1B Visa holders awaiting green cards may obtain an extension beyond the sixth year. H-1B Visa holders may change their job (or switch to a new employer) upon filing of a new H-1B petition.
I-140 (rare)	An employer-sponsored work visa granted for foreign workers seeking work with a US company.	A foreign worker of extraordinary ability.	

* New provisions for H-1B Visa laws enacted under the American Competitiveness in the Twenty-First Century Act 2000.

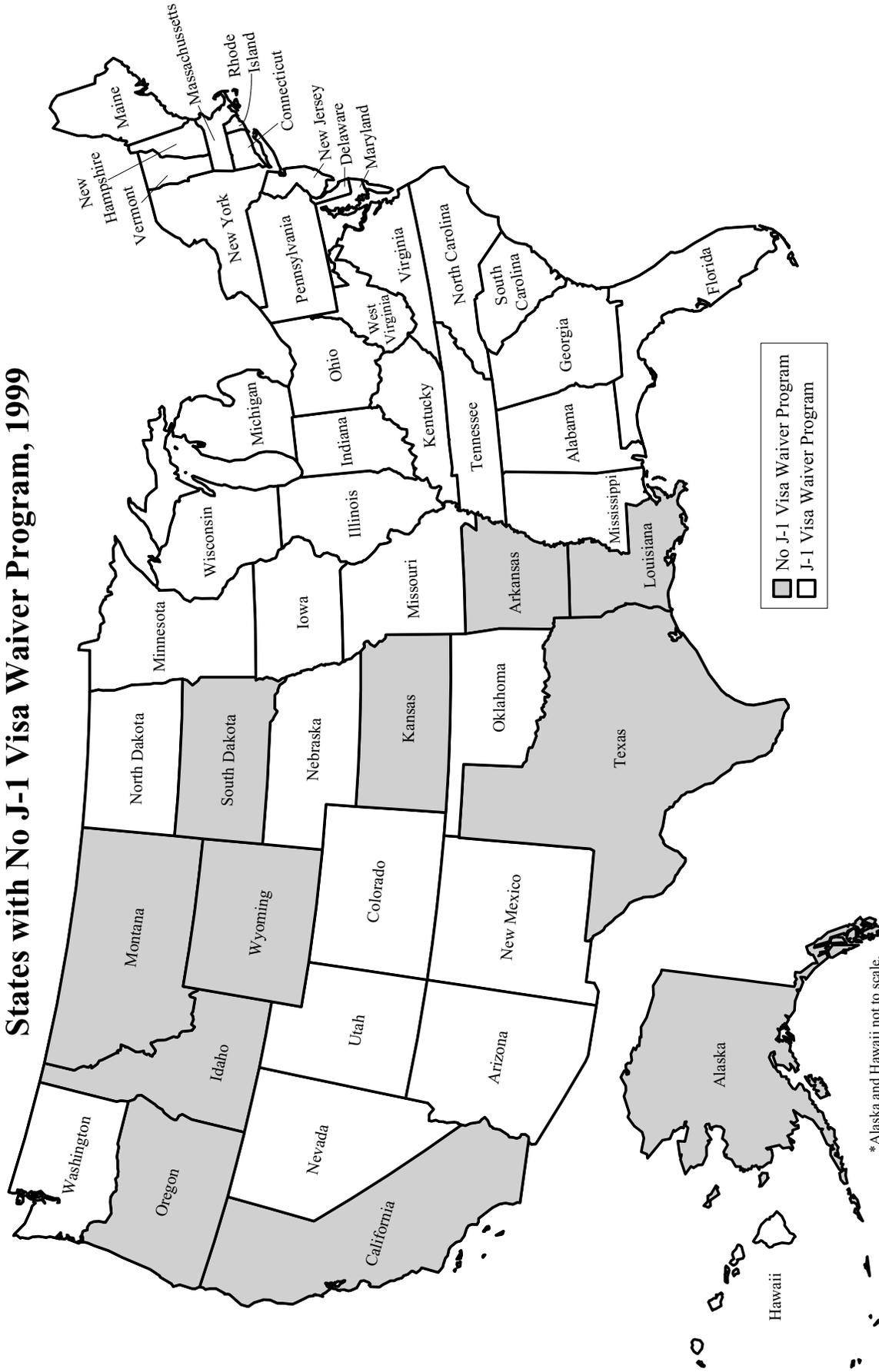
** Three years of experience in progressively responsible positions related to the specialty occupation are equivalent to one year of university studies.

Sources: Immigration and Naturalization Services Website: <http://www.ins.usdoj.gov/>, Maggio & Kattar, P.C. Immigration and Nationality Attorneys Website: <http://www.maggio-kattar.com/>, U.S. Visa Services and Immigration Law Website: <http://www.usvisa.com/>, U.S. State Department Website: <http://travel.state.gov/visa;employer-based.html>

There is considerable interstate variation in policies toward requesting J-1 waivers, and, in several states, substantial changes in restrictiveness toward the placement of waiver physicians from one year to the next (Chehrazi et al., 1999). Beginning October 1994, each state could request up to 20 waivers per year (P.L. 103-416). As of 1999, 11 states—primarily in the western US—had no program to request waivers (Figure 1) (Chehrazi et al., 1999); the percentage of physicians who are IMGs is lower in the western US than in other parts of the country (Baer et al., 1998). The US General Accounting Office (1996) reported that in 1995, most waivers were requested through federal agencies, and states generally did not request all 20 waivers.

States vary in the contractual length of time waiver physicians must practice in underserved areas. Typically, the contract term is three years, but a few states require a four-year commitment (Chehrazi et al., 1999). Some employers require

Figure 1
States with No J-1 Visa Waiver Program, 1999



Source: Chehrazi et al. (1999).
 Produced By: North Carolina Rural Health Research Program, Cecil G. Sheps Center
 for Health Services Research, University of North Carolina at Chapel Hill.

longer commitments than states, so an IMG can be obligated to practice in an underserved area after the waiver is over. An added issue is that employers can file petitions for an H-1B visa, which is another temporary exchange visitor visa that is often pursued by physicians on a J-1 visa waiver. The US Immigration and Naturalization Service (INS) places a quota on how many H-1B visas can be issued annually, with some exemptions under specific legal criteria. The H-1B visa can be issued to people from a broad variety of different professions that require a college degree, such as computer scientists, architects, engineers, mathematicians, accountants, theologians, and physicians (Maggio, 1998). The Associated Press (Jansen, 2000) reported that the quota on H-1B visas for the current fiscal year was met in March. Failure to receive an H-1B visa would limit the ability of an IMG to stay in the country, much less remain in a rural, underserved area after completion of the waiver obligation.

Under recent policy recommendations by the Council on Graduate Medical Education (1998, 1999) and several health professions organizations (American Association of Colleges of Osteopathic Medicine et al., 1997), J-1 visa waivers to practice in underserved areas would be phased out entirely. Although no new J-1 waivers would be granted to practice in underserved areas, IMGs already on a waiver would be allowed to complete their obligations. Cutting back on the number of new IMGs would, in effect, return the J-1 visa to its original intent of training physicians to bring skills back to their home countries (Council on Graduate Medical Education, 1999).

METHODS

This study made use of both existing data and semi-structured interviews with state and local planners and recruiters to describe the potential impact of a cutback on IMGs on rural physician supply. Data from the 1991 and 1996 American Medical Association *Physician Masterfile* were used, in conjunction with the 1999 Bureau of Health Professions Area Resource File, to document the number and types of rural communities that would be most affected should a cutback in IMGs occur. The *Masterfile* has potential shortcomings and has been shown to undercount physicians in rural areas, but is the most comprehensive data source on physician location and characteristics in the US (Konrad et al., 2000). Data analysis was limited to rural areas, which were defined as nonmetropolitan counties as categorized by the US Office of Management and Budget in 1999. Analysis was also limited to active, primary care physicians working in direct patient care. Primary care was defined as family practice, general practice, pediatrics, or internal medicine as the primary specialty, consistent with the definition used by the US Congress to promote the training of primary care providers (P.L. 94-484, 1976). Quantitative data were studied in two ways: 1) county-level maps to identify which parts of the country have the strongest concentration of IMGs; and 2) tables showing the impact on county population-to-physician ratios of the removal of IMGs from the rural physician workforce.

The issue of who might replace IMGs in the rural workforce should a cutback occur was addressed qualitatively through interviews with state policy makers, health planners, and physician recruiters in Florida, New York, North Dakota, and West Virginia. These states were selected for inclusion in this study because their concentrations of IMGs in rural areas are among the highest in the nation. In three of those four states, IMGs constitute at least 40% of the physician workforce in rural underserved areas; in New York, the percentage is lower,

at 23.1%, but still one of the highest in the nation (Baer et al., 1998). Interviews were semi-structured, building on a list of questions to elicit participants' responses about who might replace IMGs in the respective state, region, or locality. Of particular interest was the ability of planners and recruiters to influence the geographic distribution of certain types of health professionals (e.g., National Health Service Corps physicians, nurse practitioners, IMGs) into rural, needy areas. The issue of IMG replacement lent itself especially well to semi-structured interviews. This format enabled interactive discussion, in which each participant was able to educate the interviewer about complex issues that do not have a simple yes or no answer (e.g., recruitment decisions; perceptions toward groups of health professionals, such as the NHSC; and new input about replacing IMGs).

Participants were asked to provide their thoughts on the suitability of replacing IMGs with "an expanded National Health Service Corps," "physician assistants and/or nurse practitioners," "family physicians," and "osteopaths." The NHSC provides scholarships and loan repayment for US medical students in exchange for practice in an underserved area, and was listed because it has been mentioned previously as a potential source for replacing IMGs (Mullan, 1997; American Association of Colleges of Osteopathic Medicine et al., 1997; CBS News, 1999). The other types of health professionals have some overlap with one another and with the NHSC. They were listed because of their potential roles in alleviating underservice, rather than because of any specific policy recommendation. Participants were also asked to provide their ideas on whether any other types of health providers would practice in places that otherwise might recruit IMGs.

Participants were selected because they are stakeholders in IMG policy through their involvement in recruitment and retention in rural and needy areas. These stakeholders are particularly well informed about recruitment and retention at the grassroots level, where IMG replacement would largely take place. Discussions with stakeholders helped identify and document how they might react, should an IMG cutback occur. Important considerations not included in this study are the reaction at the federal level (e.g., the Appalachian Regional Commission, US Department of Agriculture, Federal Office of Rural Health Policy, Immigration and Naturalization Service) or among medical guilds (e.g., the American Medical Association, the American Academy of Physicians of Indian Origin) to an IMG cutback. Instead, the focus of interviews was more specifically on the perceptions of policy stakeholders within states that have particularly strong IMG concentrations.

In total, 15 telephone interviews were conducted with individuals knowledgeable about physician recruitment and retention, including four from each selected state except North Dakota, which had only three participants. In two interviews, participants decided to include one other co-worker knowledgeable about IMG recruitment. The interviews usually lasted around 45 minutes to an hour. Names were not used in reporting the findings although on a few occasions, further information about the participant's employment was mentioned to document the source of information.

For each state, there was typically at least one participant from the following groups:

- state health department administrators, such as the person(s) involved in administering J-1 waiver applications;

- regional planners within the state, such as an Area Health Education Center coordinator;
- and local recruiters, such as the person responsible for recruiting physicians at a local facility that hires or might hire IMGs.

Some of the participants served multiple functions that crossed state, regional, and/or local levels (see Table 2).

Table 2:
Study Participants by State and Role in Recruitment and Retention

Participant Role	Individual Study Participants by State															
	Florida				New York				North Dakota		West Virginia					
State	*	*			*	*			*	*			*	*	*	
Regional			*	*		*	*		*						*	*
Local				*		*	*	*			*					*

Note: each column represents one participant.

Initial participants were identified based on a list of contacts provided online by the National Rural Recruitment and Retention Network (3R Net, 2000). “3R Net” is a national organization that serves as a clearinghouse to help health providers find rural practice opportunities. Its web site lists “members of the 3R Net that are interested in placing physicians who seek waivers for J1 visas,” and includes the names of state level contacts for information about applying for a J-1 visa waiver (National Rural Recruitment and Retention Network, 2000). The state level contact then helped identify the individual in charge of processing waiver requests for the state, which was typically the same person. State contacts were also asked to suggest the name of a regional planner involved in rural recruitment and retention issues, and/or the name of a local recruiter. In addition, participants offered their own suggestions about which people would be especially useful contacts for this study. As a result, sometimes more than one person was contacted at the state or regional level.

Detailed written summaries from each interview were sent to every participant for verification of accuracy. In most cases, participants offered minor changes that then replaced the previous version of the summaries, hereafter referred to as “interview notes.” Rigor was also achieved through analysis of the interview notes. After completion of interviews, the principal author and a co-author carefully read the notes, one state at a time, and cross-checked their perceptions with one another through interactive discussion. This discussion did not lead to any disagreement but, rather, additional insight, and thereby added to the reliability of the findings.

RESULTS

Identification of rural areas most vulnerable to cutbacks in IMG supply

In the event of a cutback on IMGs, the most affected rural areas will be those in which new IMGs would have chosen to settle. In addition, areas that are currently served by IMGs with J-1 visa waivers are vulnerable to losing providers. Although it is impossible to know where new IMGs might locate in the future, comparison of 1991 and 1996 data from the AMA *Masterfile* show that almost 70% of the counties with new IMGs in 1996 had at least one IMG in 1991. The geographic distribution of IMGs into counties that already had at least one IMG could have several possible explanations, such as: strategies (e.g., advertisements, word of mouth, peer or family contact) that lead to the recruitment of IMGs to fill physician vacancies; cultural clustering of IMGs from similar countries of origins; the openness of towns, clinics, and individual recruiters toward hiring IMGs; and success with previous IMGs in providing medical care. Analysis of the location of counties served by IMGs in 1996 provides an indication of where there will be potential vulnerability to underservice if a cutback occurs.

Maps overlaying physician shortages and IMG concentrations show which nonmetropolitan areas are likely to be most affected by a cutback. Using the Office of Shortage Designation's population to primary care physician ratio of 3000:1 to depict underserved counties, Figure 2a shows that numerous physician shortage areas have strong concentrations of IMGs. Such rural areas include many counties in Appalachia and the deep South, as well as a number of counties in the central US. Figure 2b shows rural counties that are just below the threshold of being underserved (population to primary care physician ratio of 2500:1 – 3000:1) and also have strong concentrations of IMGs. These counties could possibly experience physician shortages if there were a cutback of IMGs. However, in some counties, the *percentage* of physicians that are IMGs will appear high because of the small number of total physicians in the county: In counties that have few physicians, the presence of one IMG can lead to the appearance of a geographic cluster.

Just over 30 percent of rural counties have physician shortages as defined by the Office of Shortage Designation. If all IMGs currently in primary care practice were removed from this calculation, the percentage of rural counties with physician shortages would rise to 44.4% (Table 3). In addition, with removal of IMGs, the number of rural counties with no primary care physicians would rise from 161 to 212. On the one hand, many of the IMGs currently practicing in the US are either US citizens or permanent residents, and therefore would not be affected by future policy changes. On the other hand, the almost 50 percentage point increase in the number of counties that would be underserved if no IMGs were practicing in this country gives an indication of the magnitude of the reliance of rural counties on these types of providers.

Table 4 further illustrates the extent of the concentration of IMGs in many underserved areas, and how the distribution of underserved counties would change if there were no IMGs practicing in the US. Among other findings, the table indicates that only 80.2% of rural counties with population-physician ratios of less than 3000:1 would remain so without IMGs. In other words, one out of every five "adequately served" nonmetropolitan counties would become underserved without IMGs. In addition, among rural counties that currently have ratios between 3500:1 and 4000:1, 45% would see increased physician shortages. These findings give emphasis to the pressing need to replace IMGs if there is a cutback.

Almost 70% of the counties with new IMGs in 1996 had at least one IMG in 1991. The location of counties served by IMGs in 1996 provides an indication of where there will be potential vulnerability to underservice if a cutback occurs.

One out of every five "adequately served" nonmetropolitan counties would become underserved without IMGs.

Figure 2a
Concentration of International Medical Graduates
in Nonmetropolitan Counties that are Shortage Areas
 (Population to Primary Care Physician Ratio > 3,000:1)

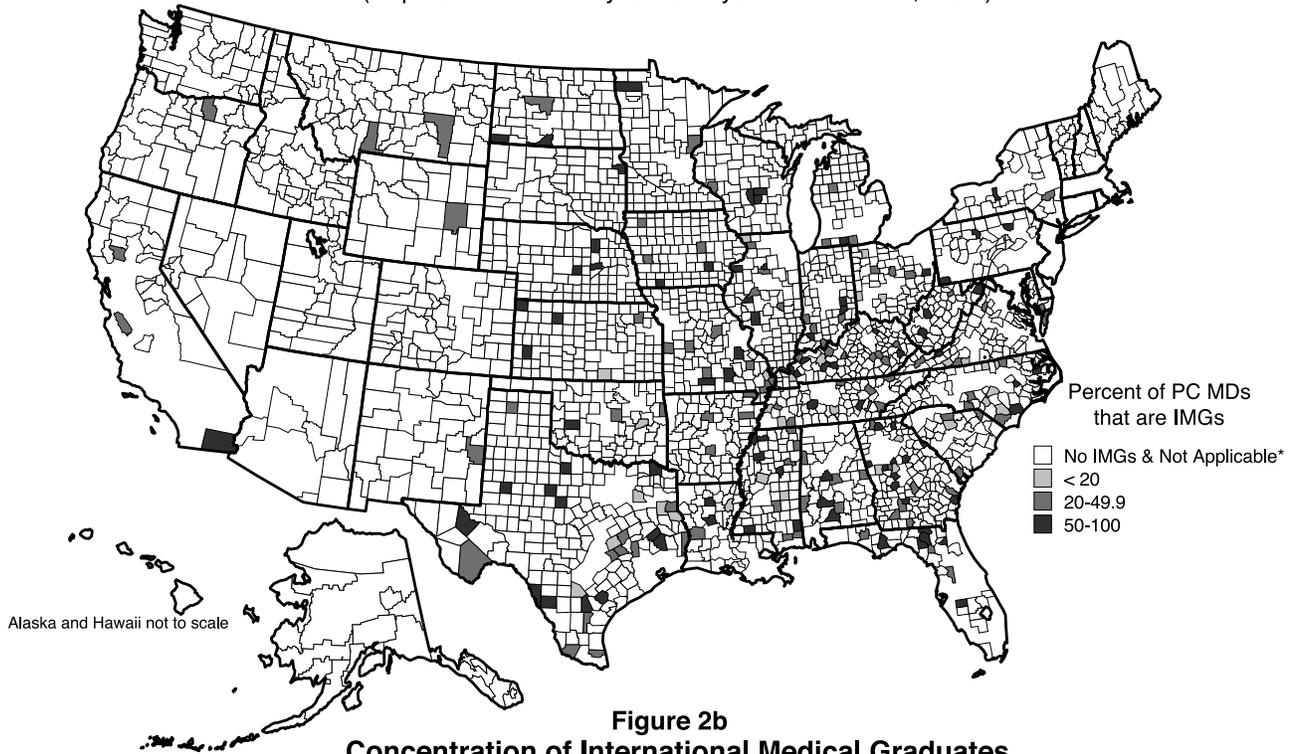
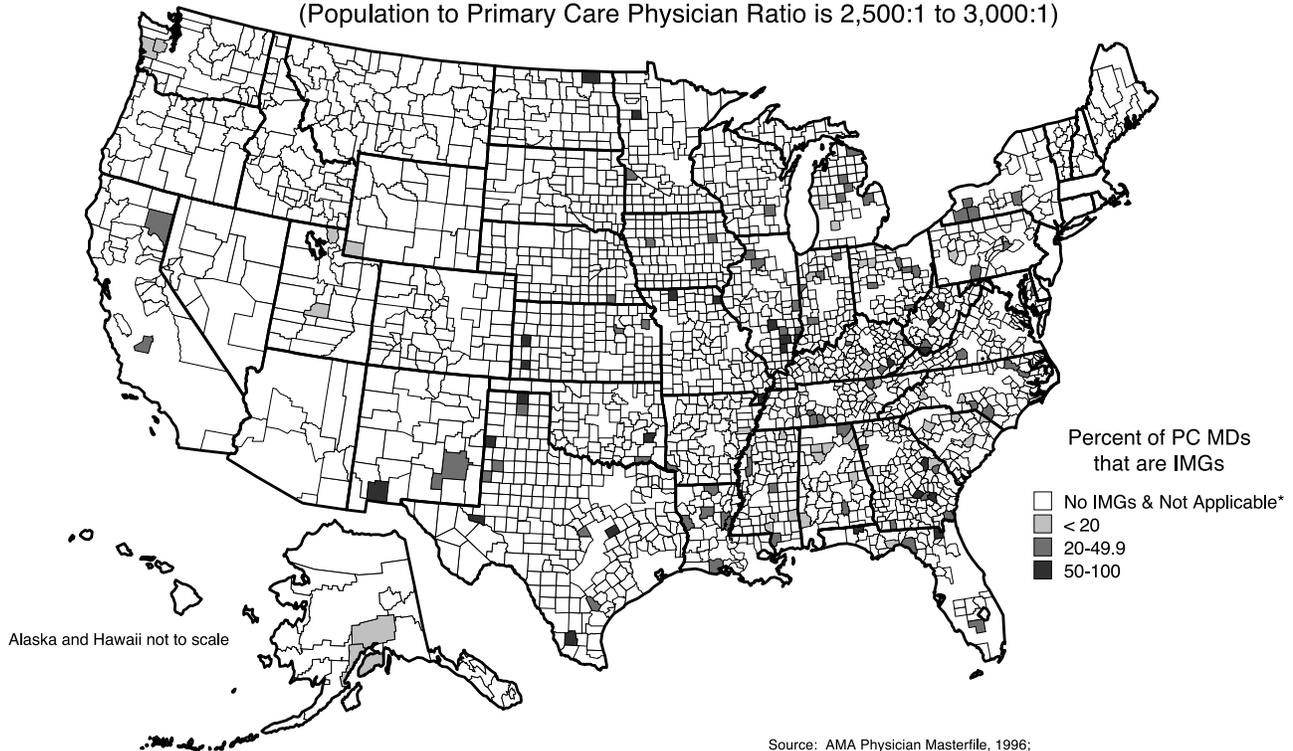


Figure 2b
Concentration of International Medical Graduates
in Nonmetropolitan Counties that are Near-Shortage Areas
 (Population to Primary Care Physician Ratio is 2,500:1 to 3,000:1)



*This category represents counties with no IMGs, other rural county types and metropolitan counties.
 Note: Primary Care Physicians include family practitioners, general practitioners, internists, and pediatricians providing patient care.

Source: AMA Physician Masterfile, 1996;
 Area Resource File, 1999; US Bureau of the Census, 1999.
 Produced By: North Carolina Rural Health Research Program, Cecil G. Sheps Center for Health Services Research, University of North Carolina at Chapel Hill.

Table 3:

Population to Primary Care Physician Ratios for Non-Shortage and Shortage Counties
With and without International Medical Graduates
Nonmetropolitan Counties, 1996

Population per Physician	County Totals			
	If IMGs are included		If IMGs are not included	
	(number)	(percent)	(number)	(percent)
Non-Shortage (< 3000)	1572	69.3%	1261	55.6%
Shortage				
3000 to 3500	166	7.3%	194	8.5%
3500 to 4000	100	4.4%	137	6.0%
4000 or more	271	11.9%	466	20.5%
No physicians	161	7.1%	212	9.3%
Total Shortage	698	30.7%	1009	44.4%
Total Counties	2270	100.0%	2270	100.0%

Sources: AMA Physician Masterfile, 1996; Area Resource File, 1999.

Table 4:

Redistribution of Population to Primary Care Physician Ratios
if International Medical Graduates (IMGs) are not Included
Nonmetropolitan Counties, 1996

Population per Physician (with IMGs)*	Population per US Medical Graduate (without IMGs)									
	< 3000		3000 to 3500		3500 to 4000		4000 or more		No physicians	
	No. Counties	Pct. Row	No. Counties	Pct. Row	No. Counties	Pct. Row	No. Counties	Pct. Row	No. Counties	Pct. Row
< 3000	1261	80.2%	109	6.9%	65	4.1%	118	7.5%	19	1.2%
3000 to 3500	0	0.0%	85	51.2%	17	10.2%	57	34.3%	7	4.2%
3500 to 4000	0	0.0%	0	0.0%	55	55.0%	43	43.0%	2	2.0%
4000 or more	0	0.0%	0	0.0%	0	0.0%	248	91.5%	23	8.5%
No physicians	0	0.0%	0	0.0%	0	0.0%	0	0.0%	161	100.0%

* includes both US medical graduates and international medical graduates.

Sources: AMA Physician Masterfile, 1996; Area Resource File, 1999.

Selected examples from the above table:

80.2% of counties with physician-population ratios < 3000:1 would remain < 3000:1 without IMGs
In other words, one out of every five "adequately served" nonmetropolitan counties would become underserved without IMGs.

34.3% of counties with physician-population ratios of 3000-3500:1 would have ratios of over 4000:1 without IMGs

Potential replacements for IMGs in the event of a cutback

Interviews included discussion of whether the replacement of IMGs would involve specific, often overlapping groups of health professionals as safety net providers, such as: state medical school graduates, National Health Service Corps (NHSC) physicians, physicians in state contingency programs, family physicians, osteopaths, nurse practitioners, and physician assistants. They are discussed below.

All participants saw state medical schools as key players in efforts to recruit providers into needy areas.

The Role of State Medical Schools. Several recommendations to offset an IMG cutback have included a role for medical education in funneling health professionals into needy areas (American Association of Colleges of Osteopathic Medicine et al., 1997; Council on Graduate Medical Education, 1998; Mullan et al., 1995). All participants saw state medical schools as key players in efforts to recruit providers into needy areas. Participants recommended many different strategies, including:

- recruitment of medical students who are predisposed to rural practice; e.g., people who grew up in a rural setting and want to remain in a rural area;
- greater emphasis on recruitment of future rural physicians at a younger age, including high school and junior high school;
- rural rotations during medical school;
- residency training in rural areas, such as rural “1-2 tracks,” in which residents spend *one* year at a teaching hospital, typically with 12 to 20 other residents. This is followed by *two* years of training at a community hospital in a more remote, rural area which typically includes only one or two residents;
- changes in medical education so that students will not be discouraged from family medicine or rural practice (e.g., inclusiveness of more medical schools to students wishing to pursue rural, primary care; reversal of the trend toward subspecialization);
- linkages between medical schools and rural communities to improve recruitment efforts;
- financial support for medical students and residents who choose to practice in rural areas.

Different strategies emerged from interview to interview, both within and among states, forming the above list. One recruiter in West Virginia added that the ideal recruits are “missionaries and mavericks who tend to go the road less traveled.” Participants in West Virginia expressed great confidence in rural rotations to influence those missionaries and mavericks, and at least two recruiters in different states thought especially highly of the rural 1-2 track. Indeed, which of the above strategies to use or prioritize appeared to be a frequent concern in recruitment and retention efforts affecting the replacement of IMGs. In addition, the above list reflects strategies that are already in place in many areas. Participants overwhelmingly stated that such strategies to reduce underservice would continue in the future.

Study participants had mixed opinions about using an expanded NHSC to replace IMGs.

The National Health Service Corps (NHSC). Study participants had mixed opinions about using an expanded NHSC to replace IMGs. Such perceptions varied from state to state and within states.

In Florida, all participants spoke highly of an expanded NHSC as a valuable approach to offset losses in new IMG supply (see Conte et al., 1992). A state recruiter said that if there is an IMG cutback, an expansion of the NHSC would “probably help more than anything for public health recruitment,” while a community health center recruiter said that an expansion of the NHSC “may be sufficient” if the J-1 waiver to practice in underserved areas were eliminated.

However, nearly all participants in other states were more hesitant about the possibility of expanding the NHSC to replace IMGs. In West Virginia, a rural recruiter said that “leaving it on the shoulder of the Corps physician or the waiver physician is not the way” to replace physician shortages. A local recruiter took a far more critical stance, referring to the NHSC as “more of a dictatorship” that has a top-down approach to physician placement.

Concern was expressed about the “flexibility of the placement process” of the NHSC.

A state planner in New York also expressed concern about the “flexibility of the placement process,” a point reiterated in other states, too. Such concern often focused on problems with designating underservice. Under current requirements, NHSC physicians must practice in Health Professional Shortage Areas (HPSAs) but underservice designations for placing state J-1 waiver physicians vary from state to state. For example, West Virginia limits waiver physicians to practice in HPSAs, whereas the other three states request waivers for IMGs to practice in HPSAs or Medically Underserved Areas (MUAs) (Chehrazi et al., 1999). The extent to which HPSA and MUA boundaries overlap varies from state to state, with substantial overlap taking place in Florida, according to participants there. Problems with designating underservice was one concern that surfaced in considering the ability of NHSC physicians to replace IMGs.

Another concern raised by recruiters in New York and North Dakota was whether an expansion of the NHSC would be enough to fill slots currently held by IMGs. For example, the director of the New York State Area Health Education Center estimated that the NHSC would need to be tripled in size to replace IMGs in the state. Additional concerns surfaced in other interviews about using the NHSC to replace IMGs in rural areas, including: bureaucratic problems; perceived differences in the effectiveness of the NHSC’s scholarship and loan repayment programs; and concerns about continuity of care if there is high turnover.

State Contingency Programs. Participants in all states volunteered that their states have had service conditional programs like the NHSC, in which the state helps fund medical education in exchange for requiring, rewarding or encouraging graduates to practice in underserved areas. Some programs are funded entirely by individual states, while other programs share funding with the National Health Service Corps and hence require service in a HPSA. However, state funding for the program in Florida has been stopped, and in North Dakota, only one provider has been trained through the program. One problem, explained by a state planner in North Dakota, is that its contingency program can only offer a \$60,000 a year salary, in contrast to \$120,000 offered by the NHSC. While state contingency programs were viewed as helpful in alleviating underservice, they were rarely mentioned as a mechanism to help offset a loss in new IMG supply.

Family Physicians. Throughout the four studied states, the recruitment of additional family physicians was regarded as an ideal for replacing IMGs. Several participants explained that a great advantage of family physicians is their ability to treat patients of any age. For example, a family physician can see adults and children, whereas a general internist can only see adults, and a pediatrician can only see children. Participants expressed some puzzlement, however, at the idea of recruiting more family physicians to replace IMGs, since more family physicians are already needed. Current strategies used by states to recruit family physicians are offered above (e.g., reliance on medical schools and residency programs).

Osteopaths. Except for North Dakota, all of the selected states have an osteopathic college. Most participants saw little or no difference between osteopaths and MDs. As with family physicians in general, participants spoke very highly of osteopaths while acknowledging the same concern; i.e., how to recruit more of them.

Other Physicians from Outside of the US. One of the more creative strategies to offset future physician shortages, offered by an aide to Senator Dorgan (D-ND) is to consider the North American Free Trade Agreement (NAFTA) as a means to recruit Canadian health providers. By the participant's explanation, it would take only two months to work through the process of hiring a physician from Winnipeg to practice in the US. Recruitment of Canadian medical graduates was not explored further as part of the study, and was not mentioned by any other participants. Since medical schools in the US and Canada are both accredited by the Liaison Council on Medical Education (LCME), the migration of physicians from Canada to the US is considerably easier than from other countries (Mullan et al., 1995).

Another approach to replacing IMGs is not so much to "replace" them, but rather to find other creative ways of recruiting them. For example, consider that J-1 waiver physicians often seek H-1B visas, which can lead to permanent residency. As a participant explained about the use of H-1B visas by rural clinics and hospitals:

"Many use this and, while the physician is here, work on an I-140 application (permanent residency based on employment). I-140 applications must show that the applicant is very much needed because there are no qualified US workers who are willing to do the job. These applications often take a year to process. So, clinics realize that they can get a qualified physician within months and, if the person is well received and they indicate that they want to stay at the clinic, the health facility can petition to INS for them to stay permanently. I've seen this going on more and more in North Dakota."

Nurse Practitioners and Physician Assistants. The overwhelming majority of participants in the study area did not view nurse practitioners (NPs) and physician assistants (PAs) as key in replacing IMGs. A common perception among participants was that NPs and PAs ("midlevels") already play a major role in reducing underservice, and to increase such reliance further could have limitations and drawbacks. Frequently mentioned concerns about increasing the number of midlevels included problems with call schedules, physician oversight, the ratio of physicians to midlevels, unequal reimbursement, state laws and policies, lack of opportunities, and the appropriateness of "replacing" IMGs with nonphysicians.

For example, if a clinic already has eight or ten midlevels and four or five physicians, a concern that participants expressed was the feasibility of hiring additional NPs. Making the ratio of physicians to midlevels more unequal could be too taxing on physicians' time, according to several participants. For example, physicians take call for patients seen by midlevels; NPs and PAs consult with physicians; and state laws and policies also require varying degrees of collaboration and physician oversight of NP or PA work (e.g., countersigning prescriptions written by PAs; reviewing charts at specified time intervals). However, NPs in the study area often have more autonomy than PAs. As a result, it can be practical to increase the ratio of NPs per physician, according to a nurse practitioner who

works in regional recruiting in Florida. Despite the benefits of NPs and PAs in reducing underservice, several participants referred to NPs and PAs as “extenders” who should only be used to complement physicians, and not to replace them. Difficulties for NPs and PAs with finding employment opportunities and receiving adequate insurance reimbursement served as additional issues of concern. For example, a local recruiter in North Dakota reported that an X-ray ordered by a midlevel receives 80% reimbursement, even if a physician reads it.

Interstate Variation in Dependence on International Medical Graduates

The extent to which recruitment efforts are viewed to be affected by a loss in new IMG supply differed within the study area. On one extreme was North Dakota, which appeared to have the strongest dependence on IMGs. Participants there viewed an IMG cutback as a source of serious concern and, in the words of a rural clinic recruiter, a “major stumbling block.” On another extreme was West Virginia, which has seen a sharp reduction in its number of J-1 waiver requests. According to the director of the state’s Division of Recruitment, a few years ago, there were 50 to 70 waiver applications a year, and now they are down to less than 10. The tapering supply of IMGs in the state may make the issue of replacing IMGs less relevant in West Virginia, but can also serve as a possible example for other states in developing strategies for IMG replacement. Participants at the state, regional, and local level in West Virginia reported that such reduction in dependence was accompanied by an increased focus on rural rotations in clinical education, in which health science students receive three months training in a rural site. However, the state still has a strong concentration of IMGs in rural and underserved areas, despite an increased emphasis on recruiting physicians who received their medical degrees within the state. Participants in West Virginia generally described an IMG cutback as a minor issue that will not pose a major problem in recruitment efforts. Acknowledging the contributions of IMGs, one participant involved in rural education described an IMG cutback as a “blip” because of the state’s “grow your own strategy.” The state has two allopathic and one osteopathic medical college.

New York and Florida—large states with sizable urban populations—fall somewhere between the two “extremes” of dependence on IMGs characterized by the predominantly rural states of West Virginia and North Dakota. Consistent with previous findings about innovative solutions to reduce physician shortages, participants in Florida discussed a variety of strategies. According to a state planner, “There are solutions if we were to get no more IMGs, but it would require new working relationships among local governments, hospitals, HMOs, physicians, federal government programs and social service providers.” While potential solutions might rely on innovation, a director of an Area Health Education Center explained, “it’s going to be a variety of people” who will replace IMGs, rather than one simple solution.

New York is unique because of its three year limited licensure for physicians who are not US citizens, according to health planners in the state. Similar to the J-1 waiver, limited licensure entails practice in an underserved area, albeit according to different criteria for underservice. A local recruiter in New York described a potential IMG cutback as the “tyranny of the majority” because of priority given to national physician oversupply. However, another participant involved in rural education speculated that a growing physician surplus will lead more physicians to practice in needy areas. In his view, an IMG cutback is “not a

minor issue,” and at the same time, “it’s not insurmountable.” The situation of New York is complicated further because, as of 1997, nearly one in three IMG medical residents in the US was in New York; also, New York annually exports more physicians than any other state.

IMPLICATIONS FOR POLICY AND PLANNING

This study points to the complexity and seriousness of the potential problem of replacing IMGs in rural areas if there is a cutback. Many underserved, rural areas would likely remain underserved, with the added difficulty of expanding ongoing recruitment and retention efforts. Many currently non-underserved, rural areas could face serious problems as well; approximately one in five non-underserved, rural counties would have physician shortages if IMGs were not included in the population-to-physician ratio. The question is, what can be done to help rural areas avoid physician shortages related to an IMG cutback?

This study points to the complexity and seriousness of the potential problem of replacing IMGs in rural areas if there is a cutback. Each state’s health workforce strategies and differences in IMG dependence muddle the issue of finding a common strategy to replace IMGs.

Each state’s health workforce strategies and differences in IMG dependence muddle the issue of finding a common strategy to replace IMGs. The results illustrate the difficulty involved in finding a single national solution to replace IMGs, especially if states beyond the study area also have variations in recruitment and retention strategies and in IMG dependence.

A recruiter in a rural region of New York encapsulated such difficulty in saying that all health professions have “ecological niches,” and the solution to replacing IMGs needs to be “multifactorial” and “elastic.” Virtually all participants discussed multifaceted approaches aimed at recruitment and retention, and often revealed creativity in doing so. While approaches used may differ from state to state and town to town, an important (and commonsensical) issue is that states and local recruiters often use innovative solutions to meet their staffing needs. Moreover, how a rural community would replace its IMG physicians appears to be a lesser problem than the larger question, “How would rural communities make do with less?”

State planners and local recruiters already use creative and innovative approaches aimed at the recruitment and retention of health professionals in needy areas. A cutback would make the task of reducing physician shortages a more pressing need in many areas that now depend on IMGs. The weight of IMG replacement will most likely be uneven, with the areas of greatest concern in Appalachia, the Deep South, North Dakota, and many counties in the central US, where IMG concentrations appear to be strongest. Many local, regional, and state planners might need to expand their current efforts at recruitment and retention, while also searching for further innovations in collaborating to reduce underservice. Because each strategy to reduce underservice has major limitations, it is quite possible, should there be an IMG cutback, that many rural communities might have to make do with less.

Reexamining Posited Solutions

Expanding the role of medical schools in rural recruitment and retention could be a major component of IMG replacement. However, such efforts are ongoing now regardless of whether there will be a cutback (e.g., rural rotations, rural 1-2 tracks). Each state has varying approaches and abilities to reduce physician shortages, and different budgetary priorities. Each university health science

coordinated across multiple jurisdictions, such as the local, state, and federal level. Yet there is no consensus on strategies to recruit and retain physicians involving state medical schools. For example, participants in West Virginia expressed confidence in rural rotations, in which medical students spend three months of training in a rural site. However, Pathman et al. (1999) raised concerns that people form geographic attachments prior to medical school; therefore, spending three months on rotation in a rural site could have limited usefulness in recruitment and retention. Relying further on state medical schools would depend on which strategies are employed, and the success of those strategies in different places. It is difficult to assume that recruitment and retention efforts will necessarily be any easier after an IMG cutback.

The NHSC is often mentioned as a source of health professions supply to replace IMGs (Mullan, 1997; Council on Graduate Medical Education, 1998; CBS News, 1999). A significant expansion of the size of the NHSC would be necessary to meet the needs of more underserved areas. As of September 1999, 1,356 physicians were in the NHSC, compared with over 2,000 IMGs with waivers to practice in underserved areas (US General Accounting Office, 2000). Recruiters and planners have mixed opinions about the NHSC, particularly concerning flexibility in placement decisions, problems with underservice designations, continuity of care, and bureaucracy.

Even if an expanded NHSC could partially help replace IMGs, recruiters and planners within states and local areas will still need to use creative approaches to reduce underservice. Each health profession's "ecological niche" is likely to vary from place to place, depending in large part on local and professional needs. In other words, each health profession acts as one of many interactive components to reducing underservice in a rural, needy area. Removing one of the components (e.g., waiver physicians) alters the ecology within which health professions reduce underservice, with uncertain consequences. To assume that the NHSC can fill the same niche as IMGs everywhere would be overlooking the great complexity of places and health workforce supply.

Additional Considerations

This paper illustrates the difficulty in finding a mechanism to replace the IMG clinicians who practice in underserved areas. Many different policy actors will have a role in IMG replacement efforts, including public agencies at the local, regional, state, and federal levels; and private organizations, such as various guilds and medical schools. Finding a mechanism that works once is no guarantee it will work again, or that it will work equally well in another place (Sayer, 1992).

Ironically, the issue of replacing IMGs is generally discussed in the literature as a national issue, but communities are likely to play the strongest role in replacing IMGs. It will take grassroots efforts in individual hospitals and clinics to hire staff to replace IMGs. Communities will need to find the necessary funding and devise innovative strategies to maintain adequate staffing at clinics and hospitals.

There is still time to gain community input before an IMG cutback would have a pronounced impact, as many IMGs on J-1 waivers would still be under obligation to practice in underserved areas in the first few years of a cutback. Observers calling for an IMG cutback should convene meetings with medical

Many different policy actors will have a role in IMG replacement efforts, including public agencies at the local, regional, state, and federal levels; and private organizations, such as various guilds and medical schools.

community leaders in rural and underserved areas that have strong concentrations of IMGs. Conferences on IMG replacement should be held, involving researchers, policy makers, planners, recruiters, elected representatives, physician association representatives, members of local medical communities, and any other interested parties. The stakes for many rural and needy areas are too high to propose solutions from a distance without such collaboration. Even with collaboration, it seems unlikely that longstanding problems in underservice can be fixed easily.

Global Connections

Many rural, needy areas in the US have benefited from having more IMGs available for employment, but the IMGs' home countries have lost some of their most highly trained citizens.

The debate over IMGs is not simply about national physician oversupply versus local physician shortages, as framed in much of the previous literature (see Mick et al., 2000); the local impact of globalization is the real issue. Many rural areas which formerly did not have any immigrants now depend on them. For example, the staffing of a clinic in a remote area in North Dakota is now contingent upon the migration patterns of people in South Asia and other world regions. Whether less developed countries have the infrastructure to support a highly trained physician workforce adds another layer of concern. Many rural, needy areas in the US have benefited from having more IMGs available for employment, but the IMGs' home countries have lost some of their most highly trained citizens. Meanwhile, many policy makers view this relationship as a "problem" that is disadvantageous to the US, largely because of physician oversupply. It is as if part of the debate over IMG supply is taking place behind closed US borders when, in fact, places are so deeply interconnected that the borders are not always as distinct as they once seemed.

The world appears to be shrinking as distant places become more closely connected through migration patterns, and through advances in telecommunications, trade, and transportation. Connections across vast expanses of space (e.g., between India and the US) reflect uneven interdependencies between countries. For example, any pair of importers and exporters can be expected to have different levels of dependence on one another, not simply for physicians but for any number of products or services, including computers, clothes, automobiles, children's toys, pharmaceuticals, or financial services. The importation of these and other items raises major controversy about what or who should be allowed to compete in the US marketplace. Whether to allow increased competition from abroad is a debate that leads to a number of complex considerations, including the protection of American jobs and the economic needs of less developed countries. To replace IMGs, there needs to be some way of managing or reversing the trend of globalization so that USMGs will fill the roles of IMGs. To say that the task is daunting is an understatement.

What started out as a national policy issue – replacing IMGs in the event of a cutback – has turned into a complex topic that cuts across multiple geographic scales of analysis. Unfortunately, existing policy proposals have focused on relatively simple solutions; i.e., reliance on a considerable, often unspecified, expansion of the NHSC or on an increased role for state medical schools. While such efforts can have positive benefits in many places, the replacement of IMGs would need to be a major, multifaceted task. It is not clear that federally directed initiatives can totally meet the needs of many rural, needy areas that currently depend on IMGs. Many state and local areas will need to initiate and coordinate their

own innovative solutions, despite already facing problems in the recruitment and retention of physicians.

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