

# **U.S. Policies to Address Physician Maldistribution**

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## **U.S. Policies to Address Physician Maldistribution**

Geographic maldistribution of physicians has persisted in the U.S. despite significant growth in the physician workforce and physician-to-population ratios (General Accounting Office, 2003). The federal government, which has taken an overall free-market approach to the geographic and specialty distribution of physicians, has established interventions aimed at rural and inner-city communities that face health professional shortages. States have also played a role in addressing physician shortages through specific initiatives and through the health professions education programs they oversee. Most efforts to address physician maldistribution began with concern about severe rural shortages, and have evolved to include inner-city communities.

### **Identifying Physician Shortages in the U.S.**

There are two main measures of medical underservice in the U.S., health professional shortage areas and medically underserved areas and some special need populations. Both measures require communities to apply for designation. These designations allow the government to target resources to those determined to be most in need.

#### **Health Professional Shortage Areas**

The U.S. began identifying specific physician shortage areas in 1970 with the creation of Critical Health Manpower Shortage Areas. These shortage designations were initially limited to geographic areas in which there were fewer than one physician for every 4,000 people. Now called health professional shortage areas (HPSAs), they are the principal tool for measuring physician shortages in the U.S. Areas experiencing shortages of dental and mental health professionals are also eligible for designation.

HPSAs have evolved to include defined populations experiencing barriers to care (population HPSAs), as well as the originally defined geographic areas in which physician shortages exist (geographic HPSAs). Certain facilities that provide health care, such as correctional facilities, state mental hospitals, and public and non-profit facilities are also eligible for designations. Legislation passed in 2002 provided automatic HPSA status to all federally-qualified health centers and those rural health centers that provide care regardless of a patient's ability to pay.

Current criteria for geographic areas to be designated as HPSAs require that the population-to-practitioner ratio exceeds 3,500 to 1, or 3,000 to 1 in areas with special high need population groups. Communities are eligible for population HPSA designations if a portion of the population experiences barriers to care and is low-income, Medicaid-eligible, migrant or seasonal farm workers and their families, American Indian or Alaska Native, homeless populations, or other populations isolated by linguistic or cultural barriers or by their disabilities.

The total number of HPSA designations has grown from fewer than 2,000 during most of the 1980's to 3,809 in 2004 (Bureau of Health Professions). This growth in HPSA designations, principally in population group designations, is thought to represent the increased sophistication of applicants and inducements of federal funds tied to HPSA designations more than increased physician shortages (Council on Graduate Medical Education). In fact, studies have shown that many designated HPSAs have adequate numbers of physicians.

As HPSA designations have evolved to address economic and cultural barriers to physician services as well as absolute shortages of physicians, they have become as much a measure of medical underservice as a measure of physician shortages. As such, they have been compromised as a measure of pure physician shortage. The principal role of HPSAs is to trigger program interventions.

### **Medically Underserved Areas/Medically Underserved Populations**

Medically underserved areas (MUAs) and medically underserved populations (MUPs) are federal measures to identify communities with insufficient health services based on four variables. These variables include the percent of the area's population with incomes below the poverty level, the percent of the service area's population age 65 and over, the infant mortality rate, and the ratio of primary care physicians to the population.

MUAs were created in 1973 to promote the development of health maintenance organizations in rural areas. Certain federal programs, principally those for community health centers, require service to MUAs/MUPs in order to receive funds. A published Index of Medical Underservice is used to score applications. Applicants that score below a certain number receive a designation. Like HPSAs, MUAs/MUPs are mainly a measurement used to distribute resources to needy areas, rather than a comprehensive assessment of underservice.

### **Policy Directions**

HPSAs and MUAs/MUPs have been criticized as duplicative designations that end up identifying many of the same areas. The fact that they are application-driven means that designations are given to communities with the resources and initiative to successfully apply, leading to a fragmented approach to identifying shortages. Exclusion of other primary care professionals, such as nurse practitioners and physician assistants, in the designation criteria is thought to overstate the level of shortage (General Accounting Office, 2000).

The Health Resources and Services Administration (HRSA) sought to address some of the weaknesses of the HPSA designation process through regulation changes that were proposed in 1998. Widespread concern about the changes, mostly about potential loss of designations, lead HRSA to undertake further review of proposed changes to the HPSA program before taking action.

Subsequent revisions to the HPSA criteria and designation process have been developed by HRSA and are currently being circulated within the Department of Health and Human Services. Principal criteria changes include counting physician assistants, nurse practitioners and certified nurse midwives in the count of primary care providers as in the previously proposed changes, adding health indicators and weighting formulas that enhance the scientific basis for designations, and combining HPSA and MUA/MUP designations. Another significant change is a shift in the designation process from an application process to one initiated by HRSA using county and subcounty data to establish HPSAs nationwide. In addition, communities would have an opportunity to present their own data. No timeframe for publication of these proposed changes has been established (Jordan).

### **Causes of Geographic Maldistribution**

Wright and colleagues have posited that there are two principal conditions leading to physician shortages in rural communities; they are “demand-deficient,” meaning they have insufficient populations and resources to support a physician practice, they are “ambiance-challenged,” meaning they are isolated, lack quality services and amenities, and/or are in geographically unattractive settings, or a combination of the two sets of conditions. Inner-city physician shortages are a more recently recognized issue. They are affected by the same two conditions, though the specifics are different.

### **Non-Metropolitan Shortage Areas**

At the beginning of the twentieth century, physicians were nearly evenly distributed between rural and urban areas. In the intervening years, the specialization of medicine, the increasing social and professional isolation of rural areas, and growing economic disparity between urban and rural areas contributed to physician shortages in rural America (Colwill).

Family and general practitioners, the core of the rural physician workforce, now comprise just over one of every ten patient care physicians in the U.S. Given the smaller population bases of rural areas, specialists are often unable to attain economic viability in such communities, and lack hospitals, labs, and specialty colleagues needed to make their practice viable. Even general internists and pediatricians experience problems with issues such as call coverage. The relatively small number of family and general practitioners contributes to shortages in rural areas.

Family and general practitioners with a sufficient patient population and income face other adverse conditions. Community factors such as inadequate schools for their children, fewer professional opportunities, and a dearth of cultural and other amenities for spouses and children play a large role in decisions not to locate or remain in rural areas. High rates of poverty and extreme conditions can also make these areas unattractive to physicians.

Physician gender plays a role in physician shortages as well. The female physician workforce has grown steadily as a proportion of the overall physician workforce, and half of current medical graduates are now female. Traditionally, female physicians have been less willing than male physicians to practice in rural areas. Although this trend appears to be less sharp among recent graduates, female physicians are still less likely to practice in rural areas than male physicians (Council on Graduate Medical Education, Calman, 2004).

### **Metropolitan Shortage Areas**

In urban areas, access to physician services is often more a function of language, insurance status, and health care system design than the number of physicians. Metropolitan areas have seen steady increases in the total number of physicians and physician-to-population ratios over the past several decades. Simultaneously, there have been increases in the number of HPSA designations (Council on Graduate Medical Education). As the COGME report points out, designated physician shortage areas are usually in close proximity to practicing physicians, but these physicians do not readily accept patients from HPSA communities.

Metropolitan physician shortage areas typically have high proportions of low-income populations. For patients that are poor and uninsured, or are enrolled in public insurance programs, physician offices that do not provide sliding scale fees or accept public insurance are inaccessible. Physician locations that may be a reasonable distance in a suburban or rural location may be inaccessible to patients who rely on urban public transportation systems.

Differences of race, ethnicity, language and culture may exacerbate a population's access to physicians. Studies have found that, even controlling for income, inner-city communities with high proportions of racial minorities have fewer physicians than those that do not (See, for example, Komaromy). Because most metropolitan physician shortages are only partly, if at all, geographic in nature, locating more physicians in metropolitan shortage areas without concomitant changes in the health care system will do little to change access to care in these communities.

### **Profile of Physicians in Shortage Areas**

Various studies have identified the types of physicians that are more likely to practice in shortage areas or to care for underserved populations in the U.S. Most studies have examined particular regions or cohorts of practitioners and different themes have emerged. Metropolitan and non-metropolitan shortage areas have attracted different types of physicians. Their characteristics are examined here. Data are also presented from a recent study conducted by the authors that was commissioned by the Bureau of Health Professions to examine physicians in HPSAs nationally (Calman, 2004).

## Data Sources

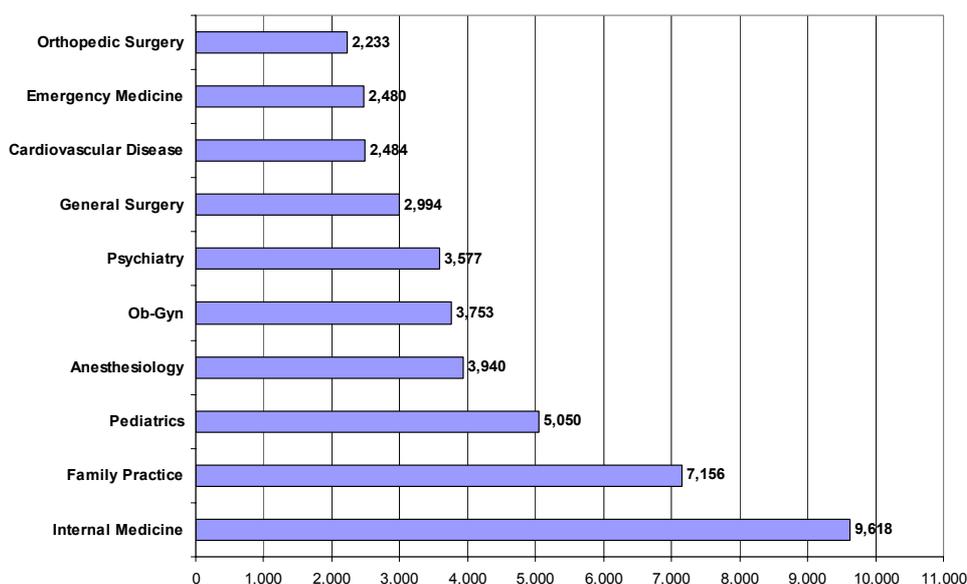
It should be noted that establishing an accurate assessment of physicians in shortage areas requires that shortage areas are systematically identified and that physician data are complete and reliable. The limits of current shortage area designations have been discussed. In the absence of a national system to obtain data on the practice locations of the Nation's physician workforce, government agencies and researchers have relied principally upon two professional organizations, the American Medical Association (AMA) and the American Osteopathic Association (AOA), to collect and maintain national physician data sets. These are proprietary data sets that have a number of weaknesses as research tools. Additional commercial physician data sets exist which have their own strengths and weaknesses. Health researchers and policymakers have advocated a more proactive role on the part of federal agencies in ensuring that sound physician data sets are available for physician workforce studies. Some states have established their own physician data sets for workforce analysis, using physician licensing and other mechanisms to obtain data.

## Physicians in Shortage Areas

The vast majority of physicians practicing in shortage areas are located in metropolitan HPSAs. The Calman (2004) study of physicians in HPSAs found that eighty percent of HPSA physicians practice in metropolitan shortage areas, despite nearly equal populations residing metropolitan and non-metropolitan HPSAs. Because of the nature of metropolitan HPSA designations discussed above, the presence of physicians in these HPSAs is not an indicator of access to care for HPSA populations.

In addition to differences in total numbers, metropolitan and non-metropolitan HPSAs attract different types of physicians. The nature of the practice environments in each type

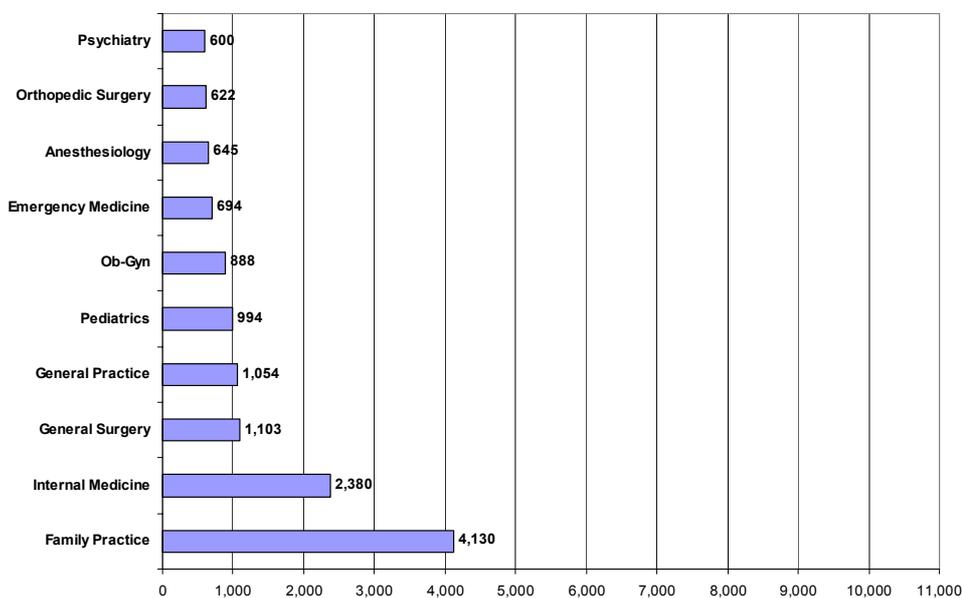
Figure 1.  
Specialties with the Highest Number of Physicians in Metropolitan HPSAs (2000)



Source: Calman, 2004

of HPSA leads to somewhat different specialty mixes. Figures 1 and 2 present the ten largest specialties in metropolitan and non-metropolitan HPSAs. As these figures show, non-metropolitan HPSAs greatly rely on family physicians and other more generalist specialties for care. In fact, family physicians comprise nearly a quarter of all physicians practicing in non-metropolitan HPSAs. General internists are more dominant in metropolitan HPSAs, along with other specialty physicians. Primary care physicians represent 40 percent of the physicians in the data set. They comprise 37 percent of the physicians in metropolitan HPSAs and 53 percent of physicians in non-metropolitan HPSAs

**Figure 2.**  
Specialties with the Highest Number of Physicians in Non-Metropolitan HPSAs (2000)



Source: Calman, 2004

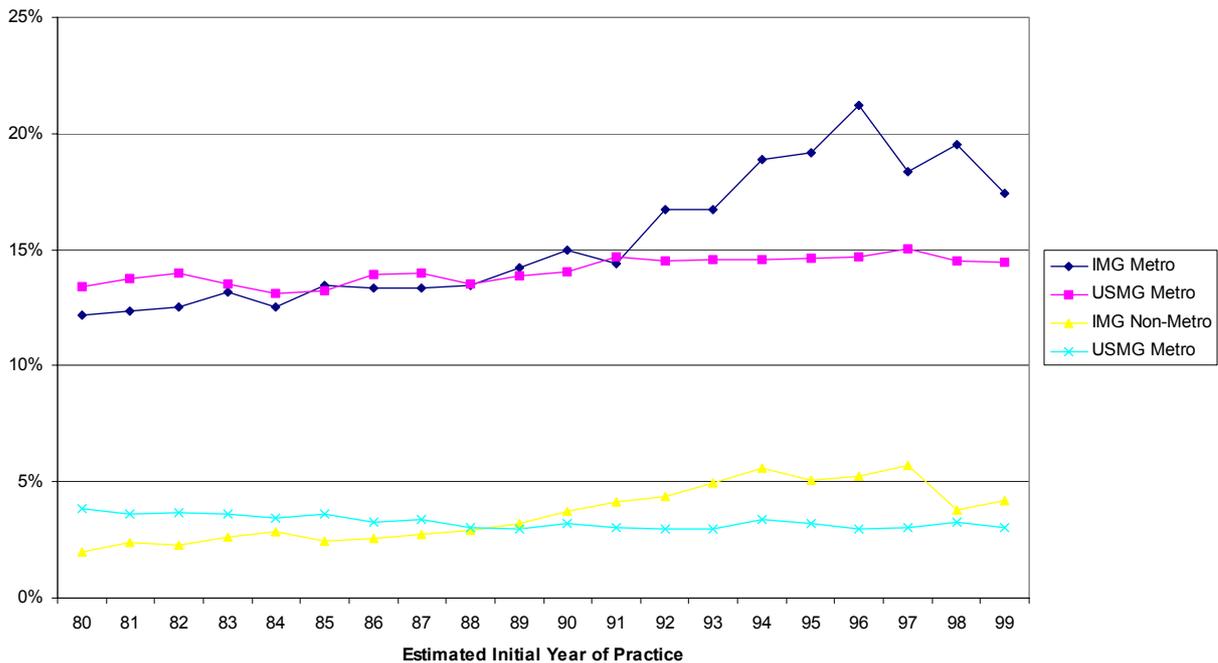
Physician gender is known to play a role in HPSA practice, particularly in non-metropolitan HPSAs where female physicians are less likely to practice than male physicians. Female physicians, comprising roughly 22 percent of practicing physicians, make up a slightly higher proportion of physicians in metropolitan HPSAs (23 percent) and a lower proportion of those in non-metropolitan HPSAs (17 percent) (Calman, 2004).

International medical graduates have been found to fill gaps in the physician workforce in both metropolitan and non-metropolitan shortage areas. For example, Mick found that IMGs were disproportionately located in high poverty areas of the largest U.S. cities. Baer found that IMGs comprise a greater proportion of primary care physicians in designated rural shortage areas than in rural areas without designated physician shortages.

Although the Calman (2004) study found little difference in the overall HPSA practice rates of IMGs and USMGs, IMGs practicing internal medicine, pediatrics, and their subspecialties were found to be more likely to practice in non-metropolitan HPSAs than

USMGs. Analysis of HPSA practice rates by estimated year of initial practice found that the percentage of IMGs practicing in metropolitan and non-metropolitan HPSAs in 2000 was much higher for those who more recently entered the physician workforce and exceeded the HPSA practice rates of USMGs in the same cohorts (See Figure 3.) This finding, and an increase in visa waivers granted to IMGs, suggests that IMGs are a growing presence in HPSAs.

**Figure 3**  
**Percentage of Physicians in HPSAs in 2000 by U.S. or International Medical Graduate and Estimated Year of Initial Practice**

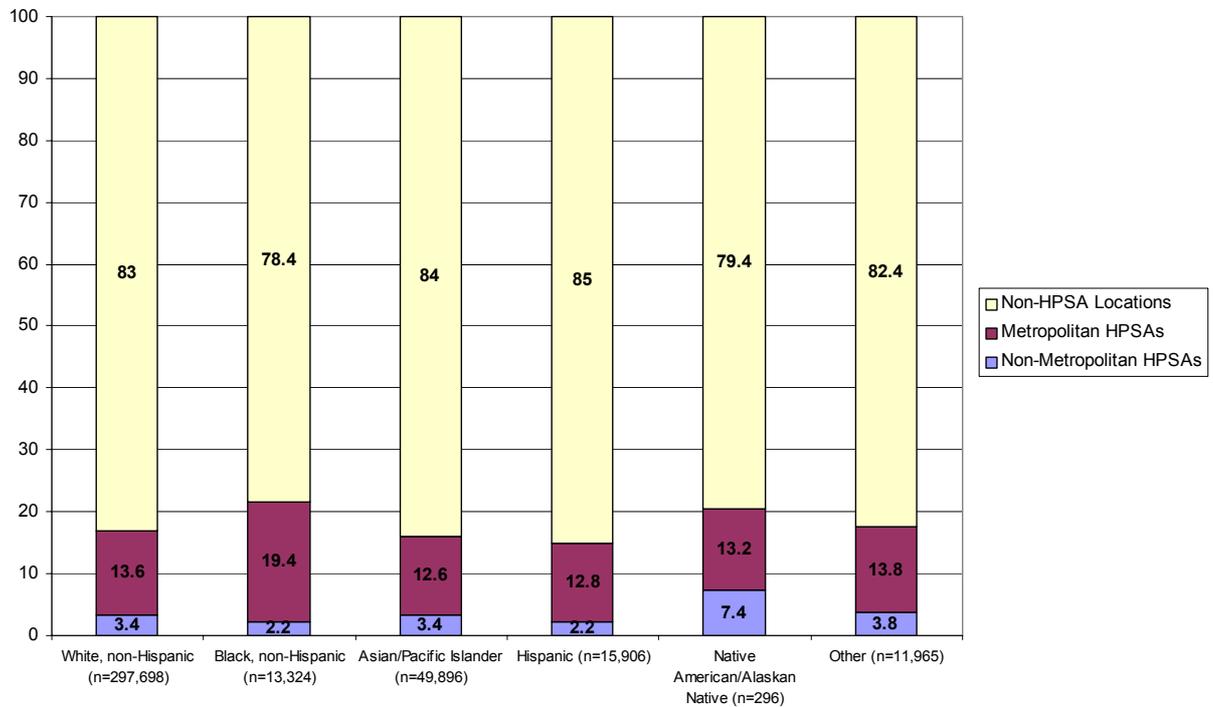


Source: Calman, 2004

Increasing the number of underrepresented minority physicians has been suggested as one strategy for attracting more physicians to underserved areas, as studies have found that underrepresented minority physicians disproportionately provide care for low-income, minority patients (Moy, Cantor). The Calman (2004) study found that black physicians are the most likely to practice in HPSAs, with notably higher rates of practicing in metropolitan HPSAs, as did an earlier study (Calman 2003).

Native American/Alaskan Native physicians, though small in number, have disproportionately high numbers of physicians in non-metropolitan HPSAs. Other underrepresented minority physicians—black and Hispanic—are less inclined to practice in non-metropolitan HPSAs than physicians of other races or ethnicities (See Figure 4).

**Figure 4.**  
**Percentage of All Physicians in HPSA and Non-HPSA Locations by Race/Ethnicity\* (2000)**



\*Race/ethnicity is known for 73% of physicians in the study

Source: Calman, 2004

There is evidence that physicians from underserved areas are more likely to subsequently practice in these communities. Medical school recruitment of rural students has been one approach to increasing the number of physicians in rural communities. Providing clinical opportunities for medical students and residents to gain experience practicing in rural and/or urban underserved communities has been shown to result in an increased willingness to locate in and serve those underserved populations. While some of these programs track outcomes, reliable data on physicians in underserved areas who have had exposure to these experiences while in training have not been identified.

### **Programs to Address Physician Maldistribution**

The principal federal programs to address physician shortages are incentive programs that tie funds or other benefits to service in shortage areas. Larger federal efforts are directed at actually establishing new health services in underserved areas. Community and migrant health centers provide places of employment for physicians in underserved areas and, therefore, beneficially affect the supply of health professionals in these communities.

Past policies which, intentionally or not, increased the supply of physicians, did not lead to the diffusion of physicians into shortage areas. Federally-funded medical school expansions in the 1960's and 1970's and Medicare and Medicaid hospital payment

formulas that linked reimbursements to the number of residents, leading to unfettered growth in the number of residents training in U.S. hospitals and totaling billions of dollars, are examples of such policies. Other, more direct programs have had more success.

### **National Health Service Corps**

The National Health Service Corps (NHSC) was created in 1970 specifically to place physicians in shortage areas. This program represents the principal effort by the U.S. to address physician maldistribution. There are currently over 2,500 practitioners participating in NHSC programs, which include a scholarship program and a loan repayment program. Primary care physicians\* and other health professionals are eligible to participate in these programs in exchange for service in a HPSA.

The NHSC program is currently funded at \$170 million and has enjoyed high federal visibility and support in recent years. With thousands of past and currently participating physicians and other health care professionals serving HPSA communities, NHSC must be considered the Nation's most effective tool for redistributing physicians. The majority of NHSC participants continue to practice in underserved settings, if not their original placement site, after their service-obligation ends and they make positive clinical and community contributions (Konrad).

Studies have found lower rural retention rates among NHSC participants than among non-participants practicing in rural communities (Cullen, Pathman). This is not surprising as rural NHSC physicians are assigned to practice in a community, while non-NHSC rural physicians presumably locate there voluntarily. Various suggestions for improving retention of NHSC physicians have been put forward, such as selecting more appropriate matches for program participants and extending the length of physicians' service obligations (Cullen). An assessment by the U.S. General Accounting Office suggested lifting the requirement that forty percent of NHSC awards be made for scholarships because of the cost-effectiveness and retention associated with the loan repayment program. This change was made as part of the Health Care Safety Net Amendments of 2002. The report further suggests that placements could be improved to ensure that as many needy areas as possible are able to get placements. The NHSC program cites the need to balance placements with the potential to retain practitioners. It is unclear which goal takes precedent in the program.

Another issue has been the lack of coordination in placing NHSC participants with service-obligated health professionals participating in the state loan repayment and visa waiver programs that are described below.

### **State Loan Repayment Programs**

A federally-sponsored state loan repayment program, similar to NHSC, was created in 1987 to assist states in meeting their needs for primary care practitioners. The program

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\* Psychiatrists are eligible to participate in exchange for service in a mental health HPSA.

provides states with up to fifty percent of funds for loan repayment for primary care practitioners serving in HPSAs. Thirty-eight states currently participate in the program. Funding for the program has averaged approximately \$7 million over the past several years. States provided payments for 230 program participants in 2002.

Most states have established their own scholarship and loan repayment programs. A 1996 survey of these programs found that 41 states sponsored 82 additional programs to attract physicians and other health professionals to underserved areas (Pathman). With over 1,300 physicians and 370 midlevel practitioners, these programs represent another major effort to address maldistribution.

### **Visa Waiver Programs**

Physicians who are not U.S. citizens or permanent residents can receive a waiver of visa restrictions in return for practice in an underserved area. These physicians complete graduate medical education in America on J-1 (visitor exchange) visas and would otherwise be required to return to their country of origin for at least two years before being eligible to return to the U.S. Visa waivers are granted through two programs in which interested government agencies or states request waivers.

Through a program referred to as the “Conrad State 20” and now expanded to thirty, each state is allowed to recommend 30 physicians on J-1 visas for visa waivers in exchange for practice in a HPSA in that state. The program was created in 1994, and, as of February 2002, forty-one states and the District of Columbia were participating (Hagopian). A survey of state program administrators identified 568 program participants in FY 2000-2001 (Hagopian). While program administrators participating in the survey indicated that the program met its goal of placing physicians in HPSAs, the study raises several issues with respect to the effectiveness of the program. Specifically, not all the waivers allowed through the program are used, there is no requirement to serve low-income populations, there is no retention information or requirements, and no administrative funds are provided to assist states in carrying out the program.

Several federal agencies, including the Department of Health and Human Services, the Appalachian Regional Commission, and the Delta Authority, request waivers as “interested government agencies,” or IGAs, serving to place primary care physicians in underserved areas. More than half of all visa waivers are granted through IGAs.

The U.S. Department of Health and Human Services does not endorse the use of non-citizen international medical graduates as a long-term solution to physician maldistribution, but uses this approach to meet short-term needs. In fact, the number of physicians participating in visa waiver programs now approaches that of NHSC participants. Ethical considerations would appear to point against the recruitment of physicians, particularly those from less developed countries, to meet U.S. physician workforce needs (See Hallock, for example). However, recent expansion of the “Conrad State 30” program and introduction of legislation to extend the program through 2009 (Senate Bill 2302), a robust supply of IMGs pursuing training in the U.S., and the

absence of alternative policies suggest that visa waiver programs will continue indefinitely.

### **Medicare Incentive Payments**

The Medicare Incentive Payments Program was initiated in 1987 to provide bonus payments to physicians willing to practice in rural, geographic HPSAs. The program started with bonus payments of 5 percent of the Medicare payment for service provided in a qualified HPSA. These payments were increased to 10 percent in 1991.

The General Accounting Office has offered criticism of this program as ineffective in improving care to underserved communities (General Accounting Office 1999). The GAO report states that the relatively small payments made to individual physicians through this program, as well as other issues, are unlikely to have an impact on the physician supply in underserved areas and that specialists, not the primary care physicians targeted in the program, are receiving the bulk of the payments. Several studies have raised questions about the effectiveness of this program as well (Shugarman, Chan).

### **Community and Migrant Health Centers**

Community health centers (CHCs) are established to provide an array of health services to people in underserved communities on a sliding fee scale based on income. These centers employ physicians and other health professionals in underserved communities. As they now receive automatic status as HPSAs, CHCs are eligible placement sites for NHSC, state loan repayment and visa waiver participants. CHCs play an important role in primary care access in underserved areas.

Initiated as part of the War on Poverty in the 1960's, there are now over 700 organizations operating 3,000 individual community health centers. These centers served 11 million people in FY 2000. Federal funding for these centers is currently over one billion dollars annually.

### **Pipeline Programs**

There are a number of federally-sponsored programs that seek to increase the number of physicians in underserved areas throughout the medical education and training pipeline using less direct methods and often resulting in unclear outcomes. The Health Careers Opportunity Program provides funds for medical and other health professions schools to assist students from disadvantaged backgrounds to attain health professions education. To the extent that these students eventually practice in underserved areas, this program benefits physician distribution.

Title VII of the Public Health Service Act authorizes a variety of federal programs, including a number that support education and training of physicians in primary care. Funding preference is given to programs that operate in and/or serve underserved

communities. Primary care residencies, clinical faculty development for primary care residencies, and departments of family medicine within medical schools are key programs that produce primary care physicians for underserved populations.

The Area Health Education Centers Program, which now operates in a majority of states with a combination of Title VII funding and state funding, seeks to improve the distribution of health professionals in underserved areas by promoting health careers among minority students, providing education and training experiences in underserved areas for health professions students, and clinical faculty development and continuing education for practitioners. Title VII remains critical source of funds for urban and rural programs operating in underserved areas. All of these programs have faced elimination or budget cuts on nearly an annual basis over the past several years.

Many states use preferential admission of students from rural areas or other underserved communities as a means of increasing the number of physicians and other health professionals in these areas. Some also have selective admissions policies to increase the number of primary care graduates.

### **State Programs**

States engage in a variety of activities to attract and retain physicians and other health professionals in underserved communities. Several states have provided start-up grants, bonuses, and income supplements that are tied to service obligations. States have also provided tax incentives. Subsidizing malpractice premiums or providing immunity from malpractice for charitable care, particularly for obstetrical services, has been another approach. States have also begun looking at increased Medicaid payments to selected providers and providing locum tenens relief (National Council of State Legislatures).

### **Conclusions**

The national Council on Graduate Medical Education, in its comprehensive 1998 report on the geographic maldistribution of physicians in the U.S., stresses that lack of health insurance is the greatest barrier to care in the U.S. and that providing such coverage is the most direct way to address physician maldistribution (COGME). It is generally acknowledged that, even with such coverage, certain communities experiencing challenging conditions such as high poverty rates and geographic isolation will continue to need federal and state assistance to attract physicians. Safety net programs at the federal and state level have provided important resources and remain critical to medical underserved areas.

To effectively serve communities in need, several enhancements to these safety net programs must be made. First, it is strongly urged that changes such as those proposed for the HPSA and MUA/MUP designation criteria and process be operationalized. Without a systematic approach to identifying shortage areas and medical underservice,

there cannot be a clear understanding of shortages or an appropriate distribution of federal resources.

Second, a reliable system for tracking physicians and their practice locations nationwide must be established to replace the current piecemeal approach to identifying physicians and where they practice. The lack of sound physician practice data will continue to compromise the shortage designation process and workforce planning without improvements. Several states have used their physician licensing mechanisms as a vehicle for collecting practice data. There is potential for federal-state partnerships in establishing a national system for physician practice data.

Once changes in the physician shortage designation process and physician data collection and tracking have been made, appropriate evaluation can be conducted of programs to address physician maldistribution and medical underservice. The effectiveness of short-term and long-term solutions to physician shortages can be better measured and strengthened as a result.

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