

Addressing Health Professions Shortage Areas in Eastern North Carolina

John Frino, MD

About 20% of the US population—more than 50 million people—but only 9% of the nation's doctors live in rural communities.¹ Any area that has only one full-time primary care doctor for every 3,500 people is designated as a health professions shortage area (HPSA). Although the US has an overall surplus of medical doctors, there is a great and continuing problem with inequitable access to care, especially in rural areas. If the current maldistribution continues, we will continue to have HPSAs, despite what politicians promise during election years.

Rural eastern North Carolina faces the problem of physician shortage. So far, neither lawmakers, nor health care professionals, nor citizens of the state have found a solution for this problem. In this paper I look at what is currently being done to address HPSAs in North Carolina and other states. Drawing on my experiences as a medical student in eastern North Carolina, I consider the impact of several measures: making increased funds available to HPSAs, increasing the numbers of doctors in rural North Carolina, and using non-physician providers in rural areas, and I look at ways in which legislation could be part of the solution.

Pay Them and They Will Come: More Dollars for HPSAs

Title VII of the Public Health Service Act passed by Congress in 1963 supports the training of generalists who will practice in medically underserved areas. It authorizes programs to improve the supply and distribution of health professionals by awarding funds to schools and training

programs that foster the development of providers who will one day practice in underserved areas. Originally, Title VII focused on increasing the numbers of doctors, and it succeeded. The number of doctors per unit population rose by 34% between 1950 and 1980, but by the mid-1970s it became clear that this supply-side strategy was not inducing doctors to practice in shortage areas. So Congress passed the Health Professions Education Assistance Act of 1976, which redirected Title VII programs to improve geographic distribution by inducing generalists to practice in medically underserved areas.

Still, no one has solved the distribution problems that led to the Health Professions Education Assistance Act, so we must look at ways to change specific aspects of programs if we are to reduce the numbers of medically underserved areas. Politzer et al looked at how theoretical changes—particularly increased funding for Title VII—might affect future physician distribution and the time to eliminate medically underserved areas. In 1996 and again in 1997, \$23.5 million Title VII dollars per year were devoted to graduate training for primary care (family medicine, internal medicine, and pediatrics). They estimated that, since 32% of family practice and 38% of medicine/peds trainees in Title VII-funded programs enter practice in medically underserved areas, it would take 15 years of funding at the 1997 level to attain the ratio of 1 doctor per 3,200 population needed to eliminate all HPSAs. If the level of funding of Title VII programs were doubled—and if this led 50% of graduates to practice in medically underserved areas—the time to elimination of HPSAs would be decreased to 6 years. Although hypothetical, the model shows the impact of dollars on the HPSA problem.¹

Of course, Congress has fiscal avenues other than Title VII funding to help eliminate HPSAs. One example is the Critical Access Hospital program, passed as part of the Balanced Budget Act of 1997. This program funds hospitals in rural areas to deliver outpatient, emergency, and limited

The author graduated from Wake Forest University School of Medicine in 2000 and is now interning in orthopedic surgery at the University of Arkansas for Medical Sciences. He can be reached at frinojohn@UAMS.edu.

inpatient services, but only a paltry \$25 million was authorized annually for five years to accomplish this goal.² The results of the program will be assessed at the end of the 5-year commitment.

Part of the difficulty with government funding is how the services provided by doctors and other healthcare workers are viewed. Some argue that healthcare is a right and services an entitlement; others argue that such services are privileges. The truth probably lies somewhere between these two poles, but I believe that, if lawmakers looked at medical practices as business entities, susceptible to all market pressures, they would recognize that financial assistance is essential to eliminating HPSAs. There are many challenges to developing and maintaining medical practices in shortage areas. Medically underserved communities tend to be disproportionately poor and the people who live there, uninsured. This means that medical practices in those areas are likely to experience serious financial problems, analogous to those faced by any small business attempting to start up in a poor and minority community. Because primary medical care practices must function as small businesses, doctors tend to gravitate to communities with the financial resources and service infrastructure that will support a medical practice. Without assistance from state or local governments, doctors are unlikely to seek out or remain in practice in locations with few patients who can pay for primary health care. Of course, any increase in the number of individuals with health-care insurance would also attract physicians to rural, medically underserved areas.

Getting More Doctors into Practice

There are means other than increased funding to eliminate HPSAs. Increasing the number of doctors is a reasonable option. There have been proposals (looked at in limited trials or only in theory) for the use of retired physicians, for the recruitment of international medical graduates (IMGs), or for outreach programs that import physicians from non-rural areas. In addition, some medical schools have increased the number of their graduates who enter practice in rural areas.

The Rural Cancer Outreach Program. Desch et al reviewed the Rural Cancer Outreach Program (RCOP) at the Medical College of Virginia to determine whether such a program might help HPSA patients. The RCOP was developed to bring state-of-the-art medical care to medically underserved rural areas. The RCOP benefits rural cancer patients, but survival of the program depends ultimately on economic viability. The authors found that the RCOP enhanced rural patients' access to cancer care with cost savings for society

(the net annual cost per patient fell from \$10,233 to \$3,862). The authors attributed the savings to use of outpatient services, more efficient use of resources, and a shift to a less expensive locus of care. In addition to cost savings, the rural hospitals involved experienced rapid growth of their programs by more than 200 new patients yearly.³

Overall, Desch et al claim that the RCOP had a positive financial impact on rural hospitals and academic medical centers, improved care-near-home for rural patients, and a lower overall cost of cancer treatment. This study did not examine generalist care, but it does offer a hope for providing care to rural underserved populations. The partnering of academic medical centers with rural hospitals may provide both better care for rural areas and economic advantage. Solutions in which both parties benefit should be the standard for every program.

"Many educators feel that part of the difficulty in attracting and retaining physicians in HPSAs is that the doctors are ill-prepared for rural work and small-town living."

Academic Initiatives. Outreach programs may help HPSAs that are geographically close to academic medical centers, but they are unlikely to help very isolated areas. We must find ways to induce doctors to locate their practices in remote areas of need. Medical schools have been at the forefront of looking at this very problem. Many educators feel that part of the difficulty in attracting and retaining physicians in HPSAs is that the doctors are ill-prepared for rural work and small-town living. Studies support some, but not all, of the popularly held beliefs about this. For example, Pathman et al found that the likelihood of staying in rural practice does correlate with the doctor's

sense of preparation for small-town living, but not with preparation for practice in a rural environment.⁴ Doctors who understood small-town living were twice as likely to stay in practice there as doctors who were unprepared. Training rotations that provide 3 months or more of experience in rural areas during medical school or residency often lead doctors to settle eventually in rural areas.⁴ Rosenbaum et al found several features of medical schools—public ownership, greater numbers of family practice graduates, and fewer NIH dollars—that were positively associated with how many of the school's graduates practiced in rural areas.⁵

East Carolina University. In recruiting students who are likely to work in HPSAs, medical school admission committees should recognize that being prepared for living in a rural community is more important than preparation for the practice of rural medicine. This is precisely what East Carolina University (ECU) School of Medicine does in order to produce doctors who want to practice in eastern North Carolina. A good percentage of the ECU medical school class has lived in or has ties to eastern North Carolina. ECU

knows that these students, already familiar with small-town living, are likely to work in rural North Carolina.

Jefferson Medical College. The Physician Shortage Area Program (PSAP) of Jefferson Medical College has, since 1974, recruited and selectively admitted medical students who grew up in rural areas and who intend to practice family medicine in rural and underserved areas. The 15 PSAP medical students in each class have family doctor faculty advisors, take a third-year family medicine clerkship in a rural location, and spend a senior outpatient subinternship in family medicine. After graduation, PSAP graduates are expected to enter a family practice residency and to practice family medicine in a rural and underserved area, although this is not enforced.

In 1997, Rabinowitz et al found that Pennsylvania's seven medical schools had sent 150 graduates from the classes of 1978-1991 into family practice in rural Pennsylvania; 32 of the 150 (21%) were PSAP graduates of Jefferson Medical College, even though that program had produced only 1% (206/14,710) of all Pennsylvania graduates during those years. Looking just at Jefferson Medical graduates, 68 of 200 PSAP graduates (34%) were practicing in rural areas, compared to 303 of 2701 (11%) non-PSAP graduates.⁶ Getting doctors to practice in rural areas is one thing, keeping them in practice there is another. The PSAP program seems to have succeeded; in 1997, 87% of the PSAP graduates practicing 5-10 years earlier were still in practice.⁶

Jefferson Medical College appears to have found a way to find and nurture students who are likely to practice primary care in a rural underserved area. Certainly, the PSAP program has made a substantial contribution to the supply and retention of practitioners for rural and underserved areas. Other medical schools that want to increase the supply of rural physicians could develop targeted programs similar to the PSAP model. However, rural communities are the primary beneficiaries, and medical schools have few incentives to develop these programs. Policy makers must work with medical schools to develop financial incentives or regulatory pressures.

Enhancing Clinical Practice. In addition to trying to increase the number of students entering rural practice, academic medical centers have developed other programs to meet the needs of rural and underserved areas. For example, the University of New Mexico Health Sciences Center and ECU School of Medicine developed *locum tenens* programs to address health care needs within their states. In collaboration with state government representatives and agencies, the programs provide temporary practice coverage so doctors in

rural and medically underserved regions can get some time off. Doctors in struggling practices get relief, the *locum tenens* providers get training in rural medicine, and the relationship of rural doctors and academic programs is improved.⁷ Funding for such programs comes, in part, from appropriations by state legislatures, but most comes from payment for locum tenens services by individual practices.

International Medical Graduates. One proposal for helping HPSAs is to increase the number of International Medical Graduates (IMGs) practicing in these areas. IMGs are medical graduates of schools located outside the US and Canada. Between 1988 and 1995, the number of IMGs enrolled in US residency programs more than doubled (to 26,763), while the number of US medical graduates (USMGs)

remained relatively stable. However, it is not clear whether IMGs reduce the shortage of doctors in rural areas or just contribute to the national oversupply of doctors. Baer et al found that IMGs constitute a greater percentage (18.7%) of the primary care workforce in rural underserved than rural non-underserved areas (14.3%). But there is one great incentive inducing IMGs to enter practice in rural HPSAs: their visa status. IMGs enter the US and train or work under exchange visitor visas (J-1 visas). After a specific term, J-1 visa holders must return to their home country for 2 years before they can apply for permanent status in the US. A waiver of the requirement to

return home can be granted in return for practicing in an underserved area. The number of requests for J-1 visa waivers in return for practice in underserved areas increased from 70 in 1990 to 1,374 in 1995. As of 1995, more IMGs requested waivers (1,374) than were on active service with the National Health Service Corps (1,267).³ The incentive of the return-home waiver is one reason why IMGs are more likely than US medical graduates to practice in rural HPSAs, and thus IMGs may not provide a long-term solution.

"Physician assistants, nurse practitioners, nurses, pharmacists, social workers, and medical students already working in rural communities could mitigate the lack of doctors in HPSAs."

Better Use of the Healthcare Workforce

The current supply of primary care doctors falls short of the need in underserved rural locations. This means non-physician health professionals may be able to narrow the gap in coverage. Physician assistants, nurse practitioners, nurses, pharmacists, social workers, and medical students already working in rural communities could mitigate the lack of doctors in HPSAs. Designation as a shortage area is based only on the number of doctors, so these communities may have a number of other health care professionals already in place.

Knapp et al noted that the presence of pharmacists allows a number of HPSA residents to have at least some access to health care resources and expertise. The favorable distribution of pharmacists appears to be due both to large numbers of professionals overall and to their higher rate of distribution into HPSAs than primary care doctors.⁸ Pharmacists are good candidates for measuring and monitoring blood pressure and weight, for checking home glucose monitor results, and for educating patients about the appropriate use of medications and devices. Until HPSAs are eliminated, such an interdisciplinary approach may provide an interim solution to primary care shortage.

As a student, I myself took part in the Health Care for the Underserved experience. This included a one-week rotation in eastern North Carolina where I participated in the health care of the community without the direct supervision of a physician. Student duties included checking blood pressure and blood glucose, as well as community health education at the local high school. We were not qualified to provide acute medical care, but we did fill a need and added to the overall health care of a HPSA. Innovative solutions that do not increase current costs may be a temporary solution until government funding increases.

The Effect of Legislation

A number of communities, medical schools, and state governments have tried to equalize physician distribution across geographic areas, but all attempts thus far have failed. New national legislation may be needed to solve this problem. An example is the Medical Assistance Facilities (MAF), limited-service hospital model. MAFs were granted relaxed Medicare staffing regulations, such as ratio of doctors to nurses on staff, and they get cost-based reimbursement from Medicare and Medicaid.⁹ Flexible Medicare rules allow for more appropriate staffing (including off-site medical supervision of care provided by nonphysician providers, and fewer registered nurses on staff). HPSAs that receive these favorable benefits have added chances to improve healthcare in their communities.

Current Medicare policies on the funding of graduate medical education (GME) seem to contribute to rural physician shortages. The Medicare program, a major supporter of GME, does not equitably distribute federal investments across communities and states. For example, in Washington, DC, the per capita spending for GME is nearly \$162; in rural Mississippi it is \$3! This financial bias toward urban training perpetuates the HPSA dilemma, since doctors tend to practice where they train. The Balanced Budget Act of 1997 made provisions to pay part of GME expenses directly to the rural health centers that incur costs of a training program. However, this covers only the direct medical expense portion of Medicare GME dollars, which is only half as much as the

indirect expenses that are paid to teaching hospitals. The Balanced Budget Act helps, but more is needed.

Conclusions

The student elective called "Health Care for the Underserved" allowed a group of first and second year medical students to see first hand the delivery of care to a town in eastern North Carolina. Those taking that elective tried to add to the public health of the community through blood pressure and glucose screening and community education. The direct impact was minor, but the experience enticed us to look further at the nature of rural practice.

A number of other approaches to eliminating HPSAs have been proposed or put in place. These include increasing the current level of funding of programs to encourage rural practice, new academic programs to enroll and encourage students interested in rural life and practice, enlarging the presence of doctors, using non-physician providers, and new legislative maneuvers. All of these and more, in concert, may help alleviate the problem of HPSAs, a persisting and troublesome shortcoming in the nation's health care picture.

References

- 1 Politzer RM, Hardwick KS, Cultice JM, Bazell C. Eliminating primary care health professional shortage areas: the impact of title VII generalist education. *J Rural Health* 1999;15:11-20.
- 2 Reif SS, Ricketts TC. The Medicare critical access hospital program: the first year. *J Rural Health* 1999;15:61-6.
- 3 Baer LD, Ricketts TC, Konrad TR, Mick SS. Do international medical graduates reduce rural physician shortages? *Med Care* 1998;36:1534-44.
- 4 Pathman DE, Steiner BD, Jones BD, Konrad TR. Preparing and retaining rural physicians through medical education. *Acad Med* 1999;74:810-20.
- 5 Rosenbaum S, Hawkins DR, Rosenbaum E, Blake S. State funding of comprehensive primary medical care service programs for medically underserved populations. *Am J Pub Health* 1998;88:357-63.
- 6 Rabinowitz HK, Diamond JJ, Markham FW, Hazelwood CE. A program to increase the number of family physicians in rural and underserved areas: impact after 22 years. *JAMA* 1999;281:255-60.
- 7 Knapp KK, Paavola FG, Maine LL, et al. Availability of primary care providers and pharmacists in the United States. *J Am Pharm Assoc* 1999;39:127-35.
- 8 Desch CE, Grasso MA, McCue MJ, et al. A rural cancer outreach program lowers patient care costs and benefits both the rural hospitals and sponsoring academic medical center. *J Rural Health* 1999;15:157-67.
- 9 Shreffler MJ, Capalbo SM, Flaherty RJ, Heggem C. Community decision-making about critical access hospitals: lessons learned from Montana's Medical Assistance Facility Program. *J Rural Health* 1999;15:180-8, 1999.