BACK TO THE FUTURE

Minnesota’s Rural Health Workforce Shortages

BY JENNIFER GUNN, PH.D.

With the Affordable Care Act’s promise of health insurance coverage for 34 million more Americans comes the question of whether the medical establishment has the capacity to provide care to all who need it. Concern over whether the United States has enough primary care physicians, especially in rural areas, isn’t new. Since the end of World War II, the country has been contending with shortages. This article provides an historical perspective on the shortage and efforts to alleviate it in the United States and Minnesota.

The Affordable Care Act (ACA) has generated a slew of projections about a coming shortage of physicians in the United States. Some say as many as 124,000 more will be needed to care for the 34 million Americans who are expected to gain insurance coverage as a result of the law,1 exacerbating what has been described as a “long-standing and critical shortage of rural and primary care physicians.”2 These predictions echo concerns that have been expressed since World War II. Each time the issue of a physician shortage came up, it was in response to new programs that increased demand for medical care and concern that rural and poor urban areas would be left with too few doctors. Medical leaders in the late 1940s—another period of heated political debate over national health insurance—worried that disparities in medical care availability between rural and urban areas would turn the tide of popular opinion in favor of a compulsory health insurance plan proposed by President Harry Truman.3

In Minnesota, a series of local and federal initiatives to address the rural physician shortage were implemented between 1946 and the mid-1970s. Although these programs increased the production and retention of doctors in the state, they could not dictate the distribution of physicians. This article looks at the history of efforts in Minnesota to increase the number of and access to primary care physicians in rural areas.

The Post-World War II Boom

By the end of World War II, after more than a decade of economic depression followed by five years of a war economy, the nation’s hospitals were outdated, in disrepair and inadequate for meeting the needs of a growing population. The war spotlighted achievements in medical science, such as the development of penicillin, creating new faith in the efficacy and power of medicine. Americans increasingly viewed access to medical care as a necessity and a right. Growing numbers of citizens were becoming accustomed to hospital care made affordable by prepaid insurance plans and the wartime federal Emergency Maternity and Infant Care program.4,5 Physicians who had been rushed off to war now wanted hospital-based specialty training, and GI Bill benefits made doing a residency economically feasible. All of this contributed to a pent-up demand for new and improved hospitals and expanded medical service.

Providing enough new and upgraded hospitals was beyond the economic capacity of most communities and even most states. With support from the usually anti-government American Medical Association, Congress passed the Hill-Burton Hospital Survey and Construction Act in 1946, channeling an initial $375 million in federal funds over five years into hospital construction. Later, the program was amended to include funds for construction of outpatient clinics, public health centers, and long-term care and rehabilitation facilities.6,7 Hill-Burton required matching funds from states and localities based on the state’s per capita income. Minnesota received more than $38 million in federal aid from 1948 through 1962 for construction of 117 health care facilities costing $124.3 million.6,7

Just as important was the expansion of Blue Cross and other commercial pre-paid hospitalization plans. Nationwide, the number of Blue Cross subscribers grew from 700,000 to 20 million between 1937 and 1945; by 1945, an estimated 40 million Americans had some sort of health and accident insurance.8 In 1947, the Minnesota Medical Association (MMA) developed a Blue Shield pre-paid plan to cover doctors’ bills. Blue Shield did not fully cover all
physician services, but the Minnesota plan was more comprehensive than plans in many other states. The framers recognized that because 50% of the state’s population lived in rural areas and because Workmen’s Compensation laws did not cover farmers, the plan would have high utilization rates in outstate areas.

Additional hospital capacity and the ability to pay for care through insurance required additional health care personnel, especially doctors. Initially, Minnesotans did not appear to have been swept up in the panic over a shortage of rural physicians after the war, perhaps because the doctor-to-population ratio in the state exceeded that of most other rural states. As late as 1963, Minnesota ranked 12th in the United States in terms of physician supply, having 145 doctors per 100,000 population (about 1 for every 690 people), although that ranking dropped to 23rd when interns and residents were subtracted. Neighboring South Dakota ranked 49th with 73 doctors per 100,000 population. Isolated semi-rural Minnesota counties with at least one town of 2,500 or more actually had a higher ratio of physicians per capita than the state as a whole.

The University of Minnesota Medical School did increase its class size in 1948 and 1949 to an average of 125, but that was in response to demand from qualified applicants as much as to shortages in “certain areas.” Available hospital residency positions expanded even more rapidly, from 66 before the war to 217 in 1946. That number was still inadequate to meet demobilized physicians’ demand for specialty training. The desire for specialty over general practice was perhaps a larger portent of problems to come for rural health care in the state than was the absolute number of physicians.

**Medicare, Medicaid and Medical Schools**

The establishment of Medicare and Medicaid in the mid-1960s again plunged the nation into a new round of anxiety about a shortfall of health care professionals. The University of Minnesota Medical School

---

**Minnesota and the Kansas Rural Health Plan**

The status of the physician workforce in Kansas was typical of that in most rural states in the late 1940s. Older physicians who had held down the fort in rural areas during the war were retiring or dying, and returning veterans were not lining up to replace them.

Representatives from small communities deluged the new 32-year-old dean of the University of Kansas Medical School in 1948 with letters seeking doctors. Dean Franklin D. Murphy felt the public pressure and had a brainstorm: He devised the Kansas Rural Health Plan to solve what he defined as the most pressing problem of rural health in his state—a shortage of physicians.

Not surprising, the first part of the three-part $4 million plan called for the expansion and modernization of the medical school, increasing the number of students admitted by 20 per year. The second and third parts were designed to overcome young doctors’ concerns about practicing in rural areas, specifically not being able to use the sophisticated techniques they had learned in medical school and their fear of intellectual isolation. Murphy proposed that small towns build and equip medical offices with laboratories and the up-to-date tools newly trained physicians needed and then allow those physicians to pay the town back over time. That way, young doctors need not be discouraged by the prospect of incurring large debts to establish a modern practice in the country. Isolation could be countered by a comprehensive post-graduate medical education program taught on campus under the auspices of the medical school and the state medical society, with courses lasting from two days to several weeks.

The Kansas Rural Health Plan gained attention among opponents of President Harry Truman’s compulsory national health insurance plan. Murphy’s optimistic claim that small communities could pull together to build clinics and attract doctors fit a medical and political ideology in which the “free enterprise system” could solve the inequities in the health care system without government intervention. One popular magazine touted the plan as Kansas’ answer to socialized medicine. But by the time Murphy spoke to the Annual Meeting of County Officers of the Minnesota State Medical Association in 1951, he had already modified his original proposal, acknowledging that local enterprise might not be enough and that government might have to take a role in providing facilities and even subsidizing health care personnel in low-income areas.

A number of states adopted components of the Kansas Rural Health Plan when crafting their own plans. State health departments, medical schools or medical societies set up informal placement services to match physicians with rural towns seeking doctors. The Kansas and Oklahoma medical schools, among others, developed short mandatory rural preceptorships. Wisconsin, Michigan and other states embraced educational loan programs to encourage medical graduates to practice in a rural community for a set period of time in exchange for loan forgiveness. The Minnesota Medical Association established such a rural scholarship program in 1952 and provided personal contacts and counseling in addition to loans in order to place young physicians in rural Minnesota communities.

**REFERENCES**

1. Franklin D. Murphy, M.D., 1948-1985. Faculty Files. University of Kansas Medical Center Archives, Kansas City, Kansas.
asked the Board of Regents for permission to expand its class size. Given the escalating cost of educating a physician and the eight-to-10-year training period required before any increase would be realized, the Regents reacted cautiously. With a grant from the Hill Family Foundation, they studied the need for medical and dental providers in Minnesota, North and South Dakota, and Montana (the three states in the region that lacked four-year medical schools and regularly sent medical students to Minnesota). They concluded that an increase in class size from 150 to 200 students a year was reasonable based on the falling physician-to-population ratio in Minnesota. (At the time, Minnesota-trained doctors were migrating to the sunnier climes of California and the Pacific states at a more rapid rate than physicians trained elsewhere were moving into the North Star state.) The investigators argued that increasing output alone, however, would not meet the demand for medical care. “The prime felt need in Minnesota and the rest of the Upper Midwest is for family practitioners,” they concluded. As University of Kansas medical school dean Franklin Murphy, who had proposed a comprehensive plan for increasing the supply of physicians in his state, pointed out in 1951, no technique or plan would distribute physicians to underserved areas if there weren’t enough physicians overall (see “Minnesota and the Kansas Rural Health Plan, p. 39). Minnesota not only had to produce more physicians but also had to produce the right kind in order to meet specific needs.

This was consistent with the demands of the Minnesota Academy of General Practice and representatives of a national movement calling for a recommitment to producing primary care providers, particularly for rural practice, through the development of family practice departments in medical schools. The percentage of physicians in general practice in Minnesota had declined from 62% in 1940 to 37% in 1965. Specialists clustered in the cities or large trading centers, leaving a countryside ever more sparsely populated with physicians. Moreover, a number of studies comparing the productivity of general practitioners and specialists demonstrated that general practitioners saw more patients per week and worked more weeks per year than specialists, including primary care specialists such as pediatricians and internists. As the proportion of general or family practitioners relative to specialists in the state declined, more doctors would be required to provide the same amount of care because the specialists who were replacing those generalists would likely see fewer patients and only for a specific problem.

The period between 1965 and 1975 can be seen as a time of tremendous investment by private and public agencies in the idea that with information and planning the nation’s health care needs could be met efficiently, economically and equitably. The Hill Family Foundation’s Upper Midwest Health Manpower study was one of three done in the state between 1965 and 1969; the Minnesota House and Senate commissioned two others exploring the need for a second medical school. At the same time, health planning in Minnesota was being funded through at least three federal programs: the Hill-Burton Act, the 1966 Comprehensive Health Planning Act, and the 1965 Heart Disease, Cancer and Stroke Amendment that established Regional Medical Programs. Millions of dollars poured into the state to support the development of integrated health care systems, especially in underserved areas.

The University Regents acted on the recommendations that came out of the three studies. In 1968, with a dedicated appropriation from the Legislature, the medical school established first a division and then, a year later, a department of family practice and community medicine. In 1970, the medical school class size was increased to 227, with 60 more students added under the federal Physician Augmentation Program.

The medical school and state government responded in other ways to concern about geographic maldistribution of physicians. The Minnesota Senate’s study showed that assuring “the people of Minnesota adequate medical care services when and where they are needed” was more important than establishing a second medical school, although they did conclude a second school was needed. The goals for the resulting two-year medical program in Duluth and the new Mayo Medical School in Rochester were to have 65% of the new graduates go into primary practice and to ensure adequate distribution of physicians in underserved areas.

The promises of primary care and geographic distribution proved to be pure rhetoric, as there were no mechanisms to accomplish that. One hope, based on studies of residency that showed a significant proportion of doctors took up practice near where they had done their residency, was that expanding the sites of medical training beyond the Twin Cities would lead to a wider geographic distribution of physicians. Planners apparently saw no irony in expanding to Rochester, which already had the highest number of doctors per capita in the state, if not the nation, because of the Mayo Clinic. The University tried to speed up its physician production by establishing an accelerated three-year medical degree program for 45 students per year (about 20% of the class). It also provided an anchor for the neighboring rural states by accepting an increasing number of transfer students and contracting with the University of North Dakota to provide clinical training for 35 students. By the mid-1970s, the third-year medical school class averaged 335 students.

**Loan Forgiveness and RPAP**

Because of a growing population and increasing demand for medical and hospital services, the national concern in the 1960s and 1970s was with an absolute shortage of physicians, especially in primary care. In Minnesota, where the rate of population growth was only half that of the country as a whole, the greatest concern continued to be the distribution of physicians by geography and specialty.

The quantity of physicians could be manipulated through medical school admissions and opening the borders to international medical graduates, but placing doctors in poor rural or urban areas relied
on persuasion. The MMA established a loan program in 1952 in order to encourage medical school graduates to consider rural practice. In 1973, the state replaced the MMA as the funder, offering medical student loan forgiveness after three years of rural practice. The Legislature hoped to place 100 new physicians in rural Minnesota with an investment of $2.5 million in public funds. To encourage the permanent transplantation of young doctors in the countryside, the loan program gradually expanded the definition of “rural” to include communities of up to 6,000 residents and encouraged the establishment of group practices, factors intended to mitigate the isolation and overwork that drove physicians out of rural practice. Realistically, the program’s administrators acknowledged that all some communities could hope for was a series of physicians staying long enough to complete their service. Although that discouraged continuity, having physicians come and go was still better than having no physician at all.23,24

The University of Minnesota Medical School incorporated family practice prominently in its curriculum and deliberately admitted more students from nonmetropolitan counties. It also added an elective six-week rural preceptorship, similar to ones offered by medical schools in Kansas, Oklahoma and Michigan.25 These efforts led to a much more ambitious endeavor: the establishment of the Rural Physician Associate Program (RPAP) in 1971. RPAP was an extension of the preceptorship idea. Medical students were placed in a rural community with a primary care practitioner for nine to 12 months. It not only exposed students to rural practice and built their confidence by allowing them increasing responsibility for patient care, it also fostered participation in the community and encouraged the medical student to bring his or her family along by offering a $10,000 stipend—quickly renamed a “scholarship so that it does not appear that the University is paying students to go to school.”26 Since its inception, an average of 33 third-year medical students have chosen to participate in RPAP each year, and approximately 50% of former RPAP students are practicing in rural sites today.27 Much has been written about the success of RPAP’s immersion model for producing physicians who choose to practice family medicine, who work in rural areas and who stay in Minnesota.27-29

Problem Still Not Solved
By 1981, Minnesota researchers found the state had met its goal of training more physicians. Because of the national increase in output of physicians, more were staying in the state to practice; that, combined with slower-than-anticipated population growth in Minnesota, resulted in the population of physicians growing six to eight times faster than the general population. Some were even predicting that a surplus of physicians might exist by 1990.

Although differing definitions and counting methods across studies made it appear that an extraordinarily high number of medical students were choosing primary care careers in the late 1970s, other specialties were growing at a more rapid rate, and the ratio of primary care physicians to population continued to decline. Curiously, the researchers involved in the 1981 study said they had not examined data on how many young physicians were practicing in rural Minnesota, nor could they assess whether the 1960s manpower studies’ goal of providing “adequate availability of physician services to all our citizens” had been met. Still, they believed that the anecdotal evidence indicated improved geographic distribution and “appropriate levels of access” to care. When combined with the greater productivity of primary care physicians, they speculated, there may have been a greater increase in patient contact with primary care physicians in rural areas than with specialty care physicians in urban areas.9 Their conclusion carried a caveat: “It is unreasonable to expect universal equity in the distribution of goods and services in an exchange economy, but the progress toward socially responsible goals of access to physician services has been impressive.”

RPAP Director John Verby issued a rebuttal to the researchers’ 1981 article in Minnesota Medicine, noting that the authors failed to distinguish between family practitioners and other primary care practitioners and ignored “Jackson, Ivanhoe, Baudette, Warroad, Tracy and other towns” that had a visible need for family practitioners.30 Two decades later, a study upheld Verby’s contention, revealing that RPAP students who chose family practice were more likely to go into rural practice than those who chose other primary care specialties (pediatrics, internal medicine, medicine/pediatrics), the majority of whom ended up in urban settings.27

To a letter written in 1975 to Sen. Edward Kennedy, then a member of the U.S. Senate Health Subcommittee, University of Minnesota Medical School Dean Neal L. Gault Jr. appended an 11-page summary of the medical school’s efforts to resolve the geographic maldistribution of physicians. Gault expressed optimism that there would be an “eventual favorable effect of this great endeavor on the physician shortage problem in Minnesota and the Upper Midwest, especially in a renewed and expanded emphasis on the role of primary care physicians in health care delivery.” But he cautioned that most efforts listed were purely voluntary and that mandatory service requirements could be fulfilled in an urban family practice clinic. Although more graduates were staying in Minnesota and the Upper Midwest, there was no reason to assume that they would practice in rural areas.25

Gault later wrote Kennedy that if we characterize rural health care as a “crisis,” the nation should respond accordingly. He advocated regionalization of health care, modeled on rural school consolidation with more centralized control. “Of course, the educational system did not have to overcome a well-established and costly private enterprise [sic] but with proper planning and incentives I do believe this nation will respond…” Gault called for a national plan to answer the immediate and long-range “health care needs of our people.”
Conclusion
Like the introduction of Truman’s national health insurance plan, Medicare and the Clinton Health Plan, the passage of the ACA has stirred heated political debate about entitlement to medical care, who pays for it and the role of government. In the last 70 years, contention over these questions has resulted in federal health policy that is tied to the private medical marketplace, sending public funds into private enterprises.

The government programs of the 1940s through the 1970s were ambitious efforts to address needs in terms of the health care workforce, health care facilities and access to care, but they did not represent the kind of comprehensive plan that Dean Gault proposed for meeting the nation’s health care needs. The ACA follows the pattern of its predecessors: It addresses individuals’ access to health insurance in the private marketplace; but it does not provide universal coverage. More insured citizens no doubt will increase the demand for medical services. Targeted programs can increase the supply of physicians, but there is little historical evidence that the market can resolve inequities in the availability of care and the way it is delivered, especially for rural and other underserved populations. MM

Jennifer Gunn is an associate professor and director of the Program in the History of Medicine at the University of Minnesota.

REFERENCES
21. University of Minnesota Medical School Medical Student Enrollment Projections December 10, 1974. Box 9, Medical School Records, University of Minnesota Archives, Minneapolis, Minnesota.
26. Minutes of the Board of Regents of the University of Minnesota. Health Sciences Committee, November 12, 1970. The word “Health” in the program name was later dropped.