



Rural Research Focus: Rural Physician Shortages

by George E. Wright, PhD, C. Holly A. Andrilla, MS, and L. Gary Hart, PhD

According to a new experimental model created by researchers at the University of Washington, it's essential to understand how many physicians a rural community actually can support before instituting any policies to remedy shortages.

In the early 1990s, an entire television series was built around the premise of a New York City-trained doctor going to practice medicine in a remote Alaska town in order to have his medical school loans forgiven (*Northern Exposure*, 1990–95).

This fictional series played on the well-known fact that underserved rural communities have long had difficulty attracting physicians. These communities report losing out in the competition for physicians because of disadvantages such as isolation, limited health facilities, or limited employment and education opportunities for their families. Communities also confront market realities that limit the income potential of physician practices. A number of policy-based incentives, including loan forgiveness, stipend payments, and long-term subsidies, have been used in attempts to remedy these problems.

According to new research from the WWAMI (Washington, Wyoming, Alaska, Montana, and Idaho) Rural Research Center at the University of Washington, one of six centers supported by the Federal Office of Rural Health Policy, making the right policy choices depends on a better understanding of various rural communities' economic capacity for supporting primary care physician practices.

Health Professional Shortage Areas (HPSAs) are officially defined as communities in which there are (among other criteria) more than 3,500 residents per primary care physician. But researchers George E. Wright, PhD, C. Holly A. Andrilla, MS, and L. Gary Hart, PhD, created an experimental model for Washington State that went beyond physician-to-population ratios; realistically, they asked, how many primary care physicians could establish an economically viable practice in the community in the first place?

Modeling Practice Income Potential

The researchers created a simulation model that projected the practice income available for primary care physicians in 135 rural towns in Washington State. In estimating a town's market share, they looked not only at the number of residents but also at the likelihood of competition from medical service providers in nearby communities. They used this model to compare the number of full-time-equivalent (FTE) physicians who could potentially be supported by a community with its actual FTE physician supply.

The researchers found that their model debunked the widespread assumption that rural physician shortages are predominantly problems of what they termed "ambiance," meaning that the communities are simply too isolated or undesirable to attract physicians. Instead, they found that an even more pressing problem was that underserved

towns are “demand-deficient”—too small, too poor, or too disadvantaged in geographic competition to support sufficient viable physician practices.

The researchers discovered that this demand constraint was particularly true of many towns in HPSAs. They simply did not have the economic wherewithal to support more physician practices, even though physician population ratios indicated they are needed. In light of this fact, simply adding more physicians to remedy the shortage would not be advisable, the researchers noted, because, given the economic constraints, the model indicated that they would have great difficulty succeeding without subsidies.

Other key findings included the following:

- **Overall, physicians are rational decisionmakers.** In general, a town’s predicted economic potential was an accurate indicator of how many physicians had chosen to practice there.
- **Practice income potential varied dramatically even among towns of similar populations because of the pull of competing locations for primary care.** Towns located near larger rural centers often had many of their patients “siphoned off,” thereby lowering their capacity to support physician practices.
- **Most towns with a physician supply markedly below capacity are small; but that is because most rural towns are small.** Larger rural towns, particularly those near metro areas, are more likely to have below-capacity physician supplies.

Implications for Policy and Planning

Based on their model, the researchers concluded that a one-size-fits-all approach to physician shortages in rural communities does not make sense. Rather, policy must take into account whether the community is “demand deficient” and thus lacks the capacity to support more physicians.

For example, some communities use a one-time signing bonus to overcome physicians’ initial reluctance to locate in an underserved area. But as the researchers found, the problem was often not what they termed an “ambience deficit” but instead a demand deficit: The community did not have the economic capacity to support the physicians that were needed.

In such cases of demand-deficiency, the researchers argued, continuous subsidies are required to make up for an insufficient volume of paying patients. Current examples of such policies include enhanced Medicare payments for certified Rural Health Clinics and the 10 percent Medicare supplemental payments for care provided in an HPSA, while problems related to “ambience” are more appropriately addressed through training, recruitment, and retention programs.

In sum, the researchers concluded, modeling potential physician income in this way could assist in more realistic planning for communities, providers and policy makers and act as a basis for assessing the actual capacity of a community to support the desired number of physicians.

To receive a copy of “How Many Physicians Can a Rural Community Support? A Practice Income Potential Model for Washington State,” contact George E. Wright, PhD, at the WWAMI Rural Health Research Center, (206) 685-0401.

