Does Poor Broadband Deter Telemedicine Adoption?

A new study finds that inadequate broadband may be a major reason for low adoption of telemedicine. Other experts argue that even slow broadband can help build rural health care capacity.

By Masha Zager / *Broadband Communities*

Access to health care is a critical problem in many rural areas of the United States. Few physicians choose to practice in rural counties, according to the National Rural Health Association, yet the rural population is, on average, older and more in need of medical care. Census Bureau data show that 18 percent of the rural population is age 65 or older, compared with 13 percent in urban areas. Rural clinics and hospitals are consolidating or closing, leaving people to drive long distances to see doctors.

Policymakers are counting on telemedicine to fill in the gaps. Patients have access to a wider array of health services if they can consult with doctors from home or a local clinic. Telemedicine has been proven effective for many types of medical care, but its adoption is still limited.

To find out whether reliance on telemedicine is justified, Coleman Drake of the University of Pittsburgh and three other researchers examined how many people had access to broadband that supports video-based doctor visits. They used the National Broadband Map to measure each county's access to broadband (as defined by the 25 Mbps / 3 Mbps standard) and the Centers for Medicare & Medicaid Services (CMS) classifications to determine each county's access to health care. Their results were published in May in the Annals of Internal Medicine, a publication of the American College of Physicians.

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Drake and his colleagues found parallels between broadband access and health care access – especially access to psychiatric care, for which telemedicine is very suitable. Overall, counties with adequate access to primary care physicians had 82 percent access to broadband, but counties with inadequate access to primary care physicians had 79 percent access to broadband. Counties with adequate access to psychiatrists had 83 percent access to broadband, and counties with inadequate access to psychiatrists had only 65 percent access to broadband.

In the most remote counties, which CMS calls "counties with extreme access considerations," the gaps were much starker. In these counties, where 4 million people live, CMS considers health care access adequate if a patient can drive to the office of a primary care physician in 70 minutes or to a psychiatrist in 110 minutes. Using these lax standards, counties with adequate access to primary care physicians and psychiatrists had 62 percent broadband coverage; counties with inadequate access to primary care physicians had 39 percent broadband coverage; and counties with inadequate access to psychiatrists had 49 percent broadband coverage.

Consequently, the patients most in need of telemedicine were least likely to have access to broadband that can support telemedicine.

The researchers acknowledge three limitations in their study. First, health care access may be even worse than estimated because not all providers within drive-time limits may be able to see new patients or accept their insurance. Second, broadband access may be better than estimated if cellular networks can be used for video consultations. Third, rural clinics may have broadband access even if many

county residents do not. The authors also acknowledge that insurance reimbursement for telemedicine, particularly home-based telemedicine, needs to be improved.

Nevertheless, the authors conclude that the lack of broadband may well limit the potential of telemedicine. They suggest that "cost-benefit analyses of broadband and cellphone infrastructure expansions thus should consider the benefits of telemedicine and the pathway to care it provides."

TELEMENTORING BUILDS CAPACITY

In the same issue of the Annals of Internal Medicine, Bruce Baird Struminger and Sanjeev Arora of Project ECHO at the University of New Mexico published a rebuttal to the Drake article. Project ECHO runs a video-based telementoring program that supports local physicians and other health care workers who care for rural patients with complex conditions.

These authors argue, first, that the 25 Mbps / 3 Mbps standard is unrealistically stringent. They state, "Many cloud-based high-definition videoconference platforms function fully on a modest bandwidth of just 1.5 Mbps." This statement seems debatable, to say the least; low-bandwidth connections tend to be unreliable, and significant anecdotal evidence exists to show that telemedicine visits are less effective when interrupted by technical glitches.

Second, they emphasize that telemedicine involves capacity building as well as direct doctor-patient interaction. The purpose of telemedicine is to allow patients to be cared for close to home, and this goal can be achieved through telementoring, which trains local doctors to improve the quality of care in their communities. Telementoring programs tend to require less bandwidth and less reliable connections than virtual doctor visits. Struminger and Arora say that about 40 percent of the counties with extreme access considerations have ECHO programs in place.
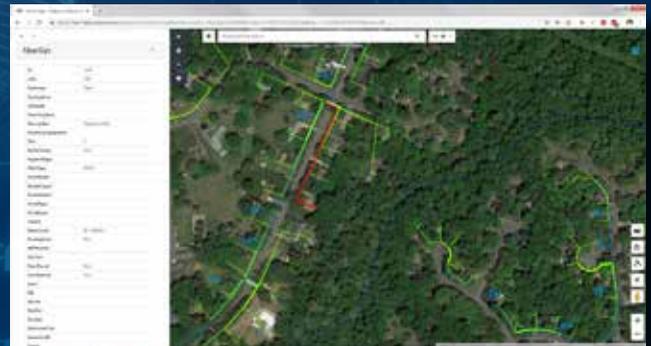
Finally, like Drake and his colleagues, Struminger and Arora argue for changes in the insurance reimbursement rules and other bureaucratic impediments to virtual doctor visits. They also urge the use of community health aides in areas that lack health care professionals. They conclude, "Implementing these recommendations would go further than increasing bandwidth toward transforming access to health care in rural America." ❖

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