

**PREPARED TESTIMONY
BEFORE THE NEBRASKA PUBLIC SERVICE COMMISSION**

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Meeting the Needs of Rural Communities Through Community Hospitals

I appreciate this opportunity to share with the Nebraska Public Service Commission research findings related to the potential contribution of telehealth to the well-being of Nebraskans and Nebraska communities, and current roadblocks to widespread use of telecommunications technology by health care providers. My testimony is based on studies completed by the Nebraska Center for Rural Health Research (NCRHR), which is located in the Department of Preventive and Societal Medicine, College of Medicine, University of Nebraska Medical Center. The NCRHR was established by the University of Nebraska in 1988 for the purpose of facilitating multi-disciplinary, including multi-campus, research related to the organization, delivery, and financing of health care services in Nebraska, with a special focus on meeting the needs of the residents of our 87 non-metropolitan counties. The NCRHR works collaboratively with other agencies and organizations in Nebraska to collect and analyze data, including the biannual publication of a health data book that tracks changes in population, vital statistics, health care delivery, and health finance in the state. The studies from which this testimony are drawn were completed as special projects under cooperative agreements with the Nebraska Office of Rural Health and the Nebraska Hospital Association (the latter supports the studies of the economic impacts of health care in Nebraska communities, and the former has supported both that project and the assessment of

telehealth in Nebraska).

Special note: Two terms are used to describe using telecommunications in health care: telehealth and telemedicine. The latter is restricted to services that involve patient care, and the former is defined more broadly to include any use of telecommunications technology by health care providers (individuals and institutions).

In many small rural communities in our state the local community hospital is the anchor of health care delivery. It provides leadership in acute care services in the area, including information systems management for its services and sometimes for services provided by other entities including emergency medical services. The new rural hospital flexibility program in Nebraska, supported in part through a federal grant, has enabled our smallest hospitals, designated as Critical Access Hospitals (CAHs) to operate on much more solid financial ground than previously (thanks to a change to cost-based payment from Medicare), and to consider new ventures that include different mixes of services, participation in quality improvement programs, and changes in management practices. Through this program, which the NCRHR is evaluating, the state has invested in a number of hospital networks in the state that can facilitate continued improvement in health care services in their communities. Creating a communications network that links them with high speed capacity would enhance these efforts.

There exists a great deal of potential for using high speed telecommunications to improve health care delivery in rural communities. In a survey of physicians in rural Nebraska completed in 2000, the NCRHR learned that among those not already using telehealth services (broadly defined to include education, communications about patient care, and patient care) 68% said they would use interactive video if was available in their offices. Over 80% of that group said they would be interested in participating in grand rounds or CME via telehealth. When considering

uses of telehealth in patient care, there were clear differences between physicians who had personal experience with telehealth and those without such experience. For example, over 90% of those with experience believed that telemedicine might be effective for chronic condition management, compared to 70% of those with no experience. Similarly, a majority of those with experience believed telemedicine could be effective for emergency care, contrasted with 41% of those without experience. A majority of all physicians replied that telemedicine might be effective for preventive services, chronic condition management, post-surgical follow-up, home health care, and improvement in continuity of care. While there are opportunities to expand the use of telehealth, both to meet the professional needs of practicing physicians and the health care needs of patients, doing so would require engaging physicians who are not yet prepared to exploit the potential of new technology in telecommunications. Nearly 3/4 of those not using telehealth services felt they did not know enough about telemedicine technology and applications to use telemedicine in their practices.

Expanded, effective use of telehealth will occur only if health professionals not already in a network such as the Mid-Nebraska Telemedicine Network (MNTN) use new technology. For that to occur, proposed uses should meet their needs. From our survey we know that doing so means using interactive video and making programs in continuing education available in a convenient manner. Another use that would appeal to physicians once they are comfortable with the technology might be follow-up care that involves specialists located outside the community – 60% of the physicians in the MNTN report such use. According to hospital administrators who were surveyed at the same time as physicians, of the hospitals referring patient services through telemedicine 39% (for each type of service) used the system for teleradiology, clinical consultation and second opinion, and management of chronic conditions. In focus group

discussions with health care professionals and administrators in two parts of the state (South Central and Northeast), we were able to learn in more detail about the types of services for which telehealth would most likely be used. For all focus group participants, including those not currently using telehealth, mental health services would be a leading use of the system. This is related to the continuing shortage of mental health providers in rural communities and to the confidentiality associated with telemedicine (others in the community would not necessarily know that a visit to the hospital or clinic is for mental health services). Another frequently mentioned use would be for patient support groups (members of the group could be in different locations) such as arthritis, cancer, and fibromyalgia support groups.

All of these potential uses could occur in community hospitals. Common rooms in those facilities can be used for continuing education during the day and support groups in the evening. A separate room could be used for patient consultation (equipment can be portable). As systems are increasingly used in patient care, telemedicine will impact communities because patients will remain in their local communities for treatment, thereby improving the quality of care (consumer satisfaction) and increasing the economic impact of the local health care system (keeping health care and other dollars in the local community).

The potential exists for using high speed communications capacity to improve health care delivery in Nebraska's rural communities by linking their hospitals to larger systems. Two specific financial roadblocks need to be overcome to realize the full potential of the technology. First, line charges for the hospitals need to be affordable. Focus groups participants in our study reported that the current \$500 to \$600 per month (direct cost to them) was too expensive. We were not able to obtain a firm figure that would be affordable, only that the threshold considered to be "expensive" is quite low. A second, and related issue is that patient services provided through

telemedicine are not considered to be eligible for reimbursement by many payers, including Medicare. Medicare reimbursement policy is changing, for certain services and in certain places (health professional shortage areas). However, we were unable to determine how widely the new \$20 facility would apply to services that might be delivered in Nebraska. The “bottom line” of these two issues is that if monthly line charges were low, minimal benefits such as continuing education and patient support groups might be sufficient reason to install and operate new systems. Without affordable monthly charges, there is little chance for expansion of telehealth services to small rural hospitals. Once equipment is installed, if the experience in the MNTN is informative, use will increase and pressure will build for reimbursement, generating more operating revenues and benefits to the communities. Expansion of activities in the local community will generate economic activity in that community. For example, for every job added to health care in Perkins County, and additional .36 of a full time job is also created, and for every dollar of income in health care an additional \$.40 of income is generated elsewhere in the community.

In conclusion, as of 2002 there is only a limited amount of health care delivery in Nebraska involving the use of high-speed telecommunications capability. However, we have established a demand for at least what we could call “first level” use – continuing education for health care professionals. Other uses are likely to follow once interactive video systems are in place, given the uses we are seeing now by the MNTN and the acceptance of possible uses by physicians more broadly. Nothing will happen, however, until initial steps are taken to install affordable telecommunications systems that link local community hospitals with larger networks, including linkages to the institutions offering continuing education.

References

- Diener A, Mueller K, and Fletcher J. "Assessment of Potential Uses of and Needs for Telehealth Services in Rural Nebraska." *PRO1-1*. Nebraska Center for Rural Health Research. January 26, 2001. www.unmc.edu/rural
- Chen L-W, Rasmussen, D, and Mueller, K. "Health Economic Profile for Perkins County, Nebraska." *Nebraska Rural Health Works*. Draft. November, 2002.

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Potential for Education, Research, and Service to Rural Providers and Communities

If all small rural hospitals were connected to regional hospitals and in turn to Omaha institutions, the University of Nebraska Medical Center would have increased opportunities to fulfill its mission: “to improve the health of Nebraska through premier educational programs, innovative research, the highest quality patient care and outreach to under-served populations.” Innovative programs already underway at UNMC would be enhanced by an ability to extend programming to rural communities through the use of high-speed communications.

Several of the educational programs at UNMC are committed to delivering their educational curriculum through the use of distance education strategies, most of which require the use of broadband technology. These programs are designed to help health professions students remain in their communities during training, which increases the likelihood that they will remain there as practicing professionals. Thus, this activity meets educational objectives, but perhaps even more importantly, improves service delivery in rural areas. The College of Nursing enrolls students from other states in the region by using internet-based educational strategies. The School of Allied Health is an active participant in distance education efforts, and the new Masters of Public Health degree program is committed to offering its core curriculum through distance education. The College of Medicine uses rural rotations and clerkships as part of its training, and those efforts would be enriched if interactive video were available in a convenient location in rural communities. Distance education programs at UNMC are recognized nationally for the use of

cutting edge technologies but the bandwidth in many rural areas of the state is not sufficient to deliver quality programs. Greater bandwidth enhances the quality of the product delivered to the state's rural communities and therefore improves the educational experience for rural students and increases the likelihood that they will enroll in health professions programs and complete their training.

Connectivity through high-speed lines would also create new opportunities for UNMC's efforts in continuing medical education. UNMC currently provides approximately 50 programs per year with over 500 physicians in attendance in several cities throughout the state. These programs could be delivered through interactive video were that service available, and potentially reach even more communities and more physicians. Additional special programs could be delivered over the same system, including training and information regarding bioterrorism, to an audience that includes public health agency staff, medical lab staff, pharmacy staff, and hospital and clinic staff. If the communications network included educational institutions, a virtual network in rural health could be used to integrate efforts related to training, recruiting, and retaining a highly-trained and continuously educated work force.

Researchers can also benefit from a communication network that includes all Nebraska hospitals. The exchange of data for multi-site research would be enhanced and that fact may induce researchers to include rural sites in their projects. Interactive video would facilitate creating multi-disciplinary, multi-site teams of investigators, which would mean opportunities for participation in original research for students and professionals in rural communities. Such collaborative projects could have direct impact on patient care. For example, small rural hospitals could, through high speed communications, participate in studies of innovative methods to reduce the length of time persons with chronic conditions need to be in the hospital. Such a

project may require demonstrating a new approach to using information that can be supported by the computer systems at the teaching hospital, UNMC, and then applied to the rural hospital by, in real time, transmitting information and directions for changes in procedures to the small rural hospitals.