



Rural Nebraska

HEALTHCARE NETWORK

A regional system of care provided locally.

The Rural Nebraska Healthcare Network (RNHN), a non-profit healthcare network with nine member hospitals focuses on *A Regional System of Care Provided Locally*. Members include: Box Butte General Hospital, Chadron Community Hospital, Gordon Memorial Hospital, Kimball Health Services, Morrill County Community Hospital, Perkins County Health Services, Regional West Garden County, Regional West Health Services, and Sidney Regional Medical Center.

The members of the RNHN provide care in the Panhandle, a large geographic region with distance presenting the greatest challenge of travel time, transportation costs, and a shortage and uneven distribution of health care professionals. The population is older and poorer with higher percentages of poverty than Nebraska as a whole. Residents face higher rates of obesity, heart disease, chronic lung disease, diabetes, and tobacco and alcohol use than do Nebraskans, in general.

In 2006, the Panhandle was a region in need of improved access to locally provided health care. RNHN recognized that healthcare technology, such as electronic records, health information exchange and telehealth would be key to improving local access, and the infrastructure to support healthcare technology did not exist in western Nebraska.

In 2012, RNHN, through the Federal Communications Commission Rural Health Care Pilot Program, built a broadband fiber network that provides the back bone for all RNHN projects and services. The fiber network, a 36 fiber redundant ring in western Nebraska connects 10 hospitals and their associated clinics and leased circuits connect an additional 13 hospitals in central/eastern Nebraska. There are also long haul circuits to Omaha NE and Denver CO.

The network is connected to the Nebraska Statewide Telehealth Network, and has direct access to Radiologists, Laboratories, Clinical Pharmacists, and other specialists nationwide. The facilities transmit medical records, data, patient files, radiology, billing and other important patient and business related information.

Collaboration is key in the Nebraska panhandle with collective intent to assist local communities in maintaining local resources at the highest-level possible. RNHN enhances the regional system of care by providing the RNHN Broadband Fiber Network, educational resources, networking opportunities, and telehealth support. RNHN is engaged in many ongoing projects with each project structured to include workgroups and committees comprised of member facilities staff and, where applicable, community partners.

RNHN initially partnered with Mobius Communications in Hemingford. They are dedicated to helping the communities they serve be successful and brought the FCC opportunity to RNHN's attention and assisted with the application process.

Construction of the RNHN fiber network was made possible through a unique partnership with Zayo, a broadband provider. RNHN installed 84 fibers and leased 48 of them on a long-term basis to Zayo. The money that RNHN received from Zayo for the lease was sufficient to cover the RNHN's portion of network construction costs. The Zayo 48 fiber commercial component has been developed by several panhandle communication providers.

The strength and capabilities of the RNHN broadband network are substantial and present a tremendous and indeed lifesaving opportunity to improve patient care. Former Nebraska Governor Dave Heineman said "Most importantly it will allow health care communities the ability to provide a quicker and coordinated response for any event, from a single patient diagnosis to a public health emergency".

Health care providers use the fiber to enhance all aspects of their practice. It enables decision support at the point of care, electronic medical records, transmission of high-resolution images, and patient portals. It sets the stage for telehealth/medicine, health information exchange, e prescribing, and facilitates provider's ability to meet meaningful use standards. While broadband technology is not new, providers now have the ability to take control of it and use it in ways that can be very significant. Access to patient centric information and expert guidance for healthcare providers supports quality improvement for patient care and patient safety.

In support of patient care and safety, the current 2 gbps redundant backbone in western Nebraska provides near 100% reliability over the vast geography. It allows images to be sent in real time and the transfer of files in seconds or minutes allowing easier access to patient records and information and the bandwidth necessary to support greater use of telemedicine and telehealth. The backbone capacity, which can be expanded as needed, is allowing member hospitals to provide off site backup and disaster recovery services to each other, thus avoiding the cost of contracting for the service.

In terms of cost savings, RNHN has been able to buy bulk services at reduced rates and has saved \$20,000 in annual telephone charges by having the Regional Emergency Communications system reside on the fiber network. From January through December 2014, for all uses of the telehealth system the nine hospitals saved themselves, their patients, and community partners a combined total of 205,045 driving miles, at a savings of \$114,825. This figure does not include the travel time saved.

As previously stated, the RNHN fiber network backbone, through a unique public/private partnership with a broadband provider, has a commercial component that has been developed by local communication providers. The benefit of the partnership is 3 fold: (1) Zayo maintains the fiber for the RNHN, (2) The lease establishes an income stream that should allow the network to be economically sustainable, and most importantly (3) it provides broadband infrastructure access to businesses, schools and homes in western Nebraska where almost none existed before.

In an article comparing the construction of the RNHN fiber network to the agricultural region of western Nebraska the author stated "Planting optical fiber 4 feet deep may be the seed that yields economic development, which means jobs, local business opportunity and new customers for existing businesses." Building this asset in the mostly rural/frontier region of western Nebraska is a testimony to the commitment the RNHN and its member hospitals have to the communities and people in the region.