

## **Goals and Objectives of the proposed network:**

CommonSpirit Health (“CSH”) is a consortium of hospitals, clinics, off-site administrative offices and data centers in more than twenty states. CSH is seeking to promote care coordination among healthcare providers and advanced technologies through increased utilization of Healthcare Connect Fund (HCF) program funding. This will enable healthcare organizations to maximize their use of health information technology and encourage collaboration in order to serve communities more effectively. In addition, CSH is seeking to:

- Develop an economical broadband network by utilizing the most cost-effective technologies and leveraging economies of scale. The consortium will aggregate the requirements of large members with those of small, often rural, HCPs to drive down per unit costs.
- Simplify network operations to free resources to focus on the primary objective of delivering healthcare, particularly in rural HCPs that may lack the personnel and expertise to maintain complex broadband networks.
- Improve network reliability and insure uptime through Service Level Agreements so that data critical to providing healthcare is consistently delivered.
- Increase bandwidth to move more data quickly and expand the ability to meet healthcare needs.
- Prioritize traffic to enable applications like video consultations between rural areas and urban specialists.
- Enhance security and privacy to prevent the unauthorized exposure of sensitive patient data.
- Enable scalability so that as additional consortium members are on-boarded they can be easily and seamlessly integrated into the network.
- Enhance disaster recovery so that the network will respond robustly in the event of a catastrophe and the consortium members can continue to pursue their healthcare delivery missions.

## **Strategy for aggregating the specific needs of HCPs:**

Currently CSH’s sites operate within regions that are dispersed over a wide geographic area. Each region operates semi-autonomously, making its own decisions regarding information technology and telecommunications. In the current network topology sites within each region connect to a hub. Each of these networks is of unique design using multiple technologies, including MPLS, metro-Ethernet, frame relay, and point-to-point. In some cases, multiple network types are deployed within a single region.

While each site independently pursues CSH’s overall goal of delivering the highest possible level of care, performance suffers because the regions aren’t always able to work together effectively. The lack of coordination hampers the organization both technologically and economically. Without a cohesive network design, distinct units may select different communications vendors, resulting in incompatible technologies or standards. Networks have varying levels of redundancy and diversity, determined primarily by fiscal constraints and availability in the marketplace.

Even when network connections are established the cost in terms of access leasing and personnel with the requisite network management skills can be prohibitive. The whole organization is not aggregating its broadband requirements to drive the best deals with carriers. Additionally the inconsistent and dispersed nature of the network may increase technical personnel requirements, further increasing costs.

The strategy to overcome the balkanization of CSH’s sites is to implement a networking architecture that economically integrates sites regardless of size or location. CSH envisions a network that will span multiple states where CSH operates. The new network will take advantage of CSH’s size, maximizing the number of interconnected nodes, thereby expanding the power of the network. The architecture design will take a total cost of ownership approach, ensuring that while costs locally may be higher, the overall network will deliver improved performance for the lowest possible cost.

The needs of the rural members of the consortium are unique. They may be hampered by a lack of specialist personnel, both medical and technical, as well as limited access to affordable technologies to connect with experts that may reside in urban areas. The network could enhance the ability of underserved HCPs to connect to urban based experts through telemedicine and the transfer of electronic health records. Rural members will also be able to rely on centralized personnel and systems to maintain and ensure security of the network, freeing constrained resources to focus on care delivery. Finally, rural members will benefit from the group buying power of the consortium to realize lower prices than possible if procuring as an individual site.

The envisioned network should be able to accommodate each site’s unique needs, both as-is and in the future. Initially some rural sites may continue with existing broadband access technology, based on technology availability and application requirements. As the needs grow the network will be designed to accommodate the new requirements.

## **Strategies for leveraging existing technology to adopt the most cost efficient and cost effective means of connecting those providers:**

The consortium will pursue a total cost of ownership strategy in the design of the new network, taking into consideration not only initial purchase costs, but also ongoing costs of labor, maintenance, downtime, etc. This strategy means that technologies that are proven safe, secure, and inexpensive may be preferred. This strategy is also a departure from the legacy approach of customized, unique solutions at the region and even site level.

The current consortium's network is highly heterogeneous. Having grown both organically and through acquisition, CSH allowed each region to have autonomy in creating the network for its individual needs. As a result, CSH has network assets in more than twenty states. While the majority of circuits are Ethernet followed by frame relay, MPLS networks are present in twelve states. The network also includes a small number of SONET, ATM, and dark fiber networks. The consortium will leverage existing infrastructure when it is in the best interest of the overall consortium broadband needs as it migrates toward a more integrated, cost effective network.

**How the supported network will be used to improve or provide health care delivery:**

The new network will be used to transmit communications and data that will enhance patient care. CSH encourages cooperation and coordination among its healthcare providers and support staff, however, with so many sites and geographically diverse locations, communications can be problematic. Communication can be further challenged if patient data cannot be securely shared because it is paper based or bound in an information silo. The network enhancements will help to break down the barriers between caregivers to promote collaboration and patient care.

Among the challenges that consortium members face is having the right expertise at the right place; this problem is particularly acute for rural hospitals and clinics. The network will enable the limited resource of expertise to be more equitably distributed via technology. For instance, pharmacists could communicate via video conference with rural pharmacy technicians to confirm medication, dosage, and allergy warnings. Similarly emergency rooms could consult with remote specialists.

Additional applications could include interpretation services, which would help overcome the language barriers between the most underserved patients and their doctors. With the appropriate technology interpreters could be brought virtually bedside to enable communication between doctor and patient.

In addition to communication, the network could also promote more effective use of data. Patient information, including history, lab results, and allergies, could be securely and quickly shared among the doctors who could consult and collaborate for the patient. Similarly, a doctor and remote radiologist could view the same high definition patient image and agree on the appropriate course of action.

**Previous experience in developing and managing health IT programs:**

CSH has more than 80 telemedicine programs that increase access to care for patients, minimize their need to travel to receive specialty care and alleviate health care workforce shortages.

CSH's rural hospitals are using telemedicine to bring specialty care to their patients through real-time, two-way electronic communications. For example, rural hospitals in Minnesota and North Dakota have an experienced clinical pharmacist available 24 hours per day through CSH's Pharmacist Direct service. Through a two-way video and audio link, a pharmacist at the ePharmacist Direct command center in Fargo, ND, can verify the right medication, at the right dosage, is being delivered to the right patient at the right time.

Through CSH's tele-radiology initiative, patients in rural hospitals can have their images read by fellowship trained radiologists hundreds of miles away. For example, a woman getting a mammogram in a small town in North Dakota can have her images read by a radiologist in Des Moines, IA within seconds, and have the results returned to her and her physician in minutes.

**A project management plan outlining the project's leadership and management structure, and a work plan, schedule, and budget:**

The Project Manager will be the lead on the project with review and support from CHC's Director of Telecom Funding Programs, network engineers and other various support staff. The project will consist of the following steps:

- Post 461
- Review 461 responses/bids – within 10 business days after ACSD
- Sign contract for services – within 15 business days after selection
- Deployment will follow the agreed upon timeframe for install/delivery per the contract with the service provider or equipment vendor.

**Budget:**

Contributions will come from the individual HCP's own funds set forth by their organizations' budgets to run concurrently with the length of the vendor's contract(s) with the HCPs.