

Sustainability Proposals of FCC Rural Broadband Pilot Projects

ALABAMA

1) ALABAMA PEDIATRIC HEALTH ACCESS NETWORK (ALPHA NETWORK)

The key step to ensuring sustainability planning is the formation of the ALPHA Network steering committee at the start of the project. This committee will provide direction and leadership for implementing sustainability-planning activities and ensuring that key stakeholders remain involved and supportive of the project beyond implementation. The committee will also coordinate planning activities, collect and analyze information, develop sustainability models, and execute the resulting sustainability plan.

For example, to ensure sustainability of the project, TCHA will leverage the experience from existing telemedicine efforts. Reimbursement for services is a major challenge to offering telemedicine services. Fortunately, progress is noted in both federal and private payer perspective. 38 For example, our telepsychiatry programs is currently being reimbursed through Medicaid. Following similar process, we will move to lead the way for developing reimbursement methods for various telemedicine initiatives particularly to those in medically underserved areas. Future funding opportunities will also be explored, as part of the sustainability plans of the ALPHA Network steering committee.

Activities that may be used as a source of funding for future scalability and sustainability:

Government funding/support

Facility or partner organization operating funds

Other grant funding

Alternative funding/payment for end-users

Community or charitable donations

Private/Public partnerships

In-Kind contributions

Network membership fees

Third-party fees for network use

Subsidization from other revenue generating projects or initiatives

Hardware or software commercialization and sales (unique products developed for project)

In addition, the project will continue to explore opportunities for telehealth activities. As part of its forward looking health information technology vision, TCHA is determined to promote the use of telemedicine as one of its health IT goals. Its Information technology division, together with key stakeholders, will be responsible for managing the project, support

for personnel and equipment maintenance and upgrade. Currently, the telemedicine equipment are managed and maintained by the TCHA Biomedical Division (led by Kelvin Knight). The network and computer hardware needs are being managed and maintained by the TCHA Information Technology division, led by Pam Atkins (Director, TCHA IT Division).

Lastly, by leveraging the existing partnership within the community and the region, and by strengthening the ties to pilot hospitals during the project, the initiative will ensure that participation to future ventures and collaboration will take place.

2) ALABAMA DEPARTMENT OF ECONOMIC AND COMMUNITY AFFAIRS

Once the statewide system design is complete, additional funds will be sought from state and federal sources to implement the statewide network. Participating health entities will cost share in this effort.

3) THE RURAL HEALTHCARE CONSORTIUM OF ALABAMA

The need for bandwidth in the future will continue to grow. Rural hospitals must be connected to keep pace with changes in health care technology. This project offers all four CAHs in Alabama the opportunity to adapt to changing health care technology and services. We anticipate sustaining the network through a combination of additional grants and growth in operating budgets brought about by the ability to generate new business through use of the new telecommunications services.

4) SOUTHWEST ALABAMA MENTAL HEALTH & MENTAL RETARDATION

Each participating Mental Health Agency will be able to continue funding of the network after the initial assistance is provided through the Rural Health Care Pilot program, particularly for the initial upstart one time installation costs which are a major hindrance to implementation without assistance. Having assistance for the upstart cost and the first year of assistance with the WAN and Internet costs will allow the agencies to program future funds to continue this valuable project. Additionally, after the Rural Health Care Pilot funding period, each Mental Health Agency will take advantage of the Rural Health Care Program by filing for assistance annually to provide assistance with funding a portion of the project under the FCC guidelines. The commitment is there on the part of the governing Board of Directors as well as the Directors and their staffs to fully utilize Telemedicine solutions for extending and improving the quality of services. Additional grants will be sought for improving Telemedicine Distance Learning equipment capabilities to expand opportunities to connect with schools in the counties served through this project. Equipment will enable agencies to provide onsite professional development

to teachers, mental health educational services to students as well as face-to-face patient services to students without them having to leave the school campus.

ALASKA

ALASKA NATIVE TRIBAL HEALTH CONSORTIUM

The primary challenges for most healthcare networks across the country are developing and implementing strategies to achieve financial sustainability. Many networks have successfully obtained initial grant funding to initiate their projects, but grant funding is not a long-term solution for network financial sustainability. Recurring revenue streams must be developed to operate and expand network services, and generating a reliable revenue stream is dependent on demonstrating value and benefit to stakeholders and users.

While the incidence of documented return on investment generated by a statewide healthcare network is still limited, a large body of research indicates that health information technology (HIT) can dramatically reduce healthcare costs. All stakeholders will collaborate to define and assess the potential value created by a statewide healthcare network. That value assessment will guide development of an appropriate fee-based model to generate sustainable revenue for this network project.

The eHealth Initiative's Connecting Communities Toolkit defines the following Common Principles regarding finance, incentives, and values obtained from health information exchange (HIE):

1. The HIE functions will be the decision of each individual community-based entity following a thorough evaluation of community-based needs and opportunities for health and healthcare efficiency improvement on a local level. The expectation when choosing these functions is that the entire community will eventually participate.
2. HIEs will need to rely upon a sustainable business model for survival. The sustainable business model will be built upon a combination of prudent resource management and revenues contributed by the stakeholders who benefit from the health benefits and efficiency improvements of the HIE.
3. Incentives—either direct or indirect—are defined as upfront funding or changes in reimbursement to encourage, acquire and use HIT. In order to be effective, incentives—either indirect or direct—should:
 - Engage key stakeholders in the development—payers, purchasers and clinicians.
 - Focus on quality and performance, improved patient health outcomes, the HIT infrastructure required to support improvements and efficiencies, and the sustainability of HIE within communities.

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- Reward the use of clinical applications that are interoperable, using agreed-upon data standards and, over time, require that the interoperability of such applications be leveraged.
- Avoid reductions in reimbursement that would have the effect of discouraging providers from acquiring and using HIT.
- Address not only the implementation and usage (not purchase) of HIT applications but also the transmission of data to the point of care.
- Encourage coordination and collaboration within the region or community.
- Seek to align both the costs and benefits of HIE/HIT and be of meaningful amounts to make a positive business case for providers to invest the resources required to acquire and use HIT for ongoing quality improvement.
- Transition from a focus on reporting of measures that rely on manual chart abstraction and claims data to measures that rely on clinical data sources and connectivity of standards-based, interoperable HIT applications at the point of care.

These principles support the developing framework for the AHCN sustainable business model.

Alternative Sources of Funds

The source of sustainable funding for Alaska Chart Link and the AHCN will come from two main categories:

1. Partner Funding: Partner funding generally represents contributions to a network from governmental or philanthropic organizations. These contributions can either be monetary or in kind contributions. Both federal and state organizations have actively provided grants to HIT networks, EHR and RHIO initiatives across the country. Philanthropic organizations like the Robert Wood Johnson Foundation and the Rasmuson Foundation have also provided significant funding for healthcare network initiatives and other healthcare programs. Partner funding has been key to startup operations for many healthcare network initiatives across the country. One drawback of partner funding is the limited resources, making it generally not suitable to sustain operations. Ongoing revenue streams have also been identified.

Partner funding will be essential during the startup of Alaska HealthCare Network (AHCN) to finance upfront capital and development costs. Early marketing efforts will focus exclusively on securing major governmental and philanthropic sources of funds for both initial and ongoing requirements.

2. Subscription Fees: Subscription fees are a very straightforward approach to generating revenue and they represent a manageable and preferred alternative. Subscriptions do not discourage usage since fees charged are independent of utilization. Subscription fees are challenging because they require a strong understanding of startup and operating costs. Developing a fair distribution of fees across various users must be aligned with the benefits those users will receive in order to cover network costs. Subscription fees can be applied to both payers and providers.

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- Purchasers of healthcare services (payers) will ideally recognize participation in the AHCN as an excellent opportunity to improve the wellness of their constituents and to reduce healthcare costs. For the network, payers represent a significant revenue opportunity—a reasonable number of strategic contacts and relationships promise to generate large revenue streams representing approximately 85% of the insured population. Soliciting subscription fees in this aggregate fashion will:

- Avoid overhead for billing/collecting small individual fees across a large consumer population,
- Allow payers and healthcare providers to market network access as another service offered to their clients, and
- Generate a predictable income source for the network.

- Providers will both contribute and utilize the data exchanged through the AHCN. As information exchanged increases, a greater positive impact to healthcare is achieved. Accordingly, the network should strongly encourage data contribution and usage by not overly burdening providers to cover operational costs. Providers will benefit from using the network, and subscription fees will align with benefits received. Payers and providers will be asked to contribute annual lump sums (perhaps payable monthly) based on the number of constituents they represent. A tiered revenue model will be developed for healthcare provider subscription fees categorized as:

- Hospitals and clinics
 - Large facilities and health system
 - Medium facilities
 - Small facilities
- Clinicians and clinician groups
- Individuals/Payers/Employers

Such a revenue model will establish inflow expectations and distribute expected revenues proportionately across providers of various sizes.

Participation from physicians across the state will be key to the network's success. Physicians are crucial because they control a wealth of healthcare information for Alaska residents. Decreased costs and improved quality of care will be achieved as more clinicians access the network routinely during care delivery.

Connectivity to the network by other clinicians will also be critical. A comprehensive marketing, communication and training program will be developed to secure the participation of these providers. An Internet-based component will help reach remote clinicians throughout the state. Personal visits may be made to local and regional meetings of these individuals where many contacts can keep the cost per contact manageable. Benefits that will positively impact clinicians financially should be identified, quantified and emphasized to the clinician population.

Funding sources for costs not covered

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Required costs that are not covered:

- Salary of program manager
- Statewide coordination meetings
- Legal and participation agreements
- Drafting RFP and evaluating responses
- Help desk/network liaison

Assess a fee for all co-signers:

- Large facilities/hospitals (\$25,000 annual)
- Mid-size facilities/hospitals (\$5,000 annual)
- Small facilities/hospitals (\$500 annual)
- Single providers (\$50 per provider annual)

Initially, the partners will be assessed a fee for the coordination and maintenance of the network. As the network grows, this fee arrangement will be re-assessed and adjusted. It is anticipated that the cost savings to the individual partners and the improved communication capacity will far outweigh the minimum fee assessment. Most partners have agreed to participate in a “fee-for-service” model. Business agreements will be put in place as each partner is connected to the network.

ARIZONA

1) ARIZONA RURAL COMMUNITY HEALTH INFORMATION EXCHANGE

Once the network infrastructure capabilities are deployed, telemedicine and telehealth applications can be further expanded, deployed, and utilized. At this time, ARCHIE will institute a sustainable hybrid cost model consisting of annual member subscription fees and per transaction costs. Annual member subscription fees will be based on the ongoing costs associated to supporting and operating the network infrastructure and information management.

Members will be responsible for an annual membership fee based on their original commitment to the network project, and an allocation of the expected network costs for the subsequent year. In addition, members will pay a transaction fee based on utilizing the telemedicine and telehealth capabilities on a per transaction data inquiry basis. This supports the group's vision of fairly distributing costs to the entities that utilize the network and applications the most frequently, and gain the most benefit from usage of telecommunications.

Another component of sustainability will be adding new entities to the regional network and data applications. The new members will also pay member subscription and transaction fees. Cochise Network Association and ARCHIE members will collaborate to determine the appropriate membership fee for new members. It is expected that new member subscription and transaction fees will be higher than initial members because they are not contributing to initial planning, start up, and troubleshooting phases and costs. The additional revenues generated by new members participating in ARCHIE will help lower total costs for all members overall.

All healthcare stakeholders in the region can benefit from the patient information and operational efficiencies generated from the high capacity network and information exchange applications. We anticipate operational, financial, and patient care improvements to the following:

- Employer groups in the county such as the Border Patrol (approximately 600 agents are deployed in Douglas and Naco, along the border), the county jail (Bisbee), and the state prison (Douglas) would all benefit from participating in the regional healthcare network. All healthcare facilities, providers, consumers, and payers are additional local stakeholders.
- Member organizations can allocate planned information technology funds to ARCHIE as current manual and paper process are automated. Electronic workflow and data will decrease fax communications, redundant film copies and storage, courier service costs, adverse patient reactions resulting in lower medical liability exposure and costs, and unnecessary repeated tests and procedures due to paper patient chart information not being available. In addition, with the availability of improved patient information there will be a direct impact on billing and collections for the providers.

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- Community fundraising can be used to augment infrastructure costs. Southeastern Arizona Medical Center mounted a fundraising campaign to assist with a new dialysis center in Douglas during 2005-06 and was very successful in their attempt. The dialysis center, only the second in Cochise County, is scheduled to open in summer 2007.
- Northern Cochise County has implemented a health tax district based on property taxes. Towns in the southern county region are currently developing a plan to initiate a 0.5% sales tax for healthcare resources. This may prove to be a funding source for both capital and operating expense associated with this project.
- Healthcare payers will benefit greatly from the increased availability of data generated through the electronic data process as well as improved patient care outcomes.
- Pharmaceutical companies can also benefit as more patient medication results and outcomes are better measured and managed. They are very interested to identify patients with specific medical conditions that may be used in clinical trials. Decreasing the drug testing time is significant return to pharmaceutical companies as they try to move their products through clinical trials and approval.

The viability of ARCHIE depends on the members' ability to maintain trust and a cooperative spirit to work together for the good of each other and the area's patients. ARCHIE will have regional member representation insuring productive and trusted working relationships. There will be organizational and relational challenges as the network implements systems and grows; however, the most important aspect of continued support and success revolves around how challenges and possible conflicts are managed. Cochise Network Association has been working in the region since 2001 and has developed an important foundation to work from in helping regional and community organizations.

Our longer range goal is to also participate with our neighboring healthcare areas. Whether nearby entities want to connect hub-to-hub (Tucson metropolitan area) or join ARCHIE (potentially New Mexico, Mexico), we hope to continue to grow the scale of the technology that can help other area patient care and financial efficiency needs. For example, the international environment has several agencies which may support a venture among bi-national border health facilities including the NadBank, border health NGO's, AID, and the AZ-Mexico Commission.

Return on investment.

A high capacity data network including teleradiology and telehealth information exchange will have a significant return on investment to its members. ARCHIE has identified many important metrics that will be set up and monitored to insure financial and patient quality/experiences improvement. Metrics such as:

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- Decreased adverse drug events throughout the region
- Decreased number of lab and radiology tests
- Decreased administrative costs for faxes, copies, and mailed correspondence
- Decreased clinician time calling other facilities and providers
- Reduced patient waiting time in all patient care settings
- Increased physician adoption of electronic applications

The members will work together and guide management staff to institute measure metrics in the current operating environments. Therefore, a baseline of current operational, clinical, and financial statistics can be accumulated. After implementing the electronic processes, organizations utilizing the new network infrastructure and data applications can do another work flow and data collection assessment and identify improvements and outcomes. This information can be compared to industry standards and best practices so process changes can be implemented to continue to improve patient outcomes and financial performance.

ARCHIE members, technical team, and administrative personnel have collaborated to produce a robust and reliable healthcare telecommunications infrastructure that will benefit stakeholders and health consumers, as well as significantly enhance educational and research information flow, and emergency and national security responses in our rural border area.

2) THE TOHONO O'ODHAM NATION DEPARTMENT OF INFORMATION TECHNOLOGY

The project will be self-sustaining as the infrastructure will enable the Nation's Department of Health and Human Services to implement centralized and electronic client data management, increased ability for third party billing, and increased availability of billable health care services on the Nation. Most telehealth and telemedicine consultation for health care will be reimbursable to both parties.

The Indian Health Service Tucson area network will be 100% self-sustaining. I2 connectivity along with local circuit access will continue to be funded and supported beyond the two-year pilot period. Along with the existing Universal Service funded circuits, the Pilot Program establishes funding support for Internet2 access that would otherwise be extremely costly for IHS Areas and facilities. The Tucson Area IHS will monitor the project and access improvement for enhanced access to health care resources to IHS and Tribal facilities.

ARKANSAS ARKANSAS TELEHEALTH NETWORK

Short-term Network Sustainability

Arkansas' current telehealth networks are self-sustaining through direct end-user fees and allocated state funds supporting state departments, such as DHHS, and facilities, such as the UAMS. These funds support all telehealth activities across Arkansas. Consolidation of many of the overlapping networks in Arkansas will be a one-time expense, paid through the proposed grant funds, while the maintenance of the new Arkansas Telehealth Network will be supported by existing state telehealth funds. Further, for-profit organizations will pay to participate in the network, thus bringing a degree of additional revenue to new network, as described in the Description of Network & Design section of this proposal.

It is anticipated that upon consolidation of networks and thus improving statewide telehealth efficiency, cost effectiveness and financial savings will result in year-to-year maintenance costs. Therefore, the current funding level may be sufficient for short-term sustainability of the Arkansas Telehealth Network beyond the program funding period. In acknowledgement that ATOM'S efforts will persist beyond the time boundaries of this project, long-term sustainability plans have been developed identifying possible and anticipated funding streams.

Long-term Network Sustainability

The ATOM Board has already begun seeking long-term support for the Arkansas Telehealth Network through the state legislature. In the 2007 session of the Arkansas 86th General Assembly, Senator Paul Bookout passed Senate Resolution 30 requesting an interim study for expansion and consolidation of Arkansas' telehealth networks. This study will take place through the Senate Committee on Transportation, Technology, and Legislative Affairs and the House Committee on Advanced Communications and Information Technology. ATOM expects these hearings will set the stage for introduction of legislation to allocate state monies to ATOM and the statewide consolidated telehealth network. Senator Bookout's Senate Resolution 30 is included in Appendix H: Senate Resolution.

Even during ATOM's development, this innovative collaboration secured the attention of business partnerships and ventures that could contribute toward the long-term sustainability of the Arkansas Telehealth Network. The Colleges of Engineering and Business at the UAFayetteville recently announced that they will partner with the Wal-Mart Stores, Inc., Blue Cross Blue Shield, and medical providers like UAMS to create an interdisciplinary research center focused on improving the healthcare delivery system through the use of information technology. That Center for Innovation in Healthcare Logistics will target research aimed at identifying and addressing gaps and roadblocks in the application and delivery of health that can be addressed with improved information and logistic flows, as well as highlighting and replicating proven applications that are working to benefit patients and providers. ATOM has been recognized by this new Center, which stated that through its vision to reach beyond large urban hospitals to the

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challenges of bringing healthcare to massively under-served rural and minority populations, the proposed ATOM infrastructure will be invaluable to the Center's making progress on this part of its mission. Innovative new approaches to cost-effective distance healthcare delivery, developed in partnership between the University of Arkansas at Fayetteville and UAMS, could be among the early breakthrough software solutions enabled by the ATOM network. This collaboration is documented through a letter of support included in Appendix D: Letters of Support.

ATOM anticipates certain benefits through this analysis of the necessity of telehealth services in Arkansas long-term network sustainability. First, this study creates the foundation essential for legislative movements to provide allocations to the sustainability of the Arkansas Telehealth Network. This appeal will be strengthened by allowing the state's health care agencies to benefit from telemedicine, thus recognizing the diverse uses and limitless possibilities offered through this technology. Arkansas' health care organizations and stakeholders will come to recognize telehealth as a vital part of the health care administration, thus increasing interest and contribution toward this proposed technology initiative.

Utilizing the evaluative outcomes yielded through this pilot program, ATOM will lobby to increase reimbursable services. ATOM will draw attention to the fact telehealth is economically beneficial to the rural areas of the state, encouraging patients to seek specialty and subspecialty support in their hometowns. Rural hospitals will keep these patients' billing, thus bringing money into their facilities. Telehealth also lessens the personnel burden needed at rural hospitals. It may be impossible to staff specialists throughout all the rural areas of the state, but specialty care can be delivered through telehealth at a fraction of the cost of paying a full-time specialist to care for the rural community. Telehealth is known for its ability to keep and bring money into the communities it serves. In a recent UAMS study, the Rural Hospital Program estimated that by empowering patients to seek primary and specialty care in their hometowns, rural hospitals using telehealth technology create a \$24.5M total economic impact on the community. This direct and indirect revenue allows the community to free up financial resources to contribute toward the sustainability of the broadband network. In fact, the greatest evidence of Arkansas' ability to sustain its network stems from its efforts in building the current telehealth infrastructure. After grant funding ended to support current telehealth network sites, participating hospitals became self-sustaining, paying their personnel and line charges from revenues generated through the use of telemedicine. Arkansas has sustained its networks in the past and expects the trend to continue by nurturing the development and improvement of this technology. Further, ATOM will work toward estimating return-on-investment to encourage insurance companies to develop vested interest in telehealth. As it stands, Arkansas Medicaid allows reimbursement for telehealth services, and ATOM will seek further insurance agencies to follow Arkansas Medicaid's model of reimbursement.

This initiative, while delivering and enhancing needed services to rural Arkansas, will concurrently modify Arkansas' healthcare system, thus urging the attention of continued funding through state legislation. From the expected results of this pilot program, Arkansas' leaders will recognize that the state faces a vast number of widespread health care shortages, barriers, and needs, and telehealth is the key to overcome these problems for the good of all Arkansans.

CALIFORNIA UNIVERSITY OF CALIFORNIA

This section describes the University's thoughts to date about how best to approach sustainability of the California Telehealth Network (CTN). A detailed sustainability plan will be developed during the planning phase. Key elements of the plan will include:

- Creation of a business model and financial plans to secure and efficiently leverage diverse sources of funding and integration of for-profit providers;
- Performance of needs assessments to ensure service offerings meet stakeholder needs;
- Development of scalable network architecture, infrastructure and technology roadmaps to ensure the network meets projected needs and future expansion including integration and interoperability with other provider networks, home telehealth, and integration of new technologies supporting mobility; and
- Marketing activities to include additional participants.

As described in other sections of this application, the CTN will complement two other actions taken by the state that are advancing telemedicine throughout California. The first of these was establishment of a nonprofit corporation, the California Emerging Technology Fund (CETF), by the California Public Utilities Commission. The purpose of the CETF is to achieve ubiquitous access to broadband and advanced services in California, particularly in underserved communities, through the use of emerging technologies by 2010. The second of the state's actions was the establishment of the California Broadband Task Force (CBTF) by Governor Schwarzenegger through Executive Order S-23-06 (see Appendix D). The CBTF is identifying barriers to broadband access and opportunities for increased broadband adoption.

The establishment of the California Telehealth Network is in keeping with the state policy outlined in Executive Order S-12-06, in which Governor Schwarzenegger directed the Secretaries of the Health and Human Services Agency and the Business, Transportation and Housing Agency, the Director of the Department of Managed Health Care and the State Chief Information Officer to work with public and private sector stakeholders to develop a sustainable business model for an eHealth network connecting rural health clinics to medical centers throughout the state using telemedicine and other technology. Recognizing that additional funds are vital to sustaining the network that the FCC funds would help launch, the stakeholders will work to develop a sustainable network that will attract additional investors to leverage their own funds into this effort. Other potential funders interested in this effort include the United Healthcare Charitable Commitment and the California Partnership for the San Joaquin Valley. Private funders such as the California HealthCare Foundation will also be approached. Each of the investors will be able to leverage their funds within the scope of their respective organizations, as we collectively work to build and sustain the California Telehealth Network.

While the FCC funding would provide the initial investment needed for increased connectivity for rural health care providers, additional funding is required to sustain the

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provision of telemedicine services. Further investment will be required in areas including: telemedicine equipment and maintenance; technical support to identify and install appropriate telecommunications equipment; and training that prepares providers not currently using telemedicine for entry into the network.

	Year 1	Year 2	Year 3
Proposition 1D*	TBD	TBD	TBD
San Joaquin Valley eHealth Network	\$ 150,000	\$ 75,000	TBD
UC Merced and Riverside – DMHC	\$ 5,000,000	\$ 5,000,000	TBD
United Healthcare Charitable Commitment	Pending	Pending	Pending
Centers for Medicare and Medicaid Services Pilot Project	TBD	TBD	TBD

Possible equipment purchases through “~community investment fund”

FCC Rural Health Care Pilot Program Investors

California Emerging Technology Fund.

As part of its mission to support telemedicine statewide, the CETF will commit at least \$3.8 million to support the California Telehealth Network project. This will be used to fund most of the fifteen percent of the budget of the pilot program required as a cash match by the FCC.

Proposition 1D.

\$200 million in bond funding approved in November 2006 to support infrastructure needs to increase class size in UC medical schools and to expand telemedicine programs throughout the state. This includes new resources for facilities and state-of-the-art equipment, some of which may be placed in rural health facilities in connection with expanded telemedicine programs and UC medical education efforts.

United Healthcare Charitable Commitment.

UnitedHealth and PacifiCare of California agreed as a condition of the approval of their merger in California to a contribution of \$50 million to benefit California health care consumers. Of this initial \$50 million commitment, approximately \$37.5 million remains unencumbered. The agreements executed between United Health, PacifiCare, and the California Department of Insurance and the Department of Managed Health Care specified the uses of these funds as follows:

- Subsidies and outreach for individuals who are eligible for both Medicare and Medi-Cal (dual eligibles) who are unable to pay premiums for Medicare managed care products after the start up of Medicare Part D, and other subsidies and outreach to support other programs that serve low income populations;

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- Technology improvements for safety net providers;
- Medical education programs in underserved areas that will provide expanded access and service to traditionally underserved communities in California;
- Population-based preventive health strategies;
- Further support for the coordinated care initiatives; and
- Cash or in-kind contributions to help establish and support health care information technology initiatives designed to improve health care

A request is in place to both the California Department of Insurance and the United Healthcare Charitable Commitment to support allocation of \$3 to \$9 million of the charitable commitment to be used over a period of three years for telemedicine and/or telehealth projects that will leverage the California Telehealth Network. Such an investment falls directly within the intent of the agreements stipulated at the time of the merger approval. Such an investment builds upon recent efforts within the Governor's Office, given that it would: support the broadband action identified in the Health Care Reform Proposal and provide experience to the public and private sector stakeholders that will be involved in developing a sustainable business model for an eHealth network connecting rural health clinics to medical centers throughout the state using telemedicine and other technology.

California Partnership for the San Joaquin Valley.

Launched by an Executive Order from Governor Schwarzenegger in June 2005 (renewed in November 2006), the California Partnership for the San Joaquin Valley is an unprecedented public-private partnership focused on improving economic vitality and quality of life for the Valley's 3.4 million residents. The Partnership is addressing the challenges of the region by implementing measurable actions on six major initiatives to help the San Joaquin Valley emerge as California's 21st Century Opportunity.

As part of the Partnership, four health clinics are to be established (all connected electronically) in the Central Valley, by the University of California, Merced. Money to start the project comes from a \$225,000 Seed grant from the Partnership. The four health centers will connect into a network hub at UC Merced, and each will be equipped to provide telemedicine services via videoconferencing and by using specialized equipment. The centers also will be used to provide training for physicians, medical students and allied health professionals throughout the region. A number of organizations have expressed interest in partnering to develop the network, including UC Davis; UCSF - Fresno; Central Valley Health Network; California Emerging Technology Fund; California Telemedicine and eHealth Center; Great Valley Center; and United Cerebral Palsy of San Joaquin, Calaveras and Amador Counties. Locations for the clinics have not yet been announced.

Proposed Centers for Medicare and Medicaid Services (CMS) Grant to Fund Rural Health Care Providers.

The Rural Health Care CMS Pilot Project is a two-year program that would integrate with, and leverage the proposed California Telehealth Network as well as other HIT efforts. The role of the CMS project will be to stimulate adoption of eHealth technologies and systems through providing funding in the first two years for telemedicine equipment and other related items that are not covered by the FCC Grant and the California Emerging Technology Fund

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(CETF) partnership. Obtaining Year 1 and 2 funding for the Rural Health Care Pilot Program will guarantee the ability of the California Telehealth Network to build a secure foundation with rural Medi-Cal providers by providing much needed equipment, training and support. As a result, fewer rural Medi-Cal providers will expend scarce resources to purchase technology equipment for telemedicine, or be unable to participate in the Telehealth Network due to lack of funding for equipment or training.

Additional investment is required in areas including: telemedicine equipment and maintenance; technical support to identify and install appropriate telecommunications equipment; and training that prepares providers not currently using telemedicine for entry into the network. With the basic needs for telemedicine connectivity funded, future investments will be more diversified and allow the sustainable investment plan and strategy time to build.

California Telehealth Network Components and Ancillary Activities for Which Non-FCC Funding Will Be Sought. The following table describes activities for which non-FCC funding will be sought.

Component/Activity	Description
Telemedicine equipment and maintenance	Costs associated with the purchase or lease, upgrading and maintenance of telemedicine equipment such as videoconferencing equipment, diagnostic equipment and other devices used in the practice of telemedicine.
Training health care providers: Increase the number of specialists to meet the demand for telemedicine services in underserved areas	The University of California’s new Programs In Medical Education (PRIME) focus on specialized training of physicians who are committed to meeting the needs of various rural and urban underserved populations. Each campus' PRIME program contains specific training in telemedicine.
Operational costs of managing the California Telehealth Network	Funding will be needed for management and staffing of the administrative, technical, financial and training components of the CTN, as well as the expenses of convening various advisory groups, videoconferencing and bridge support, travel and supplies.

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Operational costs of regional telemedicine networks	Funding will be needed for the administration of the regional telemedicine networks, including the Indian Health Services, which are being upgraded and interconnected as the CTN grows.
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The establishment of the CTN will improve access to quality health services afforded by telemedicine, facilitate cost savings associated with the development of telemedicine and increased use of electronic health record (EHR) systems and new health information technologies. This work is fundamentally important to broader HIT efforts, creation of an advanced technology infrastructure, and development of a sustainable eHealth network.

COLORADO

COLORADO HEALTH CARE CONNECTIONS

Our plan for sustaining operations beyond the planned two-year period of USAC support is to migrate the new Ethernet service to a one-tier, flat rate statewide tariff. This will occur in concert with the State's rebidding of the base contract for Multi-Use Network telecommunications services. This contract, currently held by Qwest, will be re-competed for award on July 1, 2010. A key step towards this renewal is to structure the network in the remaining three years of the existing contract as closely as possible to the desired state for the 5-year re-competed contract. Thus, it is expected that the infrastructure costs involved in upgrading the existing statewide fiber-based network to carry Ethernet traffic statewide for health care facilities will be completed by 2008, and will be completed statewide for all users, public and private sector alike, by 2010. Therefore, in the post-FCC award phase, health care facilities will be able to sustain their connections to the network by paying the prevalent metropolitan rate for Ethernet services.

However, the FCC's pilot health care project will bear fruit in developing new models for on-going federal support for health care telecommunications services. This will be particularly important when a facility incurs "back-haul" or private line charges necessary to extend the Ethernet network beyond the Qwest Ethernet service area or into other the service area of other telecommunications companies.

The model proposed to the Pilot Health Care Program in this application follows closely to the spirit of the FCC order, namely, the use of a statewide instrumentality to coordinate and aggregate telehealth services both on the user side (hospitals and clinics) and the provider side (statewide networks). The aggregated user sector (e.g., the Colorado Health Care Connections consortium) will request service (Form 465) and select service (Form 466). The network provider will document service delivery facility-by-facility with Form 467s filings.

In order to reach the above plan for self-sustaining operations, the following specific steps are proposed:

1. Establish the discipline for sustainability from the outset of the proposed effort through use of monthly operating revenue from subscribers as project match. In this manner, the subscribers will not feel an operating budget shock when the funds awarded under this effort are discontinued.
2. The Division of Information Technologies will seek in its 2010 renewal RFP a commitment from respondents to establish a one-tier, statewide flat rate intrastate tariff for public sector users of the State's enterprise network, the Multi-Use Network. This will "level the playing field" as far as basic access is concerned for the health care providers that have joined the network.
3. To assure the use of the network—an important element of sustainability is that the network actually be used—the Colorado Health Care Connections consortium will actively assist participants will in obtaining grant funding for end-user health care information technology (HIT). Specifically, the Colorado Rural Health Center has received a formal request for proposal

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from The Colorado Health Foundation to apply for HIT funding. The Colorado Rural Health Center will submit a proposal for a statewide project for the rural health clinics.

4. Another important aspect of sustainability is the ability to sustain the management and coordination functions provided of the Colorado Health Care Connections consortium, staffed by the Colorado Hospital Association. Two ways have identified to sustain this critical activity beyond the period of the FCC award: (1) spreading the cost among the members of the Colorado Health Care Connections, or (2) bundling the cost into the network operating rate. Other options may become clear as the pilot program progresses. One, or a combination of these ways will provide for continued telemedicine support to all of Colorado's rural hospitals and clinics. A telehealth coordination role objective is to develop a viable sustainability plan for statewide telehealth coordination based on funding from the user community.

FLORIDA

Big Bend Regional Health Care Administration

3) Estimate the network's total costs for each year:

Significant field research has already been completed for the rural broadband pilot project, and it is felt the majority if not all of the eight county network can be designed, engineered and constructed in the first year. The construction would be broken up into multiple phases to ensure the best time and cost outcome for the project. The total amount of the 2007-2008 year budget will be \$10,204,119. In year one, \$9,099,931 will be applied to constructing the broadband network, with an additional annual total of \$555,157 for cost that recur monthly. (A 10% over-budget margin has been added to the project plan budget to accommodate unknown issues that may arise once actual engineering is completed.) Installation of eleven video conferencing suites will cost \$549,031. Construction of the network will entail:

- Constructing an estimated 260 miles of aerial fiber to connect eight rural counties, nine rural hospitals, two regional health information networks and nine communities to the Florida LambdaRail interface sites.
- Creating access to the Big Bend RHIO, the Florida LambdaRail, the Escambia HIN, the Florida Health Information Network and the Internet.
- Constructing nine rural communication structures equipped for Metro Ethernet.
- Payment for partial and accumulated pole attachment fees.
- Installation of eleven telehealth sites with video conference equipment.

Year two would consist primarily of installing WI-MAX access points and operational expense during turn-up of services on the newly constructed network. The network should be fully operational within the first four months following completion of construction. The total amount of the 2008-2009 year budget will be \$1,117,080. The total cost for the two-year project will come to \$11,321,199. Costs in 2008-2009 will include:

- Payment for pole attachment fees.
- Utilities, insurance and land lease for 9 communication structures.
- Recurring cost for multiple gigabit access interfaces to FLR.
- Network operational support & maintenance.
- Outside plant operational support and maintenance.
- Deploying 9 unlicensed WI-MAX type access points.

4) Describe how for-profit network participants will pay their fair share of the network costs:

During the pilot project phase, 2007-2009, fees for not-for-profit participants will be waived. All other network participants will pay a user fee. Primary care providers may pay a reduced rate or waived fee to create an incentive to start with the network. Incentives and fee structure per participant will be based on analysis of cost of business, number of participating payer providers, growth factor, and consideration for facilities of critical care need. Fee structures will be established by agreement of the Big Bend Regional Healthcare Information Organization and the

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Florida Health Information Network. Network customers will pay a subscription fee for connectivity as well as transaction fees for exchanging files among network participants.

A comparison of monthly recurring charges between the Big Bend RHIO broadband network and similar connections that include equipment and maintenance costs offered by the state-run MyFloridaNet, in the Department of Management Services, is given in Table 1.

Table 1. Comparison of Monthly Recurring Costs for Broadband Connection to MyFloridaNet and the Proposed Broadband Connection Offered by the Big Bend RHIO.

County	Hospital	T1 (1.5 Mb)		DS3 (45 Mb)		OC3 (155 Mb)	
		MyFlori daNet	Big Bend RHIO	MyFlori daNet	Big Bend RHIO	MyFlori daNet	Big Bend RHIO
Calhoun	Calhoun- Liberty Hospital	\$800	\$600	\$22,945	\$1,400	\$71,906	\$2,200
Franklin	George Weems Memorial Hospital	\$800	\$600	\$21,515	\$1,400	\$66,806	\$2,200
Gadsden	Gadsden Community Hospital	\$800	\$600	\$18,785	\$1,400	N/A	\$2,200
Gulf	Sacred Heart Hospital	\$800	\$600	N/A	\$1,400	N/A	\$2,200
Holmes	Doctor's Memorial Hospital	\$800	\$600	\$14,995	\$1,400	\$47,246	\$2,200
Jackson	Campbellton- Graceville Hospital	\$800	\$600	\$9,715	\$1,400	\$31,406	\$2,200
Jackson	Jackson Hospital	\$800	\$600	\$19,955	\$1,400	\$62,126	\$2,200
Madison	Madison County Memorial Hospital	\$800	\$600	\$9,715	\$1,400	\$31,406	\$2,200
Taylor	Doctor's Memorial, Inc.	\$800	\$600	\$23,595	\$1,400	\$73,046	\$2,200

5) Identify the source of financial support and anticipated revenues that will pay for costs not covered by the fund:

First year funding support will be provided through private-sector funding provided by a private investment Group, Flagler Holdings, Inc., This funding is a direct capital infusion to develop and install lines and the related telecommunications infrastructure to be operationalized during the

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second year of the project. It is anticipated that this funding will cover \$1.5 million, or the remainder of the 15% match left after matching funds are located from other sources.

The Florida Rural Health Association has earmarked \$9,500 in available grants funding to support this proposal.

The project team is negotiating with several regional companies, including Progress Energy, to waive monthly pole attachment fees, the estimated assessed donation of which is valued at \$125,000 per year.

Big Bend RHIO will provide the interfaces for each rural hospital connection to the Big Bend RHIO health information network. The value of this financial donation is still under assessment.

Funding Formula for Sustainability of Services

The plan for sustainability of the proposed broadband network is based on establishing competitive transaction and subscription fees to customers who wish to have broadband connections. The relatively low cost of providing gigabit broadband to each community, an estimated \$10,343 per month in the second year, can be compared with current services available to not-for-profit health care facilities by a state offering, which cost on average \$17,653 per month for DS3 (45 Mb) service or \$50,000 per month for OC3 (155mb) service. The steps toward sustainability of the network include:

- 1) Secure messaging and exchange of large image files among facilities, with transaction fees to be set.
- 2) Connection fees based on necessary monthly recurring costs.
- 3) Competitive cost of service with other telecommunication service providers, driving market decisions.
- 4) Building enough broadband capacity to scale up to include all new subscribers.
- 5) Using the volume of transactions to help keep down subscription costs, and to help maintain market competitiveness and sustainability.

11) Indicate to what extent the network can be self-sustaining once established.

A key objective of the project is to establish a self-sustaining operational model that balances the benefits and costs of the network on all participants including urban providers, rural providers and the private sector. The network will be sustained by the revenues generated by user fees for services which will be established by the Big Bend RHIO.

Just as health care in general struggles to provide financial sustainability, so do emerging regional health care information organizations (RHIOs). RHIOs are diligently working to facilitate electronic health information exchange between disparate provider systems predominately in urban areas. The two main areas of concern for these organizations are privacy and financial sustainability. Even as privacy and security issues are worked out, without financial viability RHIOs can't survive. Currently only a very few RHIO efforts have claimed any level of sustainability. The majority are still admittedly, and openly, looking for sustainable models.

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It is widely understood that urban health care providers have limited resources to invest and support next generation technology, and rural providers have virtually none. While the private sector in rural communities may be small, addressing their needs for broadband and next generation services can generate sufficient revenues to substantially subsidize rural health care. Additionally, by bringing advanced services to the entire community significant overall economic revitalization and development can occur.

In a recent study on the economic benefits of building and operating a municipal broadband network, the authors cite a federal government report that notes for every dollar invested in broadband, the economy generated by the connectivity equals three dollars. The authors conclude that the Florida county under study “experienced 128% growth over it peers since the municipal broadband network was built” in 2001.¹

If advanced services are provided only to the health care providers then the community itself will likely have limited ability to provide adequate and ongoing support for its local health care system. For sustainability of a rural health care network beyond the pilot program we must provide the same advanced services to the entire community. This will provide for community wide economic revitalization which is crucial to the success of these health care systems.

It is the opinion of the applicants that sustainability of rural health care technology and related infrastructure can only be achieved by leveraging public / private partnerships. An example of this is already producing significant results for the Big Bend RHIO and its urban stakeholders. The Big Bend RHIO and ElectroNet, a private communications carrier identified and began implementing a business model where sustainability has truly been achieved and ongoing since 2004. The model leverages the specific needs of health care providers and the private sector to subsidize and support each other.

In 2003 ElectroNet constructed a gigabit Metro Ethernet private broadband network to serve the specific needs of the Leon County medical community. The network has become known as the private Medical Area Network or pMAN. The pMAN began by connecting several providers to facilitate transfer of radiological images. The network provides radiologists with real-time access to images from multiple locations and multiple imaging centers including their homes. The network now provides inter office transport for providers with multiple locations, Internet access with centralized VPN, firewall, security and intrusion detection and is the platform for the Big Bend RHIO regional health information network (RHIN) prototype project. To further enhance security only legitimate health care organizations are connected to the pMAN portion of the network.

This sustainability was dependant upon leveraging a portion of the facilities constructed for the pMAN to deliver advanced services to the private non health care sector. By combining the needs of both health care and private enterprise a sustainable business model has been achieved. The partnership between ElectroNet and the Big Bend RHIO has created an environment where the Big Bend RHIO can provide its suite of services over the pMAN infrastructure at a very reasonable cost with minimal to no capital expense. This model of a regional health information network (RHIN) has created significant value to the Big Bend RHIO and its stakeholders and will provide for accelerated Big Bend RHIO sustainability.

¹ Ford, G. and T Koutsky (April 2005). Broadband and economic development: a municipal case study from Florida. Applied Economic Studies, April 2005. p. 15.

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The rural providers in our region are also stakeholders of the Big Bend RHIO. Patients from these communities are referred to the Big Bend RHIO urban specialty providers which create the need to connect them to the Big Bend RHIO and the urban specialty providers to exchange information. Because the pMAN already provides connectivity for many of the urban specialist, 100 % of the cost of connecting the rural communities to these providers will be carried by the Big Bend RHIO.

The proposed solution is to construct mini-pMANs in each of the proposed rural communities and connect them back to the Tallahassee pMAN. This would provide each of the rural community participants with direct connectivity to all urban pMAN participants, all other rural community participants, National Lambda Rail, Internet2 and the public Internet. An example of a mini-pMAN, as it would be constructed in Madison, Florida, is shown in Figure 4. In this map the connections to the LambdaRail are shown, as is the route of aerial fiber to the Madison hospital.

Figure 4. Route of Aerial Fiber for mini-pMAN in Madison, Florida



The dedicated rural networks (mini-pMANs) would be constructed of multi strand aerial fiber to provide gigabit Metro Ethernet capability in each of the communities and backhauled by a gigabit connection to the FLR. The Metro Ethernet network would be securely architected to provide services to the private sector as well. Services to both the public and private health care providers would include those that their urban counterparts currently enjoy. By bundling and deploying a suite of advanced services to the entire community, an economy of scale can be achieved creating a sustainable environment. This plan is focused on the future needs for

broadband, and on providing appropriate health information exchange solutions at a reasonable cost.

Although on the surface construction of new rural networks may seem capital intensive and more complex than purchasing existing incumbent solutions, this is far from the case. A project of state or regional scale is spread over multiple LATAs, carriers and different legacy systems. Creating a manageable and sustainable dedicated next generation broadband network with existing rural facilities from multiple carriers is nearly if not impossible. This particular regional project is spread over three LATAs and four different incumbent carriers.

After researching the existing carrier infrastructure opportunities to create a dedicated network in our region it was determined that a sustainable network cannot be constructed using existing carrier facilities. Most of the proposed region is limited to 155mb OC3 capacity circuits (with one limited to 45mb DS3) with costs ranging from \$31,000 to 73,000 per month for a single managed OC3 (155mb) connection or interface. The proposed pilot project would accomplish the same connectivity at a monthly cost of \$10,343.

Second Year Financial Sustainability

Several funding streams are being developed to support the project in its second year. These include private-sector, state rural economic development, foundation, in-kind, and emergency preparedness/response support to help defray the costs for maintenance and operation of the network.

Private Sector Support:

Includes health clinics, primary and specialty physician practices, small and medium sized businesses, regional telecommunication companies, and housing developers². These efforts will be spearheaded by the Agency for Health Care Administration, the Big Bend RHIO, the Governor's Office of Tourism, Trade, and Economic Development (OTTED) Rural Economic Development Initiative (REDI), Enterprise Florida (the states primary economic development organization), Tallahassee Economic Development Council, Opportunity Florida, the Florida's Great Northwest and the City of Port St. Joe.

Rural Economic Development:

The OTTED/REDI program provides a variety of rural economic development funding including. Enterprise Florida, Opportunity Florida, and the Florida's Great Northwest will provide regional and local technical assistance to support these programs.

Rural Development Grants:

Rural development grants could provide \$100,000 for each project year for local government support which will tie to the health care and optical network through the Big Bend Regional Health Information Organization (RHIO) for a total of \$200,000.

Business Enterprise Grants:

² New housing developments are growing at a rapid pace throughout the panhandle coastal region in counties covered by this project. These developments do not have broadband access.

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Business enterprise grants, through Florida's Community Development Block Grant (CDBG), could provide \$35,000 for each new job created. The project will create 8 new positions for a total of \$280,000 in support.

Community Contribution Tax Credit Program:

The Community Contribution Tax Credit Program could provide an additional 50% tax credit above their standard business deduction for cash or material donations to the project.

Rural Economic Development Loan Program:

The Rural Economic Development Loan Program could provide low interest loans to local governments participating in this project with very generous terms and marginal interest rates.

Foundations:

The Progress Energy Foundation (the major electric utility company in the region) foundation has expressed interest in providing financial support for this project. We are in the process of contacting other foundations such as the St. Joe Foundation, Progress Energy Foundation, and the Jessie Ball DuPont Foundation for second year support.

In-Kind:

Project management is provided by the Agency for Health Care Administration and the Big Bend Regional Health Information Organization. Health care provider outreach and support is offered by the Florida Department of Health's State Office of Rural Health and the Florida Hospital Association. Telehealth support is offered by the Florida Department of Health's Children's Medical Services and the Community Health Informatics Organization. Continuing economic development work is offered by the Governor's Office of Tourism, Trade, and Economic Development and Rural Economic Development Initiative, Enterprise Florida, Opportunity Florida, Florida's Great Northwest, and Florida WorkForce Plus (which has offered in-kind support at \$75,000).

HAWAII

UNIVERSITY OF HAWAII AT MĀNOA

The proposed network will in large part be self-sustaining once established. This is because the network connections proposed in this application can be funded in part through the current structure of the Rural Health Care Program of the FCC. However, there are some issues that may affect sustainability. First, some urban healthcare providers that provide services to the remote and rural communities of Hawaii may be affected by the end of the pilot program, despite the fact that they serve the underserved in both urban and rural settings. Further, in Hawaii, the inclusion of the urban health care providers in the demonstration project is important not only because they also serve underserved populations; but these providers are often able to assist in responding to emergency needs in the rural communities. Unfortunately, a major obstacle for providing health services to communities located on the outer islands is that the travel between islands is costly in funding and time for the health care provider and clients.

Second, federal definitions to determine “rurality” often neglect the isolated nature of our rural island communities, which require people to fly between islands to receive services not available on the island. For example, under changing FCC definitions, the community of Hilo on the island of Hawaii will not be considered rural. Under other definitions used by federal agencies, the whole island of Hawaii is considered rural and the healthcare facilities use the rural healthcare programs for many services that are provided by specialists in these locations. As such, the applicants are hopeful that the FCC will not only grandfather the current sites, but will also allow the use of other definitions of rurality so that these healthcare providers are able to use the rural healthcare funds for connectivity. Finally, it is important to note the community health care clinics and centers were not able to be included in this grant application. Given the amount of time needed to plan and budget funds for interconnectivity, these primary care centers often do not have the financial resources or ability to rapidly respond to a short filing window. It is hoped that the FCC will expand the time period for the broadband demonstration to enable the value of multipurpose broadband networks to become fully established.

ILLINOIS

1) ILLINOIS HOSPITAL ASSOCIATION

Sustainability of the activities described in this proposal is very likely as the communications infrastructure already is in place and is itself sustained through a combination of user fees and state funding. (See the description of the Illinois Century Network on page 3.) Additionally, there are multiple telehealth/telemedicine projects already underway in the state that have been functioning for several years and are self sustaining. The coordination of activities designed to expand and refine the abilities of those projects to better meet the needs of both health care providers and Illinois residents, rural and urban, will be accomplished with a combination of existing staff at both the IHA and its project partners and, in some instances, through the use of contractual staff by partners. With the expectation of at least two years of funding, the coordinating/development activities will be completed and the affected entities, whether IHA member hospitals or partners' constituents, will have had the opportunity to determine the value of the activities and appropriateness of on-going financial support. Inclusion of dedicated funding in future operating budgets of the IHA and any of its project partners likely would support activities that develop as a result of the successful accomplishment of this proposal's objectives.

2) ILLINOIS RURAL HEALTHNET

The IRHN Network Consortium will seek to become self-sustaining by utilizing a number of approaches to continued funding. Item A below, excerpted from the IRHN Work Plan, describes the steps to be taken to achieve self-sustainability:

A. Implementation of the Financial and Business Model

1. Finalize partnership and financial arrangements for IRHN network users and for public sector entities providing network resources.
2. Finalize cost structures for equipment purchases and for purchasing telecommunications services to be provided by private sector.
3. Establish structures to fulfill FCC and USAC requirements for network and financial reporting.
4. Finalize budget and cash flow requirements.
5. Assign responsibilities for conducting cost reimbursement, cost tracking, and for billing any for-profit users of the IRHN.
6. Seek additional funding as may be made available.
7. Seek to establish the financial sustainability of the IRHN, by aggregating Network users and re-allocating their communications costs to provide operating funds for the IRHN, and by marketing the IRHN to eligible entities within the State of Illinois.

STRATEGIES TO ACHIEVE NETWORK SUSTAINABILITY

B. Use of Public Sector Resources

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One of the important strategies for long-term sustainability is to use public-sector resources that require very low cost to keep in place. The public sector entities that are included in this application are providing resources that provide high value with very little initial or annual expense. These resources include, most importantly, fiber and fiberrelated bandwidth, and the related equipment.

The IRHN will be able to make low-cost use of fiber services provided by:

- Northern Illinois University (NIUNet)
- Metropolitan Research and Education Network
- University of Illinois at Urbana Champaign

The IRHN will also attempt to utilize public-sector resources such as towers, poles, and the like, for wireless equipment location.

C. Use of Cost-Efficient Private Sector Resources

The IRHN will arrange for long-term use of low-cost private sector resources, such as leasing dark fiber.

D. Sources of Financial Support:

Sources of financial support and anticipated revenues will include the following:

1. Payment by public and non-profits for connection to the IRHN Network.

- a) Many of these entities are paying for some level of connection to the Internet. The intent of the IRHN is to re-allocate those payments to the IRHN, which can then be used to pay for costs not covered by the fund, and to pay for costs after the FCC funding has been depleted.
- b) Selected public or non-profit entities of the IRHN are expected to provide funding because of the value that will be able to be achieved at an affordable cost. The objective of the IRHN is to provide the lowest-cost service available to health care entities in Illinois. If this is achieved, we will retain our “customer” base.
- c) Private or for-profit users of the IRHN may be willing to pay more than their fair share of costs, because of the value that will be able to be achieved at a more affordable cost than might otherwise be available.

1. Private and for-profit network participants will pay their fair share of the network costs in one or more of the following ways, as may be applicable to for-profit participant locations. This will provide funding to help keep the IRHN sustainable over the long term.

- a) Payment of initial costs for installation of a “lateral” fiber connection, and the associated equipment, to connect the for-profit participant location to the IRHN Network.

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- b) Payment of initial costs for installation of a wireless connection, and the associated equipment, to connect the for-profit participant to the IRHN Network.
- c) Payments of initial costs for services (fiber, copper, wireless, etc.), and the associated equipment, to connect the for-profit participant to the IRHN Network.
- d) Payment of any ongoing costs for bandwidth, services, and/or maintenance to continue the successful connection of the for-profit participant to the IRHN Network.

Payment of the above costs (as may be appropriate) will ensure that the private and for-profit participants are paying their fair share, while at the same time providing a portion of the funding to keep the IRHN sustainable.

E. Seek Additional Funding

The IRHN will seek funding from a variety of local, state, and federal sources. Among the possible sources, once the FCC grant is retired, would be to apply for federal funding for rural health care networks.

F. Marketing the IRHN to Health Care Entities within Illinois

Marketing the IRHN to potential new users will allow for economies of scale in adding new locations, many of which would be very cost-efficient to activate because of the infrastructure that the initial phase of the IRHN will have already put into place.

G. State May Allocate Funding

Discussions with executive and legislative branches of State government are ongoing at this time in the event there needs to be additional funding.

INDIANA

1) HENDRICKS REGIONAL HEALTH

How Project will be Self Sustaining

The project will be self sustainable through Hendricks Regional Health assuming the remaining costs of the fiber build and annual maintenance and inspection fees. To allay these costs Hendricks Regional Health may sell excess dark fiber capabilities to non-owned healthcare facilities at a per fiber mile cost equal to 15% of the total project plus pro-rated annual maintenance and inspection fees. This business model has been successful with Hendricks Regional Health's first fiber project. Costs of that project are being allayed by selling excess dark fiber to neighboring cities. These cities are then using their fiber optics to provide high speed bandwidth to link their public safety and educational facilities.

2) INDIANA HEALTH NETWORK

The following section provides a foundation for network sustainability strategies, however, additional strategies will be researched and identified to insure sustainability. The plan that is outlined in this application calls for the use of telecom market forces to maintain and grow the fiber connections to Indiana's rural, and Critical Access Hospitals. By utilizing the facilities and resources of Indiana's telecommunications companies, this plan expects that other health and non-health customers will also utilize the network connections providing added long term support. Other long-term sustainability strategies will be developed by the network members as a part of the network strategic planning process.

IOWA IOWA HEALTH SYSTEMS

IHS is committed to providing the required capital and assuming the responsibility for the ongoing operating costs of the network. Its goal, as a not-for-profit health care provider is embodied in its mission statement: *“Improving the health of the people and communities we serve.”* over time IHS anticipates that the operating costs for the grant-funded network extensions can be recovered primarily from for-profit users of the network. Specifically, IHS will seek cost recovery for the operating expenses of the grant-funded network extensions by (1) requiring eligible health care entities to pay discounted usage fees for the category and quantity of services used, (2) requiring non-eligible entities to pay usage fees based on a reasonable allocation of the operating costs, and (3) requiring other users (*e.g.*, pharmaceutical companies, billing companies and other health care industry-related entities) to pay value-based usage fees.

User contribution levels from lowest to highest are anticipated to be:

- 1) rural qualifying
- 2) rural non-qualifying
- 3) urban qualifying (including all non profit private enterprise)
- 4) urban for non-qualifying (including all for profit private enterprise)

IHS anticipates that the 70% of the universe of eligible users will access the network within the first five years of operation. IHS further anticipates (based on extensive economic/business modeling) that 90% of available capacity (based on the initially installed electronics) will be utilized within the first ten years of operation, and that the network will generate sufficient funds to be self-sustaining by the **fifth** year of operation.

As noted IHS is seeking funding from the FCC pilot program for ongoing operational expenses. IHS has an existing backbone network already in place and operating, and IHS plans to activate additional fiber on that backbone network specifically for the Pilot Plan supported network. The Pilot Plan supported network consists of the extensions to be built with grant funds. Such extensions will only be created where (1) grant funds are available; (2) eligible healthcare providers are willing to use them; and (3) non-eligible (for profit) users are willing to fund their extensions and pay their fair share of operating costs. To the extent that network extensions are created in partnership with local telephone companies and other USAC-eligible carriers IHS anticipates that such collaborative efforts will reduce the overall operating costs of the network. In any event IHS anticipates that it will cover any shortfall in operating costs until the network becomes self-sustaining.

KANSAS

1) THE UNIVERSITY OF KANSAS MEDICAL CENTER

At the conclusion of FCC pilot project funding, KanHealth will be fully sustained by three existing funding mechanisms. First, the bulk of the project costs--\$2.06 million for the KanHealth “core” network--will revert to the Kansas Universal Service Fund (KUSF) which has been leveraged for the last six years for the Kan-ed network in Kansas. This funding stream has been approved by the Kansas Legislature Coordination of Telemedicine Program - Geographically Extent to Which Network can be Self-sustained Once Established since the inception of Kan-ed in 2001.continue to be supported by KUSF funding.

Second, the local hospital connections, or “last mile” loops to the KanHealth nearest aggregation point that total \$1.22 million in this project will be partially supported by the existing Rural Health Care mechanism of the Universal Service Fund. Preliminary data kom an April 2007survey of Kansas hospitals indicated that 64% of respondents do not apply for USF discounts for their telecommunication services. During the pilot phase of this project, processes will be developed to improve the rate of participation in the USF program and reduce hospital costs. Latest figures show that the 2007 urban rate for a T1 MTM in Kansas is \$370 representing a discount of approximately \$796.67 &om the average cost of \$1 166.67 per site, per month used in developing the budget for this pilot. Thus, the total cost of the local loops, the premise routers and router management will be discounted by USF by a total of \$1,147,205, Because the total cost of the local loop portion of KanHealth amounts to \$1,680,000, the remaining balance after USF discount is \$532,795.

Third, the remaining portion of the local loops, or \$532,795, will be supported by the local match of the participating hospitals. Each hospital will be paying approximately \$370 per month for its KanHealth connection. Because the hospital will have access to telemedicine, HIE activity, distance education and other health technology services, this is viewed as an affordable and necessary expense to incur that will reduce other hospital expenses. Note: The \$532,795 amount is based on an 18-month period to be consistent with the period identified in this pilot proposal in which hospitals are connected to the network. On an annual basis, the amount is actually \$355,200, which still averages \$370 per month per hospital.

The remaining expenses in this pilot project for the network design study (\$250,000) and the project management costs (\$345,300) are one-time figures and will not require ongoing resources.

Table 4: Sustainability Breakdown

KanHealth core	Kansas USF	&2,067,745	55%
KanHealth local Loops (USF/RHC portion)	USF/RHC	\$1,147,205	30%

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KanHealth local Loops (local Hospital portion)	Local hospital match	\$532,795	14%
Internet2 Connection	Kansas USF	\$25,000	1%
	Totals	\$3,112,145	100%

2) PIONEER HEALTH NETWORK

A sustainability model description to telecommunication providers is a primary outcome to this pilot project. A significant result of the design is to identify the network characteristics that make it possible to describe the telecommunication, security/privacy and information service needs of the health information network. These needs can then be expressed as a set of target services that must be supported by a particular telecommunication provider. For instance, the following table describes the basic list of services that would be necessary to support a healthcare provider. The table also recognizes that the bid a telecommunication provider would make to supply that particular service to a healthcare provider also includes the costs associated with services offered by third parties to create value added content or security/privacy services.

Along with the tiered approach to bundled telecommunications and information services it is anticipated that these new healthcare products will mirror other solutions adopted in the residential marketplace. For instance, telecommunication providers either directly or through a contract service offer residential customers automated and human technical support services. The design will include consideration of these same issues. In the healthcare domain it is generally agreed that greater utilization of telecommunications and information technology is in part an issue of cost but is also heavily affected by the lack of general technology knowledge and limited support offered to healthcare professionals. Consequently, the tiered model will also address issues of sustainability the reach beyond the question of funding.

KENTUCKY

1) COMMUNICARE, INC.

Our medical providers bill at a rate of \$72 per unit of service, \$288 per hour. With the time and travel savings that should be realized from the implementation of a telehealth system, we can conservatively estimate an additional hour of service per day from each medical provider. Given our current staffing pattern of 5 medical doctors, this would result in an additional \$1,440 per day, \$10,080 per week, \$40,320 per month. These figures do not take into account the nursing staff that most likely will be able to provide some services with this equipment. Clearly, this should generate enough income within Communicare for the system to sustain itself, once the initial investment is made. Lincoln Trail District Health Department should realize similar savings that will enable system maintenance once the funding cycle has ended.

2) KENTUCKY RIVER COMMUNITY CARE, INC

The key to the long term success of the KBTN is the initial planning, system design, membership selection and frequency of service provision using the network. The Kentucky Behavioral Health Network can likely be fully self sustaining because of the need for health and mental health care in rural areas of Kentucky, the possibility of billing for services provided over the network, and reduced rates for broadband services through FCC programs for rural service areas.

Extensive revenue capacity analysis will reveal if the network can be fully self sustaining once complete costs are known for ongoing training, maintenance, broadband service contracts, revenue sources and amounts and the utilization rates of patients and providers. Based upon the history of similar projects interest from the patients point of view is growing and provider willingness to access and provide services over such a system is growing. Calculations will be performed when more of the fixed costs and ongoing expenses are known will examine estimated monthly expenses for network, divided by number of network participants. Using business analytic models we will calculate costs based upon estimated number of hours of use for break even.

MAINE

1) THE NEW ENGLAND TELEHEALTH CONSORTIUM

The New England Telehealth Consortium (NETC) will ensure the sustainability of the network by ensuring the future of the Consortium itself. The NETC will design a sustainability plan based on the goals, objectives and tasks described earlier in this proposal; additionally, key strategies for planning the success of the Consortium will be developed within months of receiving notice of the FCC grant award. The Consortium will do this by creating a common vision, mission and strategic plan for growth that is agreed, understood and supported by consortium members, the organizational staff of members and the public.

There will be a plan in place to:

- Build capacity among members by using existing resources already developed by members to the fullest potential. These resources include but are not limited to shared telehealth and telemedicine services, research, clinical expertise, and educational opportunities
- Share and expand those resources among partners through collaborative efforts
- Expand opportunities to non-members
- Develop a financial plan for the NETC that exists separately **from** the FCC grant funding and ensures the ability to fund currently planned activities **as** well as growth into future years.
- Obtain diversified funding to ensure the future of the Consortium and promote growth. Possible funding resources that will be explored include developing a dues structure, charging non-members for services, charging members fees for special services, and seeking other grant opportunities.
- Measuring and evaluating activities with the intention of continuous improvement and growth.
- Building a constituency of supporters throughout the three states including healthcare professionals, elected officials, business leaders, religious leaders, neighborhood and civic leaders, local foundation leaders, educational leaders and others.

2) FRANKLIN COMMUNITY HEALTH NETWORK

Once the proposed infrastructure is in place, the fiber optic backbone established through this initiative will be sustained by regular subscriber fees to Oxford Networks. This project offers a uniquely sustainable model, as broadband access will be supported by subscription fees from community members and area organizations, in the same way that access is sustained in metropolitan areas. Future access will

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not depend on future funding or significant contributions by the collaborators in this proposal.

It is anticipated that increased broadband access as a result of this initiative will support greater economic development in this region as more businesses and individuals move to this area, which in turn is likely to enable more community members to obtain home broadband access. This will support and sustain community access to broadband for both providers and consumers, which is key to many evolving health initiatives described earlier in this proposal.

As mentioned previously, FCHN's access to broadband will be supported into the future through the subsidized subscription fees from Oxford Networks. Oxford has committed to supporting FCHN's broadband needs in the future via a 50% discount on installation costs and a 20% discount on subscription costs for each 10 megabyte connection. As mentioned earlier, this will result in an annual savings of \$79,200 per year in operational cost savings for FCHN. In the constantly evolving world of healthcare and constantly shifting reimbursement rates, this will be a significant asset to FCHN, and will support access to evolving technologies. This entire project ensures that individuals living in rural areas of western and central Maine have access to many of the same resources as those available at large healthcare facilities.

MASSACHUSETTS OPENCAPE CORPORATION

OpenCape Corporation must be sustainable. The business model must and will generate adequate revenue to ensure OpenCape is self sustaining in terms of operation, maintenance, and upgrades of technology.

Public Access Network. Initial analysis of the costs to operate, maintain, and sustain the OpenCape public access transport network indicate approximately \$300,000 will be needed annually. Analysis of the public access entity market indicates adequate revenue can be generated to meet this need. In addition, grant requests for the build out of the public access transport network will include funding for these costs for a minimum of the first year, but preferably for the first three years.

Beneficiaries of the emergency communications capabilities of OpenCape must also contribute to sustaining the capability in order to ensure its availability in times of crisis. The Massachusetts Emergency Management Agency (MEMA), counties, and Red Cross should be assessed an annual fee to support the capability.

Analysis of the revenue that can be generated by the public access network alone indicates it can sustain the public access network. It must be self sustaining until the commercial access network is functional and develops an adequate market share to generate sufficient revenue to sustain both the public and commercial access networks.

Commercial Access Network. The implementation of the commercial access network will add complexity and cost to the management, operation, maintenance, and sustainability of the OpenCape transport network. It is estimated the commercial access network implementation will cause OpenCape to incur an additional \$200,000 in operating and maintenance costs. Successful revenue generation will largely rely on successful commercial ISPs serving the business and residential markets.

Business Market. The profit and non-profit business sector require additional bandwidth options. If one assumes a 15% penetration of the 23,000 single proprietor businesses and a 30% penetration of the businesses with paid employees, with an average monthly billing of \$75 the total revenue generated by commercial ISPs would be approximately \$4.3M.

Residential Market. If the commercial ISPs have a 20% annual subscription rate from the 100,000 households on Cape Cod and charged \$30 per month to these customers they would generate nearly \$7.2M in revenue.

Seasonal Market. ISPs will also be able to penetrate the 50,000 second home and vacation rental market. Higher rates would be charged to subscribers for weekly or monthly periods during the summer vacation season. If a weekly rate of \$25 were established for the vacation user and there were a 20% subscription rate for 10 weeks of the summer, the annual

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revenue to ISPs would be approximately \$2.5M. The total of the two markets (year round and vacation) could yield nearly \$9.7M to commercial ISPs annually.

If OpenCape revenues were based on 10% of the revenue generated by ISPs for business and residential service it would generate approximately \$1.2M annually from commercial ISPs. When this level of revenue generation is achieved OpenCape will have adequate resources to maintain, operate, and sustain both the public access and commercial access transport networks at no cost to public access entities. In addition, there would be adequate resources available to expand and improve capabilities over time as new technologies become available.

MINNESOTA

MINNESOTA TELEHEALTH NETWORK

In addition to providing robust network architecture for telehealth applications, the parties to this project are in agreement that to achieve true success for rural healthcare delivery using advance broadband telecommunications, all participating healthcare entities and network service providers need to focus on ongoing support for the core telehealth applications. It is agreed that the effort is not focused on the network infrastructure as an end in itself, rather the network is only a means to achieve seamless support for telehealth applications.

2. **Greater Minnesota Telehealth Initiative Steering Committee.** This steering committee will be responsible for further coordination, development and implementation of the Greater Minnesota Telehealthcare Network.
 - a. Membership will comprise representatives from each co-applicant organization, along with representation from telecommunications networking and applications, data security and privacy, data collection and analysis, telehealth policy, financial analysis.
 - b. . It will also form the core group for exploration of a formalized telehealth network coordinating entity in Minnesota and border states.
 - c. The Committee will meet at regular intervals during the pilot to review reports and presentations by sites or disciplines and recommend adjustments to the pilot process, as appropriate.
 - d. . The Committee will work collaboratively to develop, document and publish shared information and processes, and to ensure that the necessary support functions are in place to deliver high quality and reliable telehealth capabilities.
 - e. To achieve sustainability, the Committee will meet at regular intervals to share information, review reports and presentations by sites or disciplines and recommend adjustments to the pilot process, as appropriate.

2. **Continued coordination and support by major statewide partners:** University of Minnesota, Minnesota State Colleges and Universities (MNSCU), Minnesota Department of Health, Minnesota Department of Human Services, Minnesota Office of Enterprise Technology. These organizations will be represented on the steering committee and provide staff support and planning services as appropriate.

3. **Great Plains Telehealth Resource & Assistance Center (TRAC).** The Great Plains TRAC will provide support to the Greater Minnesota Telehealth Broadband Initiative health care provider participants through its telehealth support, training and development services. It will also assist with regional coordination (See Section II.F.).

4. **Broad range of health care applications.** To achieve ongoing sustainability after the pilot, it is well understood that the healthcare entities need to embrace the broadest possible range of telehealth applications. These applications need to become the everyday and preferred way to meet the broad range of needs of healthcare entities.

MISSISSIPPI

1) OFFICE OF THE GOVERNOR DIVISION OF MEDICAID STATE OF MISSISSIPPI

RECENT HISTORICAL PERSPECTIVE

Our entire nation is in dire need of a fully integrated telehealth and electronic health information exchange. For Mississippi, Hurricane Katrina poignantly illustrated this need in a fashion more tragic than any example in our nation's history. We once learned from a popular margarine commercial that "you can't fool Mother Nature." In the aftermath of Hurricane Katrina, we are learning new lessons about her nature, including that she is most disrespectful of political boundaries and state borders. Katrina, in fact, caused widespread physical, social and economic damage across the entire Gulf Coast region and beyond its initial point of impact. Even though the center of the storm hit at the mouth of the Pearl River at the Louisiana/Mississippi border, the devastating impact of the storm, in terms of damage and chaos resulting from the displacement of approximately 1,000,000 people, was felt as far west as Texas and east into Alabama, the Florida panhandle, and Georgia. Of these displaced persons, over 250,000 required healthcare, and eventually over 60% of those displaced sought care outside of their home state. According to the July 1, 2006 census data, most of the counties that received a large inflow of population have seen a reversal of the situation as of July 1, 2006, and in fact, those counties that saw a substantial loss of population are now seeing an increase in the population. Truly, Mother Nature puts people in motion, and those people will move to wherever they can get care, regardless of state lines or man-made borders.

The plights of the individuals displaced by Katrina can be divided into at least two distinct categories of human experiences. One is what we will refer to as the more "independent" experience; the other, the more "dependent" experience. The former refers to the loss and suffering of those people who had or were able to secure transportation, insurance and resources. The latter, and the one with which AO-TFH network will place special attention, refers to the experience of those who had no transportation, were limited to Medicaid or no health funding, and had limited life resources upon which to rely during the storm's aftermath. These more "dependent" individuals relied upon the social or governmental response structures for their care and support. For these Medicaid or self-funded patients, Mother Nature undeniably seemed to conspire with a digitally impaired health system to create significant barriers to timely, safe and effective medical care.

Sustainability of the AO-TFH Telehealth Sharing Initiative

MsDoM has proposed to use the lessons learned during Katrina to build a new health information highway accessible by all providers. AO-TFH will create a web-based system that enables hospitals, medical needs shelters, and other public health facilities to share real-time, event status – including the existence of, and/or need for staff, supplies and other resources. Moreover, this information

highway can accentuate patient flow and accelerate patient transfers while simultaneously providing a patient record knowledge exchange. The AO-TFH system will also address the cross border issues/shortcomings so strongly amplified by Katrina and, while the system will be designed to provide an immediate solution to the state's telehealth/telemedicine and health care disaster response needs, AO-TFH plans to exploit all the benefits the system has to offer, assuring its survival and growth into the future.

Other Regional Health Care Sharing Efforts: Lessons Learned

In addition to the many poignant lessons taken from Katrina for building an effective statewide integrated telehealth and healthcare information system such as planned by the AO-TFH, it is important to consider the "lessons learned" from analogous efforts in related areas. Some of these lessons learned include:

- Formation of a sound broad based stakeholder team
- Development of governance and MOU processes
- Development and use of ongoing objective needs assessments
- Build-out of specific business process requirements
- Cost effective acquisition/implementation processes
- Partnerships to assure experienced technical assistance and training
- Ongoing assessment throughout the project's life cycle with appropriate updating
- Post-implementation system governance and continuing life cycle support

Project Benefits

Integrated telehealth and healthcare information systems have been documented to offer the potential of contributing major benefits to locally delivered health services. A few of these principal benefits are:

General Statewide Telehealth Benefits

- Providing better and increased volumes of "*problem solving*" information
- Promotion of strategic coordination among a wide variety of healthcare provision partners
- Facilitation of resource sharing
- Connecting Mississippi's multiple health care providers to bring innovative telemedicine

More Specific -- Disaster Recovery and Operations Continuity Benefits

- services to those areas of our state where the need for those benefits is most acute
- Providing situational awareness during a disaster --the ability to obtain accurate Information about an event so that an effective response and resource deployment an occur
- Optimizing surge capacity --meeting the challenge of making sure that no one facility is overwhelmed with patients during a disaster
- Optimizing surge capability, addressing the need to make sure that patients are routed to the most appropriate facility that can meet their care needs
- Improving ability of providers to serve disaster-born displaced patients where

providers have no knowledge about the patient prior to the disaster

AO-TFH is developing a network that will serve Mississippi and its neighbors well into the future. For these efforts to reach their maximum capability and involve the maximum number of providers additional funding is required. The FCC Rural Health Pilot Program is the solution to at least one of the challenges confronting the AO-FTH initiative. We respectfully request your assistance allowing us the opportunity to demonstrate just how valuable this program is to our state and our nation's health care.

2) THE UNIVERSITY OF MISSISSIPPI MEDICAL CENTER

The sustainability of this project is directly related to the value of the program applications. Value will be added to this project by our ability to measure the quality of treatment, improved documentation, enhanced workflow, and increased revenue. For example, a study on the use of the EHR provided by the telemedicine network that already exists, demonstrated an average of a 35% increase in revenue from participating hospitals. Moreover, as noted in the text, the quality of treatment and documentation improved. The 35% increase in revenue will more than cover the expense of either the network upgrade or expansion.

Sustainability is always a question of concern after the end of any granting period. Our goal is to obtain future funding to support this network initiative. If we are unable to obtain future funding it is our belief that providers participating in the network will realize substantial benefits from participation. The various program applications we will provide will result in better treatment and increased revenue for participating entities.

MONTANA

1) HEALTH INFORMATION EXCHANGE OF MONTANA, INC. (HIEM)

Revenue

The HIEM goals are based upon long-term viability of the network and therefore require a steady and robust stream of revenue which includes both structured fees for access to the network based upon membership and usage and other revenue generating options. These include:

- 1) Membership Fees: Dues paid by those organizations with representation on the HIEM board.
- 2) Subscription Fees: Monthly or yearly fees charged to organizations enlisting the services of the EHR.
- 3) Per Record/Transaction Fee: Usage fee charge to organizations on a per record basis. Currently, the HIEM is assessing the number of claims filed between the six network partners to establish a benchmark for potential revenue which may be generated by these types of user fees.
- 4) Personal Record Fee: One of the benefits of the proposed solution is the capability for consumers to access their own personal electronic health record via the internet. A nominal yearly access and maintenance fee of \$1 will be charged to consumers wishing to utilize

As part of Year One activities, the HIEM will perform extensive market research and analysis, to determine a fair and reasonable fee structure for services for HIEM members, non-profit non-HIEM members and for-profit non-HIEM members and others.

Ultimately, the network is strengthened by each contributing organization's membership and dues and therefore dues-paying members and fee for service end-users will be recruited to support the HIEM organizational structure and to assist with the ongoing costs associated with long-term sustainability.

Finally, to reiterate additional revenue generating opportunities previously outlined in Section Five of this proposal, HIEM also seeks to generate matching funds as dictated by the grant to pay for costs not covered by the fund, including long-term sustainability of the network itself.

1. HIEM anticipates assessing each network member a rental fee for node equipment and a service fee for bandwidth. Additionally, HIEM will also provide miscellaneous contracted network services to each HIEM member and therefore also seeks to become a provider of miscellaneous network services and a clearing house for network trouble tickets for HIEM network members and users.
2. In later phases of network management, HIEM may seek to create comprehensive service agreements and network service agreement with HIEM to maintain not only their

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connection to the HIEM network but also to maintain each member's internal phone and computer networks. HIEM could begin to collect revenue from its members to sustain essential operations, allowing members to benefit from consistent service and a common base of experience, knowledge and expertise regarding equipment management. For example, it may become known by HIEM network staff that one node location has had a bad equipment experience. They can eliminate any bad equipment experience at a second location. The proposed HIEM network as a whole will benefit as HIEM will support the structure and evolution of each individual member's internal network to one consistently enforced set of implementation and labeling standards. Eventually this could foster uniformity and interconnectivity of systems within the individual organization, the network itself, across regions and across the nation. Ultimately this may also allow for greater levels of integration. Network members would be able to more easily leverage scale in purchasing and could disperse costs of costly network and administrative services. Additionally, the smaller locations could greatly benefit from the shared expertise and practices that could be developed by HIEM on their behalf.

3. HIEM also seeks to investigate the opportunity to begin providing services as an ISP to network members and end-users thus reducing overall network access costs.
4. HIEM intends to pursue opportunities which support allowing the pilot network to evolve to become a carrier. Once again, the network connectivity speeds which HIEM proposes approach (OC12+). Therefore, HIEM could easily make the most commonly available services for phone, cable and internet services available to end-users who meet the qualifications for any other member or user of HIEM services. Additionally, the HIEM pilot network seeks to develop a network containing "dark" or unutilized fiber optic strands. Ultimately, this could allow for network traffic to not only be isolated logically, via router software configurations, but also physically isolated by lighting spare "dark" fiber within the backbone cable itself. HIEM may be able to test and utilize this potential opportunity expressly by carrying traffic for other operating companies either already servicing an area, or looking to expand to another area or region, where HIEM node resides, in compliance with FCC rules and guidance.
5. The pilot project proposed by HIEM focuses on a bold strategy to build a true redundant network and will also likely create a unique homogenous, contiguous and controlled environment which can be leveraged to support IT and telehealth related research. Network bandwidth could be isolated or provisioned to be sold to companies and researchers who wish to experiment and test deploy products, particularly those application that are affected by latency issues or designed to operate simultaneously at multiple locations. This option would be in keeping with the health mission of the HIEM members but would require marketing efforts within the academic and commercial research communities.
6. Finally, the network pilot project proposed by the HIEM indicates significant capacity to move impressive volumes of data. This new network could therefore serve the local, regional, statewide and international health community with health care specific records & image storage and disaster recovery services.

7. Data centers of this type may require joining with new partners and participants or investing in additional capital expenditures and marketing efforts to reach additional qualified users.

A combination of any or all of these measures will be utilized by the HIEM to fund ongoing and long-term sustainability of the proposed network.

2) MONTANA HEALTH RESEARCH AND EDUCATION FOUNDATION

Each MHTA member network is based on a hub and spoke system. The hub sites serve as the administrative office for the network and sponsors the majority of the cost to maintain the network. Each spoke site on the network commits to an annual budget that includes network management and equipment maintenance. The self sustainability of this program is more feasible because of the broad base of funding for the individual network sites. The first year of FCC funding will support incremental growth of those networks based on strategic and business alliances and each individual facility will cover their own costs associated with network growth. Growth within the networks will not occur for expansion purposes alone; there will be a strategic and business reason for enhanced activities.

The Consortium members aligned in this proposal are committed to establishing a sustainable statewide healthcare secure broadband network. One of the first tasks for the Project Manager will be to work with the consortium to conduct a design study to define the needs of healthcare facilities in the state and the specific services and programs those facilities will need. The design study will also identify the services and programs that may be most likely to provide grant funding(private or public sector) opportunities so that the matching requirements of the FCC pilot project can be met in order to implement and sustain activities.

The MHTA planning committee met numerous times deciding the most appropriate approach to expanding network capacity in Montana. A thorough and thoughtful consideration of numerous options occurred through several meetings both in person and over the videoconferencing systems in order to determine the most cost effective plan for the state using existing strengths and relationships. The last thing we wanted to do was to build a network that could not be sustainable beyond grant funds - cost neutrality was ever present in our minds. That is why we decided on a two year phase-in plan that will allow our rural and underserved partners to continue to **use** the existing universal service program to provide the best economic opportunity for interconnectivity. We also recognize that the second year of this project will be a much larger undertaking and we are poised to accept that responsibility both in terms of program implementation and in securing the required matching funds.

NEBRASKA RURAL NEBRASKA HEALTHCARE NETWORK

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The sustainability of the entire project will be a direct result of RNHN and Mobius working together. If this project were attempted by either party separately, it would be unsustainable. The hospitals could not afford the initial investment and the operating costs and Mobius could not develop enough business from the communities it serves to invest in the fiber facility. Working together, both the hospitals and Mobius can utilize each other's strengths and opportunities to make this fiber connectivity possible. Mobius is paying for 15% of the project that would not be funded by the Commission and 100% of the operating costs in exchange for four fibers. Mobius will utilize the fibers to cover internal connection needs and to provide commercial connections to businesses and residents in the communities.

NEW MEXICO
HOLY CROSS HOSPITAL

Overall sustainability of the TAG will depend upon a high volume of utilization and quality of telemedicine services that meet the defined health care needs of the rural communities, their providers and patients within the region. Continued adoption and investment in the Grid by the rural communities and the health care provider organizations will be based on perceived and demonstrable value in improved access, more effective distribution and sharing of health care services. Furthermore, objective evidence of improvements in health outcomes will justify the continued investment, as well as reimbursement by third party payers for health services provided via telemedicine over the Grid. Sharing the TAG among many stakeholders and avoiding silo systems also offers the economy of scale to assist in maintaining this network of networks. In addition, if the TAG proves to offer enhanced reliability, QoS, security, surge capacity, and appropriate redundancy that provides means for disaster recovery, local, state, and federal agencies will more likely provide additional resources and funding to maintain the Grid so that the system will be in place to meet the needs for homeland security, emergency preparedness and disaster response.

The TAG also offers cost savings to the health care system through improved sharing of resources, effective distribution and access to health services that lead to decreased travel costs for patients, families and providers. Further, this enhanced access can provide improvements in continuity of care that provides prevention of subsequent complications and more expensive health services, particularly for patients with chronic disease. Those values will lead to continued sustainability and integration of telemedicine into the health care system.

Arizona Telemedicine Program

The Arizona Telemedicine Program has budgeted for the matching funds described in the budget request. The network upgrades and enhancements that are requested will not only increase the capacity of the Arizona Telemedicine Program's role as a telemedicine network service provider, but will additionally increase security and make it more cost effective for new network members to join and connect to the network.

ATP has been in operation over 10 years and has a successful and sustainable network membership based business model already in place. These enhancements and upgrades will bolster that ATP network and position it to grow as the demand for telemedicine services increases. For purposes of this proposal, ATP has only budgeted for two initial years of the FCC Pilot program. In subsequent years, ATP expects to apply for additional infrastructure funding to further expand and strengthen its regional network through the addition of redundancy and higher speed connections to accommodate increased demands for 24/7 network telemedicine services. Each year of proposed equipment upgrades stands independently as an operational improvement to the ATP network infrastructure that can be built upon in future years. The leased line portion of the proposed budget will relieve ATP and its members from the high costs of leased line services in support of telemedicine and will potentially allow ATP to accelerate the pace of network improvements in future years of the FCC pilot program by allowing ATP to apply for funds that are now devoted to leased line costs for infrastructure improvements.

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University of New Mexico Health Sciences Center Carrie Tingley Hospital

The links will be fully self-sustaining for as long as the computers, Web cameras, and software are functional. Links between sites will be maintained as part of the direct communication needs of each site. Warranty on the laptops should help cover the cost of computer failure. Funding to replace outdated equipment might be needed in the future.

Presbyterian Medical Services

PMS' staff can absorb the support of the additional sites and services, but our biggest challenge will be the cost of ongoing maintenance charges for the network. PMS is requesting an additional \$513,600 in the second year to offset hardware and network maintenance expenses. We believe we can approach sustainability of the improved network by allowing PMS to extend our service offerings and become more attractive to payers. Increasing services and encounters will raise productivity and improve our revenue and our ability to cover increased expenses related to network maintenance and connectivity. PMS will be in an improved position to respond to Pay-for-Performance (P4P) initiatives by extending the reach of our providers across our service area. A robust telehealth-enabled network will give us the ability to apply for grants, contracts, and funding to provide services such as childhood obesity counseling, diabetes, cardiovascular risk reduction, and other critical areas of treatment.

UNM, NMSU, NMIMT

The current, low speed network is already self-sustaining. We intend to purchase dark fiber and equipment with one-time, capital funding to eliminate the monthly fees for some of the existing circuits. The savings will be used to offset the increases in maintenance and long haul (e.g., 12) costs. All of the network backbone and a majority of the connected sites will use this approach. A draft business plan has been developed to recover costs of connectivity. This plan will be completed and implemented based on available capital funding for the network expansion. The new network would only lease circuits where dark fiber was not available. This lower cost approach enables us to continue the self-sustaining model. Ultimately, the ongoing costs of the network are borne by customers using the new services. Our experience has shown that rural areas will readily pay for service that they could not otherwise obtain.

Albuquerque, Navajo, Phoenix, and Tucson Areas of the Indian Health Service

Sustaining I2 access beyond the two-year pilot period is a challenge. Similar to the existing FCC Rural Health Program, the Pilot Program establishes funding support for broadband I2 access that would otherwise be unaffordable for participating IHS Areas and regional IHS/Tribal facilities. The IHS Southwest Telehealth Consortium will carefully monitor project development and regional improvements in access to care. Ongoing analysis will help determine the potential for continuance of regional I2 access beyond the pilot funding period. Importantly, I2 access for Southwest Tribal and IHS facilities will be standardized from the "edge" of the IHS WAN in Albuquerque and Rockville, MD. Such standardized access will offer benefit to other IHS and Tribal facilities nationally. Based on experience gained with Internet2-based network-to-network connections for enhanced telemedicine service delivery, Indian health facilities in the southwest and across the country may elect to develop a cost-sharing model that

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will permit project continuance beyond the pilot period.

Tucson Indian Health Service

Tucson area network will be 100% self-sustaining. I2 connectivity along with local circuit access will continue to be funded and supported beyond the two-year pilot period. Along with the existing Universal Service funded circuits, the Pilot Program establishes funding support for Internet2 access that would otherwise be extremely costly to IHS Areas and facilities. This Area IHS will monitor the project and assess improvement for enhanced access to health care resources to IHS and Tribal facilities.

UNM Center for Disaster Medicine

The UNM Center for Disaster Medicine will integrate the improvements in telehealth capacity created in this project into its overall mission. This will include continued participation in telehealth-supported education and training of health professionals in New Mexico and Arizona, funded by a broad base of local and federal sources. The increased capacity will create additional opportunities for funding for both training and emergency response by CDM.

NEW YORK

1) ADIRONDACK – CHAMPLAIN TELEMEDICINE INFORMATION NETWORK (ACTION)

The five year cash projection shows a break even annual cash flow, however it is anticipated that revenues will exceed these projections. Both CVPH Medical Center and Adirondack Medical Center are working on electronic health record systems for physician offices in their areas. They plan to host these systems and sell them as a service to physician offices throughout the region. They project that all physician offices will be utilizing this service by 2012. Since the ACTION is the mode of connectivity of these offices to the hosting facility, we anticipate a very large percentage of physician offices will become ACTION customers. New York State has set a five year deadline for physician offices to have electronic health record systems up and running. After the first year of operation the reserve cash on hand will not be allowed to go below \$250,000 so that there is a reserve in case of emergency.

Additionally, we have projected only 40 healthcare service providers as customers over the five year period out of a potential number of approximately 300. This number is likely to be extremely conservative, however, we based this on very preliminary discussions with some providers and chose to be conservative in our projections.

2) THE INSTITUTE FOR URBAN FAMILY HEALTH

The largest hurdle to the expansion of the Institute's network into its Mid-Hudson Valley sites and community-based programs is the associated start-up costs, as detailed in the proposed project budget. The Institute's experience with the implementation of the HER in its New York City network bear out the need for initial funding for implementation. Ongoing maintenance costs can then be absorbed as operating expenses.

Several aspects of the proposed project are expected to enhance efficiency. Patient computer stations in the health centers will enable patients to update their demographic information and print out health information from their own records, such as children's immunization history, freeing up providers and office staff for other duties. Teleconferencing and telelearning capabilities will facilitate staff coordination and communication among health services and enhance educational opportunities, and will also reduce lost time due to travel. Programs serving transient populations at a variety of sites will have the benefit of a centralized EHR that will eliminate duplicative services. Some pre-implementation costs, such as maintaining a medical records department, will be shifted to the maintenance of the EHR.

The Institute has actively sought, and secured, grant funding to support initiatives related to the EHR such as the development of clinical decision supports and integration with public health registries. Over the longer term, we anticipate that the investment in a networked electronic health records system will provide financial benefits to the institution as insurers move toward pay-for-performance payment systems. The system both supports and documents health care quality improvement initiatives and outcomes.

3) FORT DRUM REGIONAL HEALTH PLANNING ORGANIZATION

The North Country Telemedicine Project incurs most of its costs during the development of the physical network. Once the fiber optic network is built, with all 30 connection sites live, the ongoing costs of the network still represent only a fraction of what the facilities are currently paying for telecommunications services. The cost savings from a network standpoint are staggering, without taking into effect the clinical cost benefits that will be realized when patients are retained via telemedicine consults.

Clinical Cost Benefit

Together, the five specialties of general surgery, cardiology, gastroenterology, oncology, and pulmonology represent more than 20% of the cases that are transferred from the North Country to Syracuse. These cases also represent greater than 25% of the charges. Ultimately we found a cost differential for transferring as compared to retaining the case ranging from \$4,500 to more than \$11,000 per case, depending on type. Adjusting for those cases that would have to be transferred either because of acuity, patient preference or other reasons, we projected a potential cost savings of nearly \$4.11 million just for these five specialties. Retaining 5% of the other 30 specialties had the potential to realize another \$2 million in revenue for local hospitals. All told, retaining \$6 million worth of services in the North Country would equal a 4% improvement in local healthcare inpatient revenue.

At its core, telemedicine reallocates resources from a constrained location (the urban medical center) to sub-optimized, rural facilities. The downside to the urban facilities is relatively minor in comparison, as the total drop in case volume should have only a small impact on overall contribution margin. For these overburdened facilities, the opportunity to minimize transfer of less complex cases will allow them to improve throughput and concentrate care for higher acuity patients. Further, the addition of telemedicine has the potential of actually increasing referrals for cases that are more appropriate (and cost efficient) for the tertiary facilities, based on the stronger provider relationships that telemedicine creates.

Reimbursement

As of September 1, 2006, both Medicare and Medicaid will reimburse telehealth services to some extent. Medicare will cover consultation, office visits, individual psychotherapy, and pharmacologic management delivered via a telecommunication system. Medicaid will pay for medically necessary emergency room and inpatient hospital telemedicine consultation by specialty physicians. CMS requires that both types of consultation be via a fully interactive audio and video telecommunications system that permits real-time communications between the distant site physician and the Medicare beneficiary⁶, while also supporting the review of diagnostic tests integral to the consultation,

The chart below outlines the payer mix by product line for the specialties described above. The percentages are the average across the four tertiary facilities included in the project:

Product Line	Payer	Percentage
Cardiology	Medicaid	10.2 %
Medicare		53.3 %

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Gastroenterology	Medicaid	9.5 %
Medicare		42.3 %
General Surgery	Medicaid	9.8 %
Medicare		35.6 %
Oncology	Medicaid	36.9 %
Medicare		24.4 %
Pulmonology	Medicaid	16.4 %
Medicare		48.3 %

Currently none of the private payers reimburse for telemedicine, though payers in the Rochester region are considering demonstration projects for telemedicine coverage. The following chart outlines private payer percentages by product line, as a sum of Blue Cross, Commercial, and HMO:

Product Line	Private Payer Percentage
Cardiology	21.2 %
Gastroenterology	34.2 %
General Surgery	38.7 %
Oncology	32.8 %
Pulmonology	23.4 %

4) RURAL HEALTH TELECOM A DIVISION OF KOXLIEN COMMUNICATIONS, INC.

After the completion of this pilot program, all ongoing monthly costs outlined in this proposal are eligible for funding under the current rules of the USAC – RHCD program for all rural healthcare participants. Net costs for services to the rural health provider will be the comparable urban rates.

This network is to be self-sustained by:
 USAC – Rural Health Care Funding Mechanism (current rules)
 Additional revenue generation
 Radiology services
 Replacement of current Internet costs will be applied
 Cost reduction in general telecom costs
 VoIP Long Distance
 Video connectivity
 IT Support

NORTH CAROLINA

1) ALBEMARLE HEALTH

The network can be self-sustaining with an effective provider outreach campaign that encourages substituting their current ISP costs for a service with greater broadband speed and telemedicine capabilities, more secured networking and expanded administrative IT efficiencies. A successfully engaged provider is interested in:

- Office efficiency
- Improved patient care and communication
- Decreased liability, and
- A clear return on investment.

While industry experts estimate that no more 16 percent of the provider practices used computers in exam rooms, a local assessment of our region shows 98+ percent of providers have some kind of computer system in place.

Albemarle Health has been aggressively demonstrating and providing education and training about the benefits of electronic health information since early 2000. The next step is to help providers make an information technology assessment for their medical practices that demonstrated return on investment.

Albemarle Health will develop an information technology seminar that will insure a practice can be reasonable sure they have made the best possible decisions. The Seminar@) will provide a “how to approach that includes:

- Why join the broadband revolution
- What the Albemarle Health Network Telemedicine Initiative has to offer.
- How to conduct a needs assessment
- Conduct research
- Develop a request for proposal
- Conduct a return on investment analysis
- Set up vendor demonstrations
- Check referrals
- Negotiate the best deal possible for upgrades and new equipment

If all of the above steps are followed, the practice can be reasonably sure it has made the best possible decisions and will be more willing to advance their participation in a regional network.

2) THE SOUTHERN PIEDMONT PARTNERSHIP FOR PUBLIC HEALTH AND THE NORTH CAROLINA ASSOCIATION OF FREE CLINICS

We plan for the model developed here to be sustainable with a business model that partially depends on USAC funding for rural areas and otherwise depends on the generation of

value for the public, healthcare providers, medical researchers, employers, health plans and population health planning enterprises.

We intend to pursue a model that will bring together a stable source of funding by combining value exchanges with many parties (e.g. medical researchers, health product suppliers, employers, public and private health plans, care providers, private philanthropy, state and federal government, and the public). As opposed to a model that would depend on a single source of funds, we expect that this multi-party approach will provide a more stable funding vehicle, infuse greater value into the health arena, motivate more thoughtful continuing involvement of the key parties in the network's operation and development, and create circumstances where no one party will have undue influence on this community resource. Notably, our marketing studies will explore options that support this outcome.

3) UNIVERSITY HEALTH SYSTEMS OF EASTERN CAROLINA

UHS is actively engaged with potential service providers (ex. Embarq) to identify the most cost efficient means of providing a robust, secure, and reliable network, while leveraging the buying power of a large group of healthcare organizations. Additional funding may be needed and UHS is committed to helping its partners identify and pursue other grant funding that will enable them to fully utilize the network. This may include, but is not limited to, the purchase of Electronic Health Record (EHR) software, telemedicine video station carts, voice and video over IP equipment, and server storage for recording of images (ex. CT scans). UHS is also working with the partner sites to identify solutions that not only improve patient care, but also reduce operating cost. For example, attending a telemedicine course can save a days travel and/or overnight stay

for many of the rural clinics included in this pilot program. Overlaying Voice over IP (VoIP) and its many enhanced services can significantly reduce operating expenses through improved efficiency and reduction of fees paid to telephone service providers. Electronic Health Record (EHR) provides a significant opportunity to improve efficiency and reduce waste, while improving the patient experience and health outcomes. The sharing of information across healthcare organizations via EHR has tremendous potential benefit for eastern North Carolina. UHS and its partners believe that this initiative is an important step in the process and that the residents of eastern North Carolina will benefit greatly from the deployment of a dedicated, secure, reliable, and robust broadband network focused on the support of healthcare.

NORTH DAKOTA
UNIVERSITY OF NORTH DAKOTA

Once the FCC Rural Health Care Pilot Program funding period has ended, the UNDSMHS will maintain its commitment to provide the communications infrastructure to its four campus locations and the ROME sites. This would be necessitated by the Liaison Committee on Medical Education's requirement for UNDSMHS's accreditation that requires a state-wide medical school like the UNDSMHS to provide equal access to educational opportunities to all medical students no matter where they are in the state.

However, elimination of the funding would require that all bandwidths provided would need to be reexamined for cost-effectiveness. Those circuits that were not being used for a cost-effective application would and should be replaced with slower and less expensive circuits. It is likely that analysis of the data gathered on applications hosted on the HCREN will prove invaluable in making the bandwidth adjustments in a fashion that would insure the least degradation in services needed.

OHIO

1) HOLZER CONSOLIDATED HEALTH SYSTEMS

Holzer Consolidated Health Systems is committed to ongoing quality improvement and implementation and maintenance of remote disaster recovery systems. HCHS recognizes that this commitment requires ongoing financial expenditures. HCHS therefore will include the maintenance of this network as a portion of its ongoing operational budget for the life of the network.

2) NEO RHIO AND ONECOMMUNITY HEALTHNET PARTNERSHIP

There are a number of reasons healthcare stakeholders in Northeast Ohio have established a RHIO. NEO RHIO provides the opportunity to share health information and to increase the efficiency of the community's healthcare delivery system as described in the preceding case studies. This saves costs while improving the health of individuals in the community. In addition NEO RHIO directly supports the continued development of healthcare as a leading industry in the region that already shines in the areas of healthcare, education, and industry. By bring these services to the rural community the NEO RHIO will enable everyone within rural and urban communities throughout the region to have access to quality health care.

A. NEO RHIO Members Have Existing Health Practice Partnerships with MUAs

Most of the MUAs in Northeast Ohio have existing practice relationships with multiple health practices and hospitals in within the Northeast Ohio RHIO. These service relationships typically require transfers within the health network without the benefit of e-Medical Record or the transfer of a health consumer's medical file. By providing broadband services to the MUAs ; NEO RHIO will enable them to have access to the same medical information, telemedicine diagnostic support and disease management services.

B. Aligning Quality for Health Forces in Underserved and MUAs

The expansion of NEO RHIO would place this region at the forefront of efforts to advance safety, quality, and efficiency of healthcare, as well as improve access through health information technology.

In Northeast Ohio, several employer, payer and foundation-led supported efforts are underway to implement cost containment / quality improvement programs. The Health Action Council of Northeast Ohio (HAC) (<http://www.healthactioncouncil.org/>) is a Cleveland-based non-profit group led by purchasers that offer health benefits to employees, dependents and retirees. HAC members provide healthcare benefits for more than 1.5 million lives. They provide value to members by working together, and with community stakeholders (physicians, hospitals and health plans), to improve the quality and moderate the cost of health care. HAC has lead multiple quality initiatives including the Cleveland Health Quality Choice program, encouraging Leapfrog patient safety reporting among hospitals in Northeast and Central Ohio, and coordinating the Plan

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Performance Project, using eValue8, an RFI through the National Business Coalition on Health, to focus Ohio health plans on quality of care.

In Summit County, the Northern Ohio Health Care Summit has convened stakeholders to explore potential solutions to the rising cost and shrinking access to healthcare. The Employer Health Purchasing Corporation of Ohio (EHPCO) (www.ehpcoco.com) is a Canton-based organization of over 100 member companies representing over 400,000 covered lives. It blends traditional purchasing activities with programs that provide financial incentives to physicians who participate in quality initiatives that improve the care of patients with chronic diseases while limiting the variability and cost of their care.

In addition, Robert Wood Johnson has funded the Aligning Forces For Quality effort which is a combined community effort with the underserved, safety net, MUAs and healthcare providers in Northeast Ohio.

C. Professional Development and Wellness Education

By connecting the designated rural and MUAs and underserved communities to NEO RHIO; we intend to provide the rural healthcare community to have access to medical professional development, diagnostic support, and disease management continuing education. In addition it is the belief of the health community that continued wellness education and disease management for the community will reduce the demands on the existing health care system and lower the cost of health care in the future.

3) ADENA HEALTH SYSTEM AND O'BLENESS HEALTH SYSTEM

The Southern Ohio Health Care Network, as proposed, will be sustainable due to:

- Support from the two largest non-profit health care systems in the region.
- Buy down of capital costs to keep recurring costs within the budget range of the rural providers.
- Existing expenses for T-1's and other communications facilities will remain committed to the overall project.
- Increased reimbursement for telemedicine services.
- More effective sharing of expertise within the region.
- Continued support from the Rural Health Care program.

OREGON

OREGON ASSOCIATION OF HOSPITAL AND HEALTH SYSTEMS RESEARCH AND EDUCATION FOUNDATION (OREF)

The main barrier for rural hospitals and clinics to join the current age of telecommunications has been the steep nonrecurring costs associated with getting adequate broadband capacity to their facilities. Once the initial capital costs are invested, on-going monthly costs are expected to be sustainable, especially for rural locations eligible for ongoing subsidy from the FCC's universal service fund rural health program. OHN will be sustainable when Oregon's healthcare, health education, public health and emergency management entities all find sufficient benefit to pay the ongoing costs. Connecting the existing Oregon health networks together should provide a sufficient critical mass of health sites on the network to make it attractive for other hospitals and clinics to join OHN, provided the costs are affordable. Building upon this critical mass, the most vital component of both participation and sustainability is the principle of *Value Added*. The OHN costs are of two types: 1) new sites without current broadband access, and 2) a nominal additional cost to proposed sites that are already a part of an existing network. It is projected that OHN costs will be acceptable and desirable to both groups of core constituents on the basis of *value added*. Those **values** are multifold as follows. First, those sites without broadband **access** are simply now denied the expanded and enhanced quality of care that is inherent with telehealth capacities. Secondly, those core constituents who are currently connected to a local or regional network, network users are frustrated by both the limitations of access to other healthcare entities as well as to the **reliability and quality** of service level now being experienced on their telecommunication networks. Access on existing networks is usually limited to a relatively small number of members who are either in a local area, or members within a single system. Existing networks, which often rely on circuitous, out of state Internet transport, find that even basic services such as video conferencing, suffer from maladies such as dropped data packages or jitter: a service quality that bodes ill for the more quality sensitive telemedicine applications.

Value added by the OHN for new and existing telehealth users includes direct **access** to any health, health education, emergency management entity in the state of Oregon, and via Internet 2 or Lambda Rail, to a national health related constituency. **Quality** is insured by expanded capacity, retaining data locally or in state, and improved system quality and **reliability**. We believe that these enhancements will garner a vibrant and active OHN constituency, and sustain their continued involvement.

Value added is additionally a component of **services**. It is the intent of the OHN to provide critical services to OHN members including, technical assistance, support in grant and subsidy applications, group purchasing and vendor relations, and advocacy and facilitation for expanded telehealth applications and reimbursement.

A final value added component will include improving **affordability**. **Affordability** of the OHN will be approached from several perspectives. First, when the OHN actively begins its procurement process, RFPs will encourage vendor responses that approach middle mile and last mile solutions from the perspective of creating additional local/regional networks. This will

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allow new sites being brought on to experience the benefits of reduced costs derived from network-to-network connectivity vs. independent, single site connections.

Secondly, the OHN will consider and explore all viable options for group rate savings, some of which, such as costs for basic Internet access, may be substantial and may significantly reduce the costs of membership in the OHN system. The prospect of group-negotiated rates and services are heightened by the volume system of telecommunication users presented by the OHN.

Thirdly, the OHN intends to actively seek support from the USF in the following ways:

- Waiving the current distance component of the USF subsidy calculation and allowing a differential calculation between rural site costs vs. low urban site career costs.
- Additionally, we seek to include FQHCs as eligible for USF support, regardless of setting, because of their critical core participation as described above.
- Finally, we seek permission from the FCC to treat basic network management costs, as an allowable monthly unit cost, recoverable from the USF subsidy and reimbursement structure.

A most important aspect of the OHN sustainability plan, as previously described, is to expand the number of OHN participants. The larger the base over which to spread fixed costs, the lower the costs will be per participant. The OHN has been projected as a sustainable model at 750 users/members. OHN will recruit membership from all health facilities in Oregon, whether or not eligible for USF subsidies. In addition OHN will recruit membership from among other Communities of Interest relevant to healthcare. The initial communities of interest that have been identified are a composite of relevant Oregon Licensees as follows:

Oregon Licensees

Retail pharmacies www.pharmacy.state.or.us 1,090
OR Healthcare Assoc (assisted. living, in-home, nursing homes, etc.) 570
Ophthalmologists http://www.bme.state.or.us/search.html 725
Diagnostic Radiologists http://www.bme.state.or.us/search.html 690
Radiology http://www.bme.state.or.us/search.html 694
Insurance Carriers (individual medical plans) 12 http://www.cbs.state.or.us/external/ins/consumer/health-insurance/individualplans.htm
Dentists (OR BD of Dentistry 971-673-3200) 3,483
Total

7,264

Initial approaches have been made to these constituencies, and their responses have been positive. We have therefore made initial projections that will be tested by more formal survey measures, and anticipate that OHN users can be expanded by a minimum of 50%. Anything beyond 750 members/users (an additional 240 members over the core membership of 510) will bring further cost reductions and relief to core constituents. These revenues will continue to be captured and will be applied and distributed to rural and small core OHN constituent members on a formally developed sliding scale basis in order to stimulate and support their adoption of additional telehealth and telemedicine applications. The full implications of the OHN revenues/expenses and sustainability over a five-year period (required for full network sustainability) are represented in Table 9 in Section XII above.

Collectively, OHN will actively pursue the cost reduction strategies outlined above and apply them as cost savings to the rural and small size participants—serving those most in need of telehealth capacities is the basic premise of the OHN, as it is a critical dimension of improved quality care. The sustainability plan of the OHN has been developed to support a viable, ongoing OHN operation, with technical monitoring and network management oversight as a component of the cost structure. Because affordability is an important component of the OHN plan, the initiatives that will be undertaken by the OHN over its initial years of operation will be calculated to improve affordability, thereby ensuring a sustainable OHN operation.

PENNSYLVANIA

1) GEISINGER HEALTH SYSTEM

As part of the workplan assessment and, with experience, our partnership will develop a cost structure for sustaining the network. This may be based on usage and scaled for size of the institutions and practices participating. Sustaining a network continues to be a topic that the RHIOs also are addressing. We will tap into the work that is being done by those groups. Likewise, our AHRQ grant requires a sustaining plan for the three hospitals sharing the Master Patient Index, a basis for our plans.

2) THE JUNIATA VALLEY NETWORK:

Our goal is to create a health care high speed broadband network that is within our means to sustain after federal funding has been completed. One of our long-term costs is going to be the telecommunication costs that will be necessary to connect each member to the network. Our for-profit partners will be paying these costs during the grant period. We need to have our local practitioners pay these costs themselves at the beginning of the project so when our grant period expires they will already be covering one of our significant expenses. Their commitment to pay these costs is evident in the individual Memorandums of Agreement (MOA) that the for-profit practitioners have signed (see Appendix B)⁷. Our objective has been to convince them upfront that the costs of the telecommunications are justified by the benefit they will receive from access to the JVN. The vast majority of all practitioners in the service area of Lewistown Hospital have already signed similar MOA to participate in the projects funded by the USDA DLT grants the hospital has received. During the process of having the practitioners sign these earlier MOA they were so happy at the thought of gaining access to our clinical information system that the costs seemed inconsequential to them.

In regards to telecommunications costs for the major hospitals, and for the non-profit health clinics, these health care facilities have already been incurring significant costs for connecting to the Internet at speeds that are inadequate for future proposed telemedicine projects. For what the hospitals are currently paying for T-1 lines they will be getting speeds up to 100 Mbps for the same cost. It is really a no-brainer for the CEO's of these organizations to agree to continue to participate and pay the ongoing telecommunications costs. The JVN will charge non-profit rural health clinics the same rate as for-profit rural health clinics once the grant expires. We anticipate at this time that these costs will be less than \$105 per month. Each of the hospitals and most of the non-profit clinic have also signed a MOA and these can be found in Appendix B.⁸

We will also vigorously pursue additional grants from USDA and other sources, such as the Appalachian Regional Commission, to build new telemedicine applications that will now be possible with the JVN in place. In addition funding will be sought to support further expansion of the JVN such as broadband wireless. Our area does have a proven track record of finding Federal funds to support telemedicine applications and we have also shown that we know how to handle these funds effectively and create successful projects that provide great health outcome benefits to our community.

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Lewistown Hospital has incorporated our telemedicine network into our existing clinical information system, thereby folding the long-term costs into our existing cost for maintaining information systems. It is important to understand that from the hospital's perspective practitioners such as physicians are customers in much the same way that patients are. By providing them with access to our telemedicine network we are giving them a service that other hospitals may not be offering them and therefore encourage them to utilize our facilities. This access to the technology they need to provide better service to their patients is also related to retention issues. We hope to show new physicians that we have the same access to technology that larger and better funded hospitals have. By having the technological benefits that these new physicians might get at a larger hospital we can equalize the playing field to some degree. After that we then have to stress the higher quality of life in our rural environment to counteract the lower annual earnings for a physician in our service area. This same principle applies across the region to all the participating health care facilities.

But nonetheless the hospital will face long-term recurring costs for software and hardware maintenance. It is clear that the hospital must fund this system regardless once the quite substantial initial investment is made. To pull the plug on the network would be to pull the plug on the hospital itself and that is just not going to happen. We have convinced our Board of Directors that information technology (IT) is important to the future of the hospital. One way that this is evident is through the recent promotion of our CIO to be on the senior management team reporting directly to the CEO. This gives IT the exposure needed to insure proper levels of funding for future years.

Funding for telemedicine services through reimbursements will be an ongoing challenge for all the health care facilities in the JVN. We will need to continually address this issue and keep vigilant in understanding new legislation and new methods to try to recover some of our costs. Here is an area where the JVN Consortium members can make connections with other telemedicine networks in the nation and try to share information amongst ourselves to learn more about cost recovery methods.

The passage of Medicare, Medicaid, and SCHIP Benefits Improvement and Protection Act of 2000 (BIPA) made it easier to get reimbursement for some Telemedicine activities. These changing legislations must each be closely reviewed to see how reimbursement policies change. One way we think that new legislation will benefit us is with teleradiology. This will benefit us when we utilize teleradiology because we will be able to charge Medicare a \$20 fee each time our system is used. However other store and forward techniques such as lab work or cardio-pulmonary are not currently covered by Medicare. We plan to work closely with our state office of rural health on this issue and also to identify this as a problem to our local Community Health Partnership.

The members of the JVN are all interested in accessing advanced telemedicine services that the larger urban health centers in Pennsylvania such as Hershey Medical Center, Geisinger, and the University of Pittsburgh Medical Center (UPMC) wish to offer our small, financially strapped rural health care facilities. We are aware that some of these facilities are also applying for FCC funding. We will coordinate our JVN activities with these larger urban facilities.

Ultimately the larger urban health care facilities must understand that our smaller facilities can not afford the telecommunication connection costs that they would like us to pay. They need to understand that they need to bear a fair portion of these costs and they need to build these costs into their business model. While we would like to access all available telemedicine services we can also not afford to go bankrupt doing so as this would in the end not benefit the citizens of our service area.

3) PENNSYLVANIA MOUNTAINS HEALTHCARE ALLIANCE (PMHA)

A dedicated regional network of PMHA hospitals can be self-sustaining once established, primarily from cost savings and cost avoidances. Total annual cost savings are expected to be \$504,000. Total annual costs for the network once constructed are \$573,120. Assuming that the RHC funding mechanism continues at its current level of support (25%), costs savings combined with RHC fund support would provide adequate funding for the network to be self-sustaining. Considering that market prices for Internet connectivity are likely to decrease over time and the cost savings realized from telemedicine applications in the member hospitals is likely to increase over time, it is conceivable that the network will be able to be completely self-sustaining in the long run.

4) THE PENNSYLVANIA STATE UNIVERSITY

Each of the partner institutions as well as the Penn State Hershey Medical Center has extensive experience in managing local-area and wide-area networks. As part of this experience each institution has reviewed the projected cost (both capital and operating costs) associated with the project and is committed to sustaining the network once it is established. While there is presently no insurance reimbursement for many of the programmatic efforts we propose to deliver over the network, we expect that the efficiency gained by enhanced telecommunications and telehealth capabilities will yield savings at each institution. In addition, ongoing interest by FCC and USDA in continuing to fund infrastructure and Distance Learning and Telemedicine programs gives us confidence that we can successfully seek additional grant funding to support the network.

SOUTH DAKOTA

1) *AVERA HEALTH*

In year 3 and beyond, the HUBNet partners anticipate three possible scenarios related to sustainability. In the first scenario, the Pilot Project replaces the current Universal Service, Rural Health Care (RHC) program and funding continues at up to 85%. In the second scenario, the FCC reverts to the current RHC program with little to no change. In the third scenario, the

FCC phases out and eventually eliminates all funding. The HUBNet partner's strategy will depend on which scenario arises. Through its Great Plains Telehealth Resource and Assistance Center (TRAC), Avera Health is working with the Federal Office for the Advancement of Telehealth (OAT) to demonstrate the value of telehealth applications and describe how this value relates to overall business plans.

All services that the HUBNet partners provide over the network are necessary for the survival of the health systems. Therefore, the required bandwidth and connectivity for each of these services is necessary and thus, each of the partners will ensure that the bandwidth is available. In general, the partners will fund the costs of the wide area network from operating budgets.

FCC Pilot Project support will provide the necessary "kick start" needed to make network infrastructure improvements necessary to greatly expand telehealth services across the region. The current need for infrastructure improvements has arrived more rapidly than anticipated, partly because of the rapid demand and need for telehealth services. Cost savings resulting from the telehealth network will also foster sustainability. Cost savings from reduced travel is one element that the health systems use to justify the costs of the network. For example, at the current rate of \$0.48 per mile, if staff from the hospital in Aberdeen, SD attend a meeting held in Sioux Falls, SD by video, they avoid an all day excursion and a 400 mile round trip, or roughly \$196 in expenditures for 1 vehicle for the day. If 10 meetings are held during a month, \$1,920 in costs per month are avoided. In addition to the hard savings, the staff is able to avoid several hours of unproductive windshield time and available to tend to matters locally.

Physician time is also saved through the implementation of telemedicine. This not only saves costs for travel, but allows the physicians to generate more revenue by seeing more patients with the freed time. A year long study at Avera Milbank Area Hospital, a CAH, concluded that \$24,456 in services was provided locally as a result of telemedicine and included specialist ordered services such as bone scans, ultrasounds, x-rays, and CT studies, as well as various lab tests. These services allowed 67 patients to remain in their home community near family and friends (which facilitates faster healing) instead of having to be transferred to Sioux Falls, 152 miles away. The provision of these services in the rural community helps maintain the economy of that local community.

There are other reasons beyond cost savings that ensure the network will be maintained. Avera eICU care is one very important service that is provided for which the health system cannot charge. Patient care significantly improved with decreased morbidity and mortality in

the intensive care unit. **Centers for Medicare and Medicaid Services (CMS) regulations prohibit adding a specific telecommunications related fee to patient bills. Additionally, most private insurance plans follow CMS regulations.**

The following are the sustainability plans for each proposed scenario:

First Scenario:

In the event that the FCC replaces the current RHC program with a program that mirrors the Pilot Project, the HUBNet partners will be able to maintain the network as designed and potentially accelerate further network development. The 15% cost match will be borne by the partners and easily justified via the value generated by the network. The network partners would continue to fund their portions of the costs out of operations.

Second Scenario:

The current RHC program has been beneficial thus far to the HUBNet partners and they will have no trouble sustaining the current level of costs with the RHC subsidies. These costs have been manageable and are funded out of operating budgets. Since the current RHC program does not fund equipment, the partner organizations will continue to fund the capital costs involved through their respective capital plans. This will mean that certain expansions or additions to the network (in Year 3 and beyond) will happen at a slower pace than the Pilot Project will allow.

Third Scenario:

The scenario in which all Universal Service funding for rural health care organizations is phased out and ceased completely is the most challenging for the HUBNet partners. The current program subsidizes a significant portion of the networks and if the hospitals and clinics involved are forced to shoulder the entire burden, some setbacks would be incurred. It is anticipated that the level of bandwidth would have to be reduced, not eliminated, such that video-based telehealth services would need to be scaled back. Impacts of bandwidth reduction would include increased transmission times for teleradiology.. Network endpoints would also see increased response times for clinical and financial information, as well as internet access. To the extent that FCC support after Year 3 could be gradually reduced, the organizations involved would be better able to absorb the costs, as opposed to a quick reduction in funding. As the FCC's goal has been to increase the use of the fund, this is not a likely scenario.

Summary:

To summarize, because of current regulations, sustainability cannot be achieved through some form of revenue generation through the network. Instead, sustainability is justified by comparing the costs to the benefits. The costs are the on-going monthly line and service charges while the benefits include cost savings and cost avoidance, increased quality of care for patients, better utilization of scarce physician resources, and ensuring that electronic patient information is available wherever the patient is being treated.

A basic level of bandwidth can be maintained without Universal Service funds. However, the funds do allow the partners to increase network capacity much faster than without any subsidies. Additionally, the amount of services that can be provided simultaneously over the

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network is enhanced by the subsidies as they allow the expansion of bandwidth beyond what the organization is financially able to finance.

2) SANFORD HEALTH COLLABORATION AND COMMUNICATION CHANNEL

This network will be self-sustaining though support from Sanford Health Telehealth and Telemedicine yearly operational budget. **As** a regional health care organization, sustaining a collaborative network is in the best interest of Sanford Health to enable **the** highest quality of care, safety, and convenience for our patients and their communities.

TENNESSEE

1) ERLANGER HEALTH SYSTEM

Over time the planned network must be capable of paying its own way. Initially the network will likely need to be subsidized by Erlanger and EPB until it can be established with connectivity to the primary hospitals in the service area and linked to other regional networks such as Blue Ridge EMC's and Balsam West. This initial subsidization should not be a substantial burden as the network will be operated and maintained under contract by EPB which has their own fiber network across their electrical service area and thus the planned rural health care network will be able to take advantage of an existing economy of scale and only be an incremental expense. EPB along with Blue Ridge EMC are limited open access while Balsam West is fully open access. This accessibility will allow for the entire medical community to generate entrepreneurial uses of the network, and thus create revenue opportunities to help underwrite and sustain the network going forward.

2) TENNESSEE TELEHEALTH NETWORK

Based on CHN's projected number of subscribers at the end of year two, and an analysis of system service costs compared to expected income generated by payers, TTN will be 100 percent self-sustaining 24 months after it is established. CHN's analysis assumes that connectivity prices will drop by 25 percent over a two-year period of time, and that reduced rates and the financial and other benefits of participation in the network programs will result in subscriber willingness to renew their TTN service contracts. After the second year, the three percent surcharge applied to the monthly connectivity charge for 446 subscribers should result in annual revenues of \$96,336, which should be sufficient to cover salaries and benefits for the two positions created to serve the network. However, CHN may re-evaluate and increase the surcharge to ensure sustainable operations. Any unforeseen shortfall or expenses may require reliance on state grant funds (\$80,000 of the \$350,000 is reserved for such contingencies) until the number of subscribers exceeds the "breakeven point" where fixed costs/contribution per unit output are sufficient to maintain a self-sustaining network operation.

With respect to ongoing state support for the TTN initiative, over the long-term, the State of Tennessee believes that telemedicine can bring significant cost savings in health care for taxpayers as a result of earlier and improved diagnosis and treatment, reduced travel costs, and fewer needed visits to specialists. This is a major impetus for the significant investment the State has already made into the development of ITN and TNII. In addition to funding and other resources that have been devoted to these initiatives, the State is taking a strong, proactive role in pursuing the adoption of new State legislation and regulatory directives to increase the reimbursement of telehealth expenses through health programs administered by the State. These programs include the State's Medicaid program (TennCare), the State's health plans for State employees, and the State's new insurance programs for the uninsured (Cover Tennessee). The State will also seek to actively promote telehealth reimbursement from private payers. Currently, at least five private payers in Tennessee reimburse for telehealth visits (AdvoCare, Blue Cross Blue Shield, Bluecare, Cariten Pref and Cigna). State law already provides for licensure of telehealth practitioners in Tennessee.

TEXAS

TEXAS HEALTH INFORMATION NETWORK COLLABORATIVE

The two primary issues with sustainability are value to network users and the cost of being attached to the network. A clinic or hospital that derived no value, either through cost reductions, improved outcomes or incremental revenue from its use of the network would not be inclined to continue its use, almost regardless of cost. If the organization recognizes these and other benefits, it may well determine to continue using the network, even if the economic burden increases. While the sustainability of the network cannot be guaranteed, it is believed that the existing applications and those that will emerge over the program life will provide the incentive to remain on the network.

However, if the network costs exceed the direct financial benefit of the user or if the cost is simply too high, the users may leave the network. There are several resources for additional funding to help prevent the cost from reaching that point, even if the support funding is discontinued. Among these opportunities are:

- Increasing the node user charges to the proportion of heavier using members to subsidize the smaller rural users.
- Charging for-profit health care users a higher rate than the public and non-profit users, another method of providing some subsidy.
- Seeking to supplement existing funding by securing additional funding through state and Federal programs and funds, such as the Texas TIF, the Texas enterprises Fund (to encourage development of cost lowering commercial health care applications), USDA, US HHS, and other federal agencies concerned with and funding rural support programs.
- Charging health care application vendors THINC membership fees and possibly supporting vendor displays at the annual meeting. This practice is common with many commercial and other associations, and often provides a substantial portion of their operating budget.
- Possibly selling additional or excess bandwidth on some circuits via VPNs to community networks, including public safety and educational users.
- Other health care network circuits could be sold to pharmacies, hospices, nursing homes, etc, in the same format as the for-profit hospitals and clinics.

The conclusion this leads to is that there are a number of methods that can be used to ensure sustainability of this health care network. Like any business, value grows over time as does the potential to be self-supporting. The long term existence of the network is most likely assured if THINC can maintain its operation and continued growth over the next five to seven years.

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The network fully recognizes that in order to generate sufficient return and demonstrable value for the public investment of the proposed rural telecommunications infrastructure, an important calculus of the proposed network deployment must entail a sound sustainability plan and strategy. As such, we present the following fundamental business considerations that will constitute the core strategy of network's sustainability plan:

- a. A plan for the network design, architecture, deployment, and sustainability will include a mechanism for ongoing planning and assessment of member and community needs, as well as refinement of network implementation approaches and strategies. This will be a Board of Director's approved process, based on the Project Management Team's consensus and recommendation, to ensure that the rural hospital participants and the communities they serve will have input into the planning process.
- b. The network sustainability strategy will be based on a combination of a member fee and well as a service/application user fee. A percent of the participants' costsharing will come back into the network pay for recurring/incremental operational costs and ongoing activities, including its long-range leadership, staffing needs, and capital needs. By providing a network of value to the members' financial commitment will be sustained. The ROI/cost-benefit analysis will measure the value of network's value to its members.
- c. Alternative sources of network revenue may come from expanded network membership to include nodes such as public health entities, community clinics and health centers, and physician groups/offices. In addition, other potential revenue streams may come from strategic partnerships and alliances, such as regional education and research networks, the University Health Sciences Centers, the Public Health Information Network, and the telehealth and telemedicine centers, among others. Network buying power will be leveraged with third-party providers of network content to keep costs low. Finally, the network will leverage its corporate partners and other private and public entities through sponsorship opportunities and fund-raising activities.
- d. The network will develop a plan to build financial reserves by acquiring funds from diverse sources to meet both long-term operational and capital needs. The network will set service fees at an appropriate level above the cost of service and staffing overhead to provide funds for long-term operational and capital needs.

UTAH
UNIVERSITY OF UTAH

The Utah Telehealth Network is built upon a sustainable model. Investments supported through network member fees, user fees, contracts, the University of Utah, and a State of Utah line item. In many cases, telecommunications improvements will replace existing T1 lines. Investments made with FCC funding will strengthen and improve the existing program.

Some locations with multiple T1s, like Utah Navajo Health System, may actually *save* money after Ethernet is installed. Utah Navajo Health System currently has seven T1s. The UNHS network engineer has indicated that one Ethernet connection may have less recurring costs than the current T1s. UTN, Intermountain, and other partners in this project rely on the current program administered by the USAC Rural Health Care Division, applying for and receiving discounts for telecommunications lines on behalf of its rural member health care facilities. It has made our current networks possible by keeping infrastructure costs to a reasonable level. If, after the Pilot Program, the FCC decides to provide on-going funding for Ethernet services, there will be many additional sites in Utah who will then be able to participate.

VIRGINIA

1) THE UNIVERSITY OF VIRGINIA

The University of Virginia has had an active Telemedicine program for eleven years. The Office and a number of remote sites are funded by the UVA Health System. Many of the initial efforts to establish rural healthcare Telemedicine sites were funded with grants from both the federal government and the commonwealth. All of the grants have expired and the program keeps expanding. The rural healthcare providers have seen the benefit of broadband communications not only for Telemedicine and Teleradiology purposes but also for transmitting patient records and billing and registration purposes. There are a number of sites within the existing and proposed network that are self funded. Those sites that are eligible make full use of the USAC RHCP funds which greatly helps them with support for their communications costs. We envision that increasing the bandwidth to a number of these remote sites will enable them to better utilize the network for a minimal increase in expense.

The University of Virginia will continue to seek out other sources of funding such as through the United States Department of Agriculture, Rural Utilities Service and the Department of Health and Human Services Office for the Advancement of Telehealth to enhance service delivery to the citizens of Virginia. We will also continue to seek ways to enhance reimbursement for telehealth services. We work closely with the Virginia Department of Medical Assistance Services (DMAS). DMAS has supported reimbursement of telehealth facilitated services since 1995 and is committed to exploring opportunities for changes to Medicaid telehealth reimbursement that could lead to better health outcomes for Virginia's Medicaid recipients while enhancing the sustainability of telehealth service providers.

Finally, the lessons learned about the most effective way to manage services and the lessons learned through the proposed "use cases" from this Pilot will inform us and the FCC of drivers of utilization beyond that which we know already works. We have already demonstrated over time that telehealth is a sustainable venture in rural Virginia. We foresee this Pilot as being a catalyst for exponential growth of telehealth in the Commonwealth.

2) WEST VIRGINIA TELEHEALTH ALLIANCE

The plan for sustaining network operation is spelled out in the response to number 9 above and the Strategic Plan that is attached. As noted above, the Strategic Plan provides that the WVTA will mature into a self-sustaining organization promoting a flexible, scalable, secure, and cost-effective network infrastructure capable of electronically linking all communities through telehealth applications within West Virginia. The FCC funds will be used to launch the Alliance. It is seeking funding under the FCC Pilot Initiative and from state appropriations, private foundations and other sources to supplement member contributions and assessments to complete the initial build-out, deployment and enhancement of the network, including the requisite studies of gaps in the system and the cost of connecting participants to high-speed services and will recruit a sufficient number of participants to assure that WVTA is self-sustaining after the expiration of such grant or FCC funds. The financial plan is set forth in the Budget that is attached as Attachment 2.

WASHINGTON

Washington Telehealth Consortium

The estimated recurring annual cost to sustain Phase 1 activities (beyond Year 1) is \$30,240, which will be covered by a nominal annual WTE Member subscription incurred by the participating telehealth networks. The WTC will seek funding on the behalf of the participating telehealth networks to reduce or complete off-set these subscription fees. The viability of the WTE will depend on the WTC’s ability to provide value to its members and incentive for continued collaboration. In consideration of the imperative to deliver value, the WTC will demonstrate that access to a statewide telehealth network will provide the following benefits to various stakeholders across Washington State:

Stakeholder	Needs Addressed	Benefits Gained
Rural Hospitals & Clinics	Affordable access to telehealth services	Viable access to mission critical telehealth services.
Tertiary Care Centers	Convenient access to an interoperable statewide telehealth network	Increased access to patients & rural providers
Vendors	Sustainable telehealth business models	Broadened access to telehealth market
Payers	Reduced cost of reimbursable health services	Cost effective real and measurable benefits
Patients	Access to high quality, affordable healthcare	Timely access to needed healthcare services

The Washington Telehealth Consortium seeks to establish a broadened market, in the state of Washington, for the provision of free and fee-based telehealth services and applications over a statewide network backbone.

It is anticipated that membership fees will be the main source of revenue for the eventual statewide network (possible state subsidies may be available). Initially, membership fees will be levied by the WTE to existing Private Telehealth Networks on behalf of their members. This will likely change as disconnected sites are added to the network and a permanent network design solution is adopted.

WTE Web Portal operation will be supplemented by the sale of advertisements in addition to membership fees.

With the creation and launch of the Washington Telehealth Exchange, the telehealth market in Washington will transcend geographic and proprietary boundaries by creating an open market for competition in telehealth service provision.

Sustainability Proposals of FCC Rural Broadband Pilot Projects

Creating and fostering increased levels of competition in Washington's telehealth market will result in more and less expensive telehealth service and application choices for hospitals and clinics in rural and underserved communities. As well, broadening the telehealth market will give telehealth providers more financial incentive to serve the niche market needs of rural hospitals. Access to telehealth resources on a statewide basis will assist rural hospitals and clinics in identifying, recruiting, and retaining qualified physicians, clinical specialists, and technicians that offer the delivery of their services via telehealth methods.

Although membership to the Washington Telehealth Exchange statewide network is open to all relevant and interested healthcare organizations in Washington State, only non-profit entities will receive subsidy or financial assistance in connecting to the network architecture.

For-profit network participants will be required to fund their own access to the WTE Interconnection point as part of Phase I. Depending on ultimate network design results, for-profit network participants will not be eligible to receive any subsidy in funding their connection to the proposed statewide network in Phase II. Additionally, for-profit network participants may pay higher membership fees than their nonprofit counterparts.

WISCONSIN

1) RURAL WISCONSIN HEALTH COOPERATIVE

Shared EHR:

Shared EHR planners have devoted over a year to an intensive vendor selection, vendor negotiation, and business planning process that accounts for all costs associated with the project and demonstrates on average a 25% savings with the collaborative model over standalone implementation of the same vendor's system(s). Shared EHR project participants will be signing 5 year service agreements that will guarantee the networks sustainability, with each participant committing to paying their fair share of Shared HER costs, including connectivity costs and the other costs identified in this proposal.

Due to the high cost of high speed connectivity in rural areas, Universal Service Funds will remain important to keeping connectivity costs on par with the cost of connectivity in urban areas. Even without Universal Service Funds, the Shared EHR project planners have shown enough cost savings to guarantee indefinite sustainability.

Other Telemedicine:

Ongoing expenses often prove to be a significant challenge in the continued operation of telehealth networks. In response, WTSN formed an alliance to gain a broader base of support, and share the costs for equipment, maintenance, personnel, and transmission systems. WTSN members enjoy greater purchasing power when they share costs for equipment, maintenance, personnel, and network transmission. Transmission expenses for monthly recurring access, usage, and bridging service are prorated based on each site's monthly activity.

Federal/State/private funds, third-party reimbursement, and service contracts have been critical in sustaining the WTSN network. (In Wisconsin, Medicaid reimburses for telepsychiatry services.) Network participants have also taken advantage of the Universal Service Program for Rural Health Providers. Going forward, WTSN will rely on multiple funding streams in addition to the ones identified above, including: network user fees, grant funding, hospitals billing for ancillary services, and the recruitment of new members. Administrative and educational use of the network in addition to the clinical usage, will also lend itself to a sustainable model.

Revenues, though not always tangible in these cases, should be calculated as best as can be determined and offered as real cost savings to the business model. The group also believes that multiple usage of the network infrastructure is the key to sustainability. This allows for the subsidization of the non-revenue generating applications by applications capable of producing revenue.

2) ST. JOSEPH'S HOSPITAL

Ongoing maintenance cost will be shared among participants. End telecommunications equipment will be the responsibility of the individual entities. Annual maintenance costs are pooled to cover the costs of locating as well as fixing any damaged cable.

WYOMING

THE STATE OF WYOMING

Developing technology for health care interventions in rural populations involves significant investment of both money and time. Rural providers generally operate in small clinics or hospitals, for which such an investment is a major barrier. Moreover, many rural providers are unfamiliar with the technology available or its potential benefits and are therefore reluctant to adopt it. Together, these barriers can negatively impact rural health care in two ways: (1) they prevent many providers from taking advantage of the benefits that technology can offer, and (2) they cause problems in recruiting into rural practice newly prepared providers, who both know the value of technology and expect a certain level of it to be available.

Establishing a dedicated telehealth network for the hospitals, mental health clinics, and substance abuse treatment centers in Wyoming will provide a foundation for developing applications that can help providers in the state become more familiar with the available technology and, perhaps more importantly, become more comfortable with adopting and using it. Clearly, however, the network must be sustained over time in order for this to take place. This section addresses the ways in which the Wyoming Telehealth Network can be sustained.

Table V below outlines the estimated ongoing network costs.
Table V. Estimated ongoing costs for the Wyoming Telehealth Network.

Annual network line costs	\$383,616
Annual network line maintenance cost	\$39,282
Annual network management cost estimates	\$26,600
Annual steering committee/ board cost estimates	\$10,100
Estimated equipment upgrade costs (Based on 5 year rotating replacement)	\$71,300
USF annual network line reimbursement (Estimating 30% reimbursement)	-\$115,084
Total estimated network annual costs	\$415,814

For the Wyoming Telehealth Network to continue its mission after the pilot program funding ends, these costs must be addressed. The Steering Committee and the network partners that they represent will devote considerable attention to this issue after the activities of designing and installing the network have been initiated. The planning committee has, however, already identified a number of options and concerns related to sustainability.

First and foremost, the members of the network must be educated about USF reimbursement. Some hospitals already are taking advantage of the USF program, but not all. We expect that the Steering Committee can provide assistance in applying for these funds by providing examples or potentially group applications.

Secondly, we hope to secure state funding, possibly following models such as the Nebraska Statewide Telehealth Network which is supported through a combination of USF

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reimbursement, state funding through the Nebraska Universal Service Fund, and a minimal consortium fee. Application to Federal grant programs such as those available through the HRSA Office for the Advancement of Telehealth or the USDA Rural Utilities Service Distance Learning and Telemedicine program will also be explored; the University of Wyoming has significant experience in working with these programs and can lead the application process, as it has with this program. The Montana-Wyoming Area Indian Health Board could be another potential source of funding through grants or membership fees, as the Wind River Indian Reservation (one of the largest in the country) is located in central Wyoming and could benefit from telehealth connections throughout the state.

There are a number of other ways that continued support for the network activities could be found. The Social Security Administration is currently conducting a video consultative examination pilot program in Wyoming. The purpose of the SSA pilot is to show that mental status exams for initial consults, reconsiderations, and continuing disability reviews for individuals applying for disability due to mental health reasons is more cost effective if done through videoconferencing. Initial project data demonstrates that there is a cost savings of approximately \$100 per consult plus travel time. If the pilot project is successful, the SSA will benefit from having a robust Wyoming telehealth network to support an expanded program, and they have expressed willingness to explore financial support for a larger network.

A membership model has been successful in other telehealth networks, and we certainly plan to consider this as a way to sustain this network. Network administration and members will inventory possible constituents that may benefit from telehealth availability and explore opportunities to secure grants, user fees, or membership fees. Group purchasing organizations would be used to lower costs of network equipment and connectivity costs for the members.

Fee-for-service activities can also help defer network costs. Some possibilities for these include:

- Non-member healthcare use. For example, a large number of educational and clinical opportunities are provided by the WWAMI (Washington-Wyoming-Alaska-Montana-Idaho) Medical Education Program. A number of healthcare clinics and colleges would have interest in participating in these through a video medium and could be charged for their use of the network systems.
- Non-member community use. Systems could be made available for a fee, to be used for appropriate uses to the community during downtimes to maximize usage.

Equally important as funding to the sustainability of the network is the demonstration of the value of telehealth to the network members and the constituencies they serve. The Wyoming Telehealth Network will focus on the development and implementation of a set of core competencies and applications based on the expertise, interest, and needs presented by members. To maximize the opportunity for success, the network will focus on developing only a few new programs each year. The network will provide accurate reporting of activities and statistics to its members, which will demonstrate the value of the network and facilitate decision making by

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member organizations. The network will also enlist the aid of the Regional Telehealth Resource Centers in order to share the knowledge, experience, and support they offer.

Active participation and commitment to the network by its members are also key. Commitments of at least three years will be encouraged for network members through Memorandums of Agreement. The network plan will address formalization to define the rules for participation and set boundaries for the network activities. This will facilitate coordinated and consistent operations. Member education is another key component to network long-term success and sustainability. Members will be fully educated about system capabilities to enhance their decision making regarding projects and applications.

Another important factor is good communication among the members and the administration. There are a number of technology-based tools that can be implemented to ensure this, including a network Web site, video and/or audio meetings, webinars, newsletters, site visits from network administration, and regular network email updates.

Finally, physician support and involvement is critical to long-term sustainability. Several physician champions have been identified throughout the state and are already involved in projects such as development of electronic health records, transmission of trauma transfer information, e-prescribing and using videoconferencing for education, all appropriate activities for use on a statewide network. We are confident that the establishment of the Wyoming Telehealth Network will continue to demonstrate to health care providers the value of telehealth for improving the access to, and quality of, health care to the residents of our state.