

**FCC Pilot Program Quarterly Report  
April - June 2011  
Erlanger Health System**

**1. Project Contract and Coordination Information**

a.b. Identify the project leader(s) and respective business affiliation

Douglas Fisher (Project Coordinator)  
VP Government & Community Affairs  
Erlanger Health System  
975 East Third Street  
Chattanooga TN 37403  
423-778-9642  
douglas.fisher@erlanger.org

Hale Booth (Associate Project Coordinator)  
Executive Vice President  
BrightBridge Inc.  
PO Box 871  
Chattanooga, TN 37401  
423-667-2077  
hbooth@BrightBridgeInc.org  
Fax 423-424-4262

c. Responsible organization  
Erlanger Health System  
975 East Third Street  
Chattanooga TN 37403

d. Coordination throughout the state or region.  
Erlanger Health System continues periodic discussions with other health care providers across the region regarding the network system as Erlanger seeks to meet specific needs of the individual health care providers.

**2. Identify all health care facilities included in the network.**

For the initial FCC funded rural fiber healthcare network the facilities listed below are primarily the same as those proposed in the application. All of these facilities have submitted a Letter of Agency on behalf of the Erlanger Health System project and are included in the 465 and 466-A postings.

Copper Basin Medical Center  
144 Medical Center Drive  
Copperhill TN 37317  
RUCA Code 10  
Census tract 9504  
Contact Alexander Altman, CEO/CFO 423-496-8126

Public,  
non-profit  
eligible

Erlanger Bledsoe  
128 Wheeler Town Road  
Pikeville, TN 37367  
RUCA Code 10  
Census Tract 9531  
Contact Douglas Fisher, 423-778-9642

Public  
non-profit  
eligible

Erlanger Baroness (including Children's)  
975 East Third Street  
Chattanooga, TN 37403  
RUCA Code 1  
Census tract 4  
Contact Douglas Fisher 423-778-9642

Public  
non-profit  
eligible

Erlanger North  
632 Morrison Springs Road  
Red Bank TN 36415  
RUCA Code 1  
Census Tract 109  
Contact Douglas Fisher 423-778-9642

Public  
non-profit  
eligible

Hutcheson Medical Center  
100 Gross Crescent Circle  
Fort Oglethorpe, GA 30742  
RUCA Code 1  
Census tract 307  
Contact : Debbie Reeves Intérim CEO 706-858-2000  
(Erlanger Health System has taken over management and operation of north Georgia based Hutchison Medical Center effective in April 2011,

Public  
non-profit  
eligible



the proposals to the RFP. A contract has been executed between Erlanger Health System and EPB for network design. This work on design of the network will begin as soon as a Funding Commitment Letter is issued.

**4. List of connected health care providers.**

Not applicable at this time.

**5. Identify the following non-recurring and recurring costs, where applicable show both as budgeted and actual incurred for the applicable quarter and funding year to date.**

	Budgeted	incurred
a. Network design	45,000	0
b. Network equipment	360,000	0
c. Infrastructure deployment		
i. Engineering	0	
ii Construction	956,600	
d. Internet2, NLR	0	0
e. Leased facilities	1,125,000	
f. Network management, maintenance, O&M	0	0
g. other	0	
Total	2,586,600	0

**6. Describe how costs have been apportioned and the sources of the funds to pay them.**

- a. Explain how costs are identified, allocated among and apportioned to both eligible and ineligible network participants.

The network will initially only serve eligible participants which are non-profit health care providers and at least one free standing emergency care department of a for profit hospital, which is eligible under the criteria. Generalized expansion plans have been developed and funding applications will continue to be submitted to serve a planned future broader range of rural hospitals and primary health care providers, some of which would be defined as ineligible participants for the FCC funded network. If and when non-FCC funding requests for this health care network expansion are successfully funded and these additional rural health care providers become a part of the system, this issue of apportioning costs will be addressed with the funding agencies. It is anticipated that when the time comes to add ineligible network participants, the rural healthcare network will assess a reasonable one time up front fee to these ineligible participants based upon anticipated bandwidth needs and let the ineligible participants manage their own capital costs for “last mile” access to the network.

Rural Healthcare Network project partners have also successfully applied for additional funding opportunities available through the ARRA “stimulus bill” for use with the telemedicine network. In October 2009, major “stimulus” funding was announced by DOE for one of the public existing service providers in the service area. This development has positively benefited the rural healthcare network by paying for a portion of the needed fiber construction, on which the healthcare network will ride.

- b. Describe the source of funds from:
  - i. Eligible pilot program network participants.

Network participant hospitals are not being asked to contribute to the 15 percent project match as most of these rural partner hospitals are struggling to simply stay in business and keep their facilities open through the current severe economic downturn. (Out of necessity project staff have been investing considerable time during the course of this project in seeking federal funds to keep both the Copper Basin Medical Center in Polk County, the North Valley Medical Center in Sequatchie County, and Hutcheson Medical Center in north Georgia open for business).

The initial matching funds contribution for assistance in network construction from the local non-profit Electric Power Board of Chattanooga (EPB) was considered ineligible by the FCC Order issued on November 19, 2007. This complicated things for the project. Alternatives had to be developed and pursued as sources of local matching funds.

Some of these alternatives such as a video bridge to manage the network have been discussed with USAC staff and it was determined that these potential alternative sources of matching funds were not eligible, even though they were real program costs that would be incurred by Erlanger Health System. As a result of these difficulties in providing an acceptable match the Board of Directors of BrightBridge Inc. (a regional non-profit economic development corporation assisting EHS with this project) approved the use of Direct Congressional Appropriation funds previously appropriated to BrightBridge Inc. for use in construction activity to complete matching funding of the FCC project. BrightBridge staff traveled to Washington DC to meet with HUD officials who have financial oversight of these matching funds to review the proposed use of these Direct Appropriation funds to match the FCC grant. At this meeting HUD officials agreed this rural telemedicine network is an acceptable project which meets the guidelines of the grant and requested that staff submit a revised environmental assessment and other forms.

Erlanger Health System has also received \$352,000 in additional project grant funds from USDA Rural Development for non FCC-eligible network equipment that is being placed in rural hospitals.

As previously mentioned, one of Erlanger Health System's existing service providers, the non-profit Electric Power Board of Chattanooga (EPB) received notice from DOE in October 2009 that EPB's grant application for SmartGrid funding (which was prepared by BrightBridge Inc. and coordinated with the rural healthcare fiber network plans) was selected for \$111,567,606 in DOE funding to match a local EPB commitment of \$115,139,956. A significant portion of this new DOE funding has been used to extend high speed fiber "wall to wall" across the multi-county service area of the Electric Power Board. This additional fiber construction has now been completed and is a major project development for the Rural Health Care Fiber Network. Now there should not be any FCC funded fiber required to be constructed in the large EPB service area as the healthcare network data can lease capability and "ride" the EPB fiber. This will hopefully allow the FCC funded fiber to reach further into rural areas and help position the rural healthcare fiber network for additional future expansion.

Project planners have held meetings with other non-profit regional electric distributors and have determined that there is significant fiber available in these adjoining utilities which while not commercially available, can be made available to the rural health care network by the utilities in a pre-lease arrangement. This again will increase the effective reach of the health care network in a cost effective manner by reducing the need for new construction.

These very positive developments are anticipated to reduce participant cost to an operating and maintenance fee which will be projected as part of the network design process. The target spot for this operating and maintenance fee is slightly less than the price of a T-1 for up to 10 mg service. If this can be achieved it will allow approximately 6 times the bandwidth for approximately the cost of a traditional T-1 connection.

Erlanger and the various project partners are also looking long term toward a non-profit partnership for ownership, operation and maintenance of the network which results in some of the partners bringing matching cash equity to the project as well as other needed investments. The partnership under development would be Erlanger Health System, BrightBridge Inc. a SBA, HUD, EPA (etc). certified non-profit economic development corporation and some area public

power distributors which have the staff, rights-of-way, fiber and physical capability needed to maintain the fiber network. Preleasing service and the availability of fiber connectivity, will not initially require such a partnership. However, the long term expansion and growth of the network can be better served by this type of non-profit partnership. Now that network design services have been contracted, organizational structural arrangements for this partnership can develop more quickly.

ii. Ineligible network participants.

Not applicable (at this time).

c. Show contributions from all other sources

i. Identify source of financial support and anticipated revenues paying for costs not covered by the fund and by pilot program participants.

The FCC grant award for the Rural Healthcare Fiber Network has enabled the project to leverage a sizable investment of federal and local funds to assist with costs not covered by the FCC grant. Major costs and funding have been as follows: a) planning, project administration; and network management equipment; b) operating equipment; c) CBMC radiology equipment; and d) DOE fiber funding.

- a) Erlanger Health System continues to incur costs for planning and project administration assistance along with costs for network management equipment. These costs are not covered by the grant and are currently being paid by Erlanger Health System. Grant eligible costs are not being incurred at this time as EHS is waiting for the first Funding Commitment Letter (FCL). However planning and project administration for pre-bid documentation such as Sustainability Plan, LOA's, FCC form 465 submittals, Request for Proposals, 466-A Forms and supplemental documentations have been completed. In addition Erlanger Health System has invested \$228,065 in purchase of a codian bridge to manage the network.
- b) The need for operating equipment to interface with the FCC funded fiber network is an essential component not funded by the FCC grant. To meet this need, Erlanger Health System successfully applied for telemedicine equipment funding from the USDA Rural Development Distance Learning Telemedicine program. This funding request was for non-FCC eligible network equipment to be located in rural Copper Basin Medical Center in Copperhill, Rhea County Medical Center in Dayton, Erlanger Bledsoe in Pikeville, North Valley Medical Center in Dunlap and

Erlanger Baroness in Chattanooga. These telemedicine stations have been bid and purchased and agreements have now been executed for the remote deployment of these telemedicine stations. They will initially operate over an existing patchwork system of lower capacity leased copper lines such as T-1's.

- c) One of the key needs that initially emerged out of network planning with Copper Basin Medical Center involved tele-radiology. Copper Basin was the only hospital in the pilot project without a PACS or digital imaging system, from which important diagnostic imagery could be transmitted over the FCC funded rural healthcare network. A commitment of federal funding through the Appalachian Regional Commission was secured to assist with the purchase of a portion (fifty percent) of the PACS system, for Copper Basin Medical Center. The balance of funding for this system was included in the previously mentioned USDA Rural Development Distance Learning Telemedicine grant awarded to Erlanger by the USDA. The PACS equipment is now in use; EHS requested and disbursed the remaining USDA funds needed to complete the purchase payment for this PACS equipment.
  
- d) As mentioned previously in this report, the US Department of Energy (DOE) awarded major DOE funding to the local non-profit Electric Power Board to complete comprehensive installation of high speed fiber throughout the rural portions of their six county service area. Project administrative staff worked with the Electric Power Board of Chattanooga (EPB) to prepare, write and submit an ARRA SmartGrid Investment Grant Application to the Department of Energy. This grant application to the DOE Office of Electricity Delivery & Energy Reliability, while an electrical system application, included extensive installation of a high speed fiber communications network to all customers and areas of the multi-county EPB service area. The majority of these areas served by the grant are outside of the urban core of Chattanooga and are characterized as very rural. DOE announced \$111,567,606 in grant funding for the project in October 2009 and installation has now been completed during the previous quarter. While not a direct part of the FCC funded project, this has significantly leveraged the FCC funding as the DOE funding has paid for construction and development of some of the necessary fiber that had been previously anticipated to be installed as part of the FCC project. This in turn will allow the FCC funded Rural Health Care Fiber Network additional flexibility for fiber leasing or construction to potentially serve even more distant rural locations for the FCC funded healthcare

network. In essence this could be a way to expand or improve planned service to additional rural public health centers in the region.

- ii. Identify the respective amounts and remaining time for such assistance.

No additional time is needed to raise financial assistance. That is now done. All RFP have been posted and the first contract for network design has been negotiated and executed. Raising eligible matching funds in the current economic environment has been a time consuming task which initially delayed the project. The total FCC project budget submitted is \$2,586,600. The source of funding is \$2,198,610 from the FCC Pilot grant and \$387,990 in local matching funds which are from an awarded Direct Congressional Appropriation grant to BrightBridge Inc.

Erlanger Health System is investing additional hundreds of thousands of dollars of local funds designated for purchase of network equipment necessary to manage and operate the fiber network. A large portion of this Erlanger investment, \$228,065 has been expended on a codian bridge needed to manage the network.

- d. Explain how the selected participant's minimum 15 percent contribution is helping to achieve both the selected participant's identified goals and objectives and the overarching goals of the pilot program.

Erlanger Health System has planned the deployment of the FCC Rural Fiber Network from the inside of their health system out to the rural partners. As part of this systemic process, Erlanger has identified necessary equipment capacity needs for the network that can grow with the network over time. This telemedicine investment along with the FCC Pilot grant supports Erlanger Health System's role as a regional tertiary care provider and a strong partner for the growth of healthcare services in rural communities. It also positions EHS and partners to grow the network into a component of a future national healthcare fiber network.

The 15 percent matching funds contributed by BrightBridge will be invested as a pro-rata share with the 85 percent FCC funds to help achieve the goal of building the project.

**7. Identify any technical or non-technical requirements or procedures necessary for ineligible entities to connect to the participant’s network.**

At this time, no plans have been developed for ineligible entities to connect directly to the network, so this question is not currently applicable. Recent meetings with rural electric distributors across the region which anticipate supplying fiber linkages has indicated that it will be possible with very little additional expense to serve several additional eligible dedicated emergency centers of rural for profit hospitals. As the system develops, the rural healthcare fiber network certainly anticipates serving dedicated emergency centers of area private for profit hospitals which survive the economic recession/depression; however these dedicated emergency departments would be an eligible recipient under current program guidance.

Erlanger Health System is not aware of any issues around ineligible entities i.e. medical practices and doctor groups interfacing through Erlanger’s hub/network terminus with data carried on the pilot rural healthcare network. This is important to the long term success of the system as the local public Electric Power Board (EPB) of Chattanooga has now completed the investment of approximately \$350,000,000 to extend high speed fiber (“last mile-fiber to the home”) to all of their 170,000 customers throughout their 600 square mile urban/rural service area which is where the vast majority of the regions tertiary care medical specialists live and work. The ability of these specialists to link from any urban location to the hub or terminus of the health care network at Erlanger through EPB’s new fiber network is vital to the long term success of the rural healthcare project and critical to the ability of the network to respond effectively in a crisis or large scale medical emergency as envisioned by HHS or the CDC.

We are assuming that if the FCC network terminates at the participating hospitals, then the participating hospitals can send various data to various other local locations or medical service providers utilizing other secure but non-FCC funded networks such as local area networks (LAN’s), secure wireless networks, private networks, etc. We have reviewed this strategy with staff of the GAO who were researching the FCC Pilot Program and they did not indicate any programmatic compliance concerns with this assumption. This is a very important assumption for the rural healthcare network that will be critical to the adoption and success of our business model.

**8. Provide an update on the project management plan, detailing:**

- a. The project’s current leadership and management structure and any changes to the management structure since the last data report.

The USAC designated points of contact remain the same with current leadership for the project provided by Douglas Fisher, Erlanger Vice

President for Government and Community Affairs (Project Coordinator), and Hale Booth, Executive Vice President, BrightBridge Inc. (Associate Project Coordinator). There are also other key managers within both Erlanger Health System and BrightBridge who are involved in the development of the pilot project.

- b. In the first quarterly report, the selected applicant should provide a detailed project plan and schedule. The schedule must provide a list of key project deliverables or tasks, and their anticipated completion dates. Among the deliverables, participants must indicate the dates when each health care provider site is expected to be connected to the network and operational. Subsequent quarterly reports should identify which project deliverables, scheduled for the previous quarter, were met, and which were not met. In the event a project deliverable is not achieved, or the work and deliverables deviate from the work plan, the selected participant must provide an explanation.

The EHS Rural Healthcare Network has faced delays in implementing the project schedule due to difficulties that have been encountered in raising necessary eligible matching funds and raising necessary equipment funding that is needed by end user hospitals to make effective use of the network. Now with substantial equipment funding in place, equipment acquired and network matching funds coming into place, a detailed programmatic schedule has been developed for the project. The project schedule identifies the project dates for key milestones. Critical milestones have been met during the reporting quarter with the submittal and acceptance of the 466-A package and supporting documentation.

*Schedule for connecting each site to the network and operational* Now that a vendor has been selected for network design, a revised and more current schedule is being developed for connecting each site to the network and making the sites operational.

Some sites will be connected and operational sooner. However, since portions of this project involve the installation of fiber in gaps of proposed routes the timing and priority of site connections will be negotiated as part of the bid award based on both site needs and contractor issues.

*Schedule Changes:*

Erlanger Health System has met the requirements set by the FCC for having completed the process necessary to secure at least one Funding Commitment Letter (FCL) prior to June 30, 2011.

The project was initially delayed due to match issues, planning needs and regional fallout from a national recession/depression. Erlanger Health System had needed more time during the project to raise additional needed matching funds along with raising other funds for non-FCC eligible expenses while also planning how healthcare services will be delivered over the fiber network. EHS has also invested considerable time in developing a basic strategy for delivery of key medical services over the network which is viewed as critical to the sustainability of the network over time. The strategy for delivery of sustainable services over the network has also demonstrated the importance of scaling the number of “partner” hospitals on the network. This need for more partner primary health care providers in turn lead to additional local investment by Erlanger and additional grant proposal development for funding equipment at these potential sites. This has taken considerably more time than originally estimated, while also impacting the facility planning process. Complicating this matter further has been a national economic crisis which has threatened the very survival of at least three of our partner hospitals and required time of project staff to develop funding strategies aimed at saving two of the most isolated rural health care facilities (Copper Basin Medical Center, North Valley Medical Center) and a major hospital partner located in North Georgia (Hutcheson Medical Center).

Some sites selected for the USDA funded telemedicine equipment will initially be served by existing lower capacity internet connections such as T-1’s which will not allow for high speed transmitting of large data files, or good quality digital imagery, or significant multiple applications, but should still provide a good beta evaluation for the ultimate system because not only will equipment be thoroughly vetted, processes and procedures will be tested and changed as needed.

**9. Provide detail on whether network is or will become self sustaining. Selected participants should provide an explanation of how network is self sustaining.**

A sustainability plan has been developed for the project and is attached. The network will prepay leased fiber where available and construct new fiber in gaps where needed. Project staff have been meeting with electric power distributors across the region to map available fiber and plan routing where existing dark fiber is available. In many rural areas these are existing non commercial fiber networks developed for electric distribution system management by rural non-profit electric distributors. In some locations it will be necessary to construct some new fiber along portions of the proposed healthcare route where gaps in existing service are present. The construction of new fiber will create the opportunity for the rural healthcare network to potentially lease excess capacity to generate revenue to help sustain the rural healthcare network. The ability to lease excess capacity is highly dependent on broadband demand which may or may not be present in those rural markets. Therefore the network will look to traditional sources of sustainability such as revenue from the existing Rural Health Care Pilot Program, grants, state

appropriations, in-kind support, membership or connectivity fees, and perhaps a major donors program.

While those traditional sources are critical to sustainability, they are only effective if the network is properly marketed and targeted to meet needs of the participants, provide services and also clearly provide or enhance the opportunity for downstream health care revenue. To be successfully sustained, a regional telemedicine network must meet the clinical, educational and economic needs of all participants. Erlanger Health System views the project as an opportunity to not only partner with member hospitals, but perhaps more importantly reach out to physicians and distant communities as well. Erlanger has utilized a collaborative needs assessment to ensure that what is offered and communicated to members is precisely what is needed to extend care access and offer programs not yet available because of sparse or dispersed populations. Erlanger continues exploring opportunities to partner with target community health and wellness agencies to pursue both State and Federal funds for initiatives that target maternal/fetal health, children's health, and improvement of critical disease states such as diabetes, stroke, obesity, cancer and COPD. Working with the agencies, Erlanger is also developing community-based health initiatives supported by the increased access to specialists and educational opportunities provided by telemedicine.

Sustainability and long term growth will be enhanced by the creation of an ongoing flow of data between network sites which will quickly demonstrate the benefit to physicians, patients and providers. The initial program focus is centered on both stroke and trauma care which are specialty services in which Erlanger is a broadly recognized leader. These are also services that are significant positive revenue generators for Erlanger and which because of their downstream revenue can justify some subsidization of the telemedicine network by EHS if that is necessary.

Erlanger's business model for the initial phase of telemedicine services focuses on development of a regional telestroke network to expand the existing stroke program at Erlanger. The Erlanger Southeast Regional Stroke Center is a recognized national leader in three core areas: clinical care, stroke education and medical research. In March 2009, the national MERCI registry listed Erlanger as the busiest center in the United States in the performance of advanced interventional therapies. In 2007 the center treated approximately 800 stroke patients and by the next year the number grew to 1,118. The telestroke strategy will focus on the FCC project targeted hospitals and will initially use the USDA funded equipment for patient interface. Erlanger recognizes that telemedicine programs are largely mission driven and rely on down stream revenue generated by capture of new market share as well as grants to assist with start up capital expenses. Erlanger launched an extensive public information awareness program to build regional public awareness of the stroke therapies which will be the lead initial service of the telemedicine initiative.

The strongest and most effective telemedicine systems typically begin operating in support of key services essential to the health of distant communities. The stroke

service is an important business unit for Erlanger Health System due to its high profile in the media as well as its excellent reimbursement, profit, and contribution margin. Erlanger projects a modest but sustainable return of over \$200,000 in initial year net income which will help sustain costs of the developing telemedicine network and grow with services over time.

The network plans to pre pay fiber leases which will reduce start up costs. EHS intends to earn initial revenue downstream in the patient care cycle by growing market share and through linking rural emergency care to Erlanger's Level 1 Trauma Center capabilities. In addition network staff will seek network revenue through traditional telemedicine funding sources as well as by marketing initial excess network capacity to help underwrite operational and maintenance costs.

*Additional Quarterly Report Questions for Item 9:*

1. Which scenario's fit your project?

Erlanger solicited Request for Proposals which predominantly followed Scenario # 9 (Prepaid lease) with some remote linkages that must be built, being Scenario #2 (Participant owns 100% of dedicated network; Excess bandwidth is owned for current or future use).

EPB is the predominant fiber network in our service area, through their investments much more rural fiber has become available to pre-lease. Dark or unused fiber is available in significant portions of our rural area through other rural electric power distributors which use the fiber to operate their systems. The rural healthcare network is negotiating a proposal from EPB for 15 year pre-leasing of segments of their fiber and anticipates pre-leasing additional segments of dark fiber from other electric cooperatives through arrangements with EPB. However it is still anticipated that some network links will need to be constructed to access some remote hospitals such as Copper Basin Medical Center and the Rhea Medical Center with desired fiber.

Nationally demand for telehealth services is growing in such areas as ICU monitoring, mobile applications via handheld devices (countless IPAD medical applications now exist), expansion into long term care facilities, home and remote patient monitoring etc. Since we expect the network to continue to grow over time in both connections and content the network solicited proposals to prelease fiber capacity based on scalable demand up to 100 Mb and where fiber needs to be constructed, the network solicited proposals on both 24 and 48 strands of fiber to rural participating hospital locations on a unit cost per mile..

This number of strands will be more fiber than initially needed, but the system is expected to grow substantially over time as new health care provider locations are served and new health care services (including an anticipated move to HD equipment) are developed which will grow bandwidth demand and network traffic.

As a result, the network is anticipating leasing some of the excess fiber on an interim basis to generate revenue and services to exclusively fund the operation and maintenance cost of the rural healthcare fiber network during the early years of operation. Discussions with local non-profit utility systems indicate this is feasible. This is important to helping sustain the network in the early years of operation after the pilot program while network applications and network traffic builds to an expected self sustaining volume. Project staff have reviewed other pilot models to determine appropriate ways to charge for products and services that are a function of the network.

#### 2. Source of 15% funding.

Erlanger Health System is bringing a non-profit group together to provide long term management and maintenance of the actual fiber network. BrightBridge a non-profit regional economic development organization in this partnership is providing the 15 percent matching funds. BrightBridge is a federally certified development corporation that has been involved in the development of EHS's telemedicine initiative since the beginning. Bringing together regional partners for the matching funds is essential in these difficult economic times.

#### 3. Commitments from Network Members.

The BrightBridge Inc. Board of Directors has taken board action approving the commitment of necessary matching funds for the FCC grant.

Prior to posting the RFP, Letters of Agency have been secured and submitted to USAC from all participating Health Care Providers. There is no plan at this time to put a mandatory time frame on length of participation in the network as the network is planned to be market driven by demand for services with no cost of entry to eligible participants, only cost for on site connectivity and pro-rata share of network operation and maintenance that is not covered by other income and the revenue generated from potential interim leasing of excess fiber. All of our participating hospitals must have internet accessibility to run their business and stay in business. The problem is they don't have reliable service, it is not fiber, so it is slow and as a result they are limited on size of data that can be transmitted. As long as our network can exceed these very low standards at a comparable price, the market driven strategy will succeed and maintain the commitment from network members.

#### 4. Sustainability Period: Will you be able to supply plan/budget of at least 10 years.

A proposal from EPB has been selected for negotiation which includes pre-payment of fiber leases for 15 years. This amount must be negotiated with projected construction costs to meet the current network budget. However, based on the initial proposal response, it appears the network can be sustainable, the only question is if the total proposed network can be developed or if fiber connectivity can be established in some locations as an alternative to a build out. That is not yet determined.

Erlanger Health System is planning the rural health care fiber network and telemedicine system to be an integral and permanent part of the on-going health care system and not as a temporary pilot project. We anticipate being able to operate the network sustainably for at least a 15 year period, but once the network is operational it will be necessary to review the cost and benefits periodically to assess if it is performing reasonably.

5. Budget attached to Sustainability: One of the key outputs of the Network Design contract will be the development of a detailed capital budget and an operating budget. addendum for the Sustainability Plan which will include development of network financial projections and a network operation and maintenance budget.

6. Use of the Network by non-eligible entities.

We currently do not have any non-eligible entities that will be served by the network. The rural healthcare network is currently planning to link rural eligible non-profit health care providers in the FCC funded rural healthcare fiber network and will assess the needs/opportunities of additional eligible for-profit dedicated emergency centers.

To expand or scale the telemedicine network and reach other rural hospitals in Erlanger's multi-state health catchment area, Erlanger Health System and partners will continue applying for additional funding from various sources (USDA, ARC, foundations, etc.) for the acquisition of basic telemedicine equipment to be placed in approximately a dozen additional hospitals beyond the original scope of the project. These additional hospitals will be linked to the FCC funded rural healthcare network at various points by other existing broadband providers.

Several of these future proposed rural health care partner hospitals are private for profit and will require the development of a fair share fee schedule to access the network. The general strategy will be to assess a modest fair share one time initial access fee for joining the network for non-eligible (for –profit health care provider) entities. This one-time fee would be scaled based upon anticipated bandwidth needs. These entities will also incur their own additional expenses for linkage to the rural healthcare network and will share equally in network system operation and maintenance costs with other participants.

A partnership of Erlanger and other non-profits or public entities will pre lease fiber lines for the network and will own all the fiber constructed with the FCC funds. Erlanger expects the usage of the network to grow substantially over time as new telemedicine health care initiatives and applications are developed, deployed and marketed over the secure network. As a result in limited instances where construction of new fiber is required, excess bandwidth is planned in initial construction for future use by network members (Scenario # 2). It is anticipated that portions of this initial excess capacity will be leased where possible in the early years for non-health related purposes with all revenues being used to sustain the

network. As health care network demand grows over time, excess bandwidth leased at arms length to other parties will be reduced to meet needs for health care traffic.

#### 7. Management of the Network

Erlanger Health System plans to focus on managing the network content (health care services) and plans through its non-profit partnership to contract with a qualified public non-profit utility(s) to manage and maintain the physical system network. Erlanger will also maintain ownership of telemedicine stations installed at rural hospital locations and will be able to maintain this equipment more cost effectively through vendor service contract(s).

#### 8. Continued RHC Funding:

The healthcare network is anticipating that all eligible rural hospitals will seek appropriate internet access funding assistance in the regular Rural Health Care program. Network staff will prepare necessary annual applications relative to the Pilot Program network for eligible member hospitals.

#### 9. State and Federal Funding:

As noted throughout the report, Erlanger Health System or various network supporters have been actively pursuing state and federal funding to add equipment and fiber to the network. This will continue until the network is fully developed with service to all hospitals, public primary care centers, and public health departments throughout the multi-state service area of Erlanger Health System. Erlanger Health System has already secured additional federal funding needed to equip rural hospitals in the initial FCC funded project with interactive telemedicine stations. Initial telemedicine station equipment purchase costs have been a little lower than projected costs, so EHS hopes to be able to equip a few more of the hospitals in the FCC project through these savings. Additional grant funds will continue to be requested from appropriate sources to add additional telemedicine equipment to more hospitals.

#### 10. Prepaid Lease Option:

Due to rapid advances in the availability of broadband fiber in rural portions of the rural healthcare service area, proposals for pre-paid leasing were requested and received.

#### **10. Provide detail on how the supported network has advanced telemedicine benefits.**

Erlanger Health System has continued work on planning the physical and programmatic structure of the network by hiring staff and committing hundreds of

thousands of local dollars to the effort. Funding of this pilot project and the on-going project planning has catapulted telemedicine to a realistic opportunity in our regional medical community. The FCC grant has generated extensive discussion in the regional medical community on how best to use telemedicine to improve the quality of health care and drive down costs. Also as a direct result of this project one private medical group moved to raise foundation funding for delivery of demonstration telemedicine consultations through leased lines to remote rural residents for specialty needs in perinatology. This particular example has provided new access in remote rural communities to specialized services needed to effectively deal with problem pregnancies which result in higher infant mortalities in the network service area. Plans have also been developed for providing stroke consultation services from Erlanger's stroke center to primary health care locations across the region and linking the level 1 trauma center specialists at Erlanger's Baroness Hospital in Chattanooga to the rural hospital emergency rooms for real time consultation and determination of treatment options.

Public Health Departments across the service area have also expressed an interest in linking with the rural healthcare network and have been collaborating in seeking additional funding to expand the planned network.

Blue Cross Blue Shield of Tennessee the dominant health insurance company in Tennessee has also begun to study how to encourage preventive care using tools such as telemedicine and they have taken steps that will result in paying for certain telemedicine services.

**11. Provide detail on how the supported network has complied with HHS and IT initiatives:**

Since the network has not been leased/constructed and is not operational at this time, this is not applicable. However staff involved with the Pilot Project have participated in training sessions presented by HHS staff through USAC sponsored training and are continuing to learn more about these initiatives and the opportunities they present.

**12. Explain how the selected participants coordinated in the use of their health care networks with the Department of Health and Human Services (HHS) and, in particular, with its Centers for Disease Control and Prevention (CDC) in instances of national, regional, or local public health emergencies (e.g. pandemics, bioterrorism). In such instances, where feasible, explain how selected participants provided access to their supported networks to HHS, including CDC, and other public health officials.**

Since the network has not been constructed and is not operational at this time, this is not presently applicable. However, as previously mentioned in Section 7, the ability to interface the Rural Healthcare Fiber Network through the Erlanger main campus hub with the EPB fiber network system which will reach every doctor's office and every doctor's home (along with every other address) in their six county service area

will provide unparalleled regional opportunities for 24/7 remote rural telemedicine access in instances of national, regional or local public health emergencies such as pandemics, natural disasters, or bioterrorism. Given the increasing local experience with widespread floods, tornadoes, snowstorms, rock slides across key highways, train derailments, etc. this capacity may be critical to just simply integrating telemedicine into the ordinary delivery of health care in our region.

**SUSTAINABILITY PLAN**

**ERLANGER HEALTH SYSTEM**

**RURAL HEALTH CARE PILOT PROJECT  
BROADBAND FIBER NETWORK**

**July 2011**

**RFP # 00  
HCP Number 17215  
FCC RN 0010407203**

**975 EAST THIRD STREET**

**CHATTANOOGA TN**

**37403**

# **RURAL HEALTH CARE PILOT PROJECT**

## **SYSTEM SUSTAINABILITY PLAN**

**MAY 2011**

### **Introduction**

Erlanger Health System understands that long term sustainability of the Fiber Rural Healthcare Network (Fi-RN) is critical to the effective and efficient improvement of the regions health care delivery system. The most critical factor in sustaining broadband adoption is the value of the new network based services that users are able to access. In the health care field the value of these services will be determined by their ability to simultaneously improve quality and improve efficiency, while decreasing costs. In order to insure long term success of the fiber rural healthcare network (Fi RN) it is necessary that, once established, the network be self sustaining. This sustainability plan outlines components, features and capabilities that will facilitate long-term economic sustainability for the network.

Erlanger has just completed a comprehensive three part Request for Proposals solicitation and negotiated a network design agreement with the Electric Power Board of Chattanooga (EPB) for network design. As part of that network design process EPB will review the assumptions and objectives of this sustainability plan to insure the infrastructure development is adequately robust and flexible to accommodate this plan and adjust adequately to future changes and growth. An additional important deliverable of the contract will be a detailed capital budget estimate and a detailed operational budget forecast.

#### **A. Funding Match (Minimum 15 percent)**

The total FCC project budget submitted is \$2,586,600. The source of funding is \$2,198,610 from the FCC pilot grant and \$387,990 in matching funds being provided by BrightBridge Inc. through a HUD EDI Direct Appropriation. Erlanger Health System is bringing a non-profit group together to manage and maintain the actual fiber network. BrightBridge a non-profit regional economic development organization in this partnership is providing the 15 percent matching funds from a Direct Congressional Appropriation awarded to BrightBridge by HUD for infrastructure construction that will benefit one of the county's proposed for service through this project. HUD has verbally approved the use of these funds and requested additional information and an environmental assessment which is in the process of being prepared and submitted. BrightBridge is an SBA certified development corporation that has been involved in the

development of EHS’s telemedicine network since the beginning. Bringing together regional partners for the matching funds is essential in these difficult economic times.

The 15 percent matching funds contributed by BrightBridge will be invested as a pro-rata share with the 85 percent FCC funds to help achieve the goal of developing the rural fiber healthcare network.

Project Budget (non-recurring)

	Budgeted	incurred
a. Network design	45,000	0
b. Network equipment	360,000	0
c. Infrastructure deployment		
i. Engineering	0	
ii Construction	956,600	
d. Internet2, NLR	0	0
e. Leased facilities	1,125,000	
f. Network management, maintenance, O&M	0	0
g. other	0	
Total	2,586,600	0

**B. Project Sustainability Period**

Our objective is to develop a sustainable rural health care network that will become integral to the delivery of healthcare in our region and thus sustainable for at least a fifteen year horizon. Developing a diverse revenue stream and a flexible business model which can respond to opportunity will be necessary to provide robust and reliable network support. The network will be partially subsidized during the initial years of service with the pre-payment of fiber leases in places where existing fiber is available. In some areas where fiber must be built, initially excess fiber will be installed to meet future anticipated rural healthcare network traffic demand and this excess fiber will be leased to other unrelated users to help sustain the network, until this additional fiber is needed to accommodate anticipated growth in healthcare network traffic. The network will be evaluated at the end of the initial five years of operation for participant cost

adjustments that may be necessary to meet what by that time will be well defined operational expenses. The goal of the project is to sustain the rural healthcare network and grow the network and service area over time. However technological advance moves forward at a relentless pace and over time the current proposed physical project may not be the most cost effective future platform for the network. We don't know that for a fact, but the focus must be on the service delivered, not the hardware but at the same time the hardware must be managed cost effectively to remain competitive with potential technological change.

To help future-proof the network as much as possible with technological advances it is important to assemble the network as a fiber network. The basic choices for most rural health care facilities are: 1) DSL (digital subscriber line, phone line); 2) T1 (phone line) 3) "Wireless" or 4) Fiber.

The DSL service is very limited in the volume of data it can manage. Typically this access can provide 256 k per second to 24 M per second download to the customer and a lower asymmetrical upload from the customer, typically limited to 256K.

T1 lines are phone lines that can carry 24 digitized voice channels of 1.544 M per second, both up and downstream and typically cost \$1,000 to \$1,500 per month, but prices are declining some. Both the DSL and T1 lines are copper wire based telecommunications solutions and are subject to environmental interference (weather, electrical, magnetic etc.).

Wireless relies upon radio spectrum just as cell phones do. Sometimes like cell phones the connection is not always consistent or nice and clean. Since wireless is a radio signal, it can be subject to radio interference. While wireless is growing as another low cost solution, it is generally acknowledged that wireless technology is less secure, less reliable, and has less flexibility to expand the size of a connection. It is a good consumer service, not necessarily a good business service. There are good opportunities to use wireless for last mile or distributed end user applications (hand held devices) and couple this with fiber for the fast, secure and efficient, long haul of data.

Fiber optic internet connections are generally agreed by most in the industry as the fastest, most secure and reliable internet connection available. Fiber can provide the ability to jump from 1M all the way to 100 M or much more. The ability to provide this wide bandwidth pipe sets fiber apart and makes fiber ideal for emerging business critical applications. With the increasing use of video information or digital imagery, fiber is essential for expanding bandwidth to accommodate future growth in demand, it gives the greatest flexibility to adjust and accommodate technological change and to the extent possible future proof the system.

## C. Principal Factors

Sustainability will depend on the value of the broadband applications offered over the network and the degree to which the costs and features of the network create an advantage over alternative options for telecommunications. The principal factors involve multiple successful scenarios for sustainability.

### *Scenarios*

1. In the first scenario pilot program funding will subsidize the participants in the rural healthcare network through prepayment of leases for existing fiber and as previous mentioned, in some more remote locations, constructing and owning fiber with excess initial bandwidth which is leased for support of the network. In this scenario the Pilot program participants migrate over to the Rural Health Care (RHC) program over time because they will be incentivized to continue participation long term because of the benefit of receiving some level or percentage of broadband subsidy against what would be otherwise the full cost of access. Part of this incentivization will be network staff that manages the RHC application cycle for participants.
2. In the second scenario all future subsidies end and the network must stand on its own value added advantage and return on investment after the initial subsidy period supported through the Pilot program. Some economy of scale is anticipated through aggregating demand for services while providing a network dedicated to health care applications. Aggregating multiple sites into one market will encourage broadband service providers to lower unit costs for service. This could potentially be a disadvantage as it may also create a market where one does not presently exist and attract a for profit vendor to initially reduce prices to grab this market, deliver the service and force the hardware based solution out of business after which future prices for service rise. However that risk is minimal and if it does occur the initial pilot project will have been the catalyst for the successful commercial system. We have always assumed that if services were offered in a cost effective manner, which were not otherwise accessible to rural network partners, this would result in a value added advantage to the rural partners and generate a return on investment in the network to the urban based tertiary care provider, Erlanger Health System. The initial program focus is centered on both stroke and trauma care which are specialty services in which Erlanger is a broadly recognized leader. These are also services that are significant positive downstream revenue generators for Erlanger and which can justify some subsidization of the telemedicine network by EHS if that becomes necessary.

Erlanger recognizes that telemedicine programs are largely mission driven and rely on downstream revenue generated by capture of new market share. Stroke services

will be a strong lead application of the network and will complement other more traditional telemedicine services, such as ER consultation, teleradiology, and specialty consultations and follow up visits.

*Factors*

1. Maximize the use of existing telecommunications subsidy programs. The majority of rural sites connected to the fiber healthcare network will qualify for subsidized broadband connection rates through the FCC RHC program. This will reduce their monthly broadband service fees. The Fi RN network staff support will assist local partners with the FCC filing process by completing necessary paperwork and managing the annual application cycle.
2. Institutionalize the use of telemedicine as a core business practice in health care facilities. Technology continues its relentless growth as a core component of the health care delivery system. Demand for new services is increasing such as ICU monitoring, mobile applications via handheld devices, expansion into long term care facilities and home and remote patient monitoring. Recent federal policies guiding health care providers to adopt electronic health records are just one example of the central role that telemedicine will play in the near future. The ability to capture health information electronically so it can be exchanged with other providers within the health service catchment area is rapidly becoming a requirement to provide quality health care. As a result, access to a fast secure and reliable broadband will be critical for institutional growth.
3. Reduce health care costs while improving health care quality. The use of telemedicine has already demonstrated the potential to reduce health care costs. Example range from the simple such as reducing travel time and expense for rural patients to the more financially important aspect of decreasing the need for patient transfers for critical care increases the savings for regional tertiary care facilities and enhances the ability for rural hospitals to generate revenue. Access to healthcare, especially specialty services, is improved via telemedicine, providing savings to providers. A number of benefits accrue to providers, patients, their families and communities. Using broadband technology, providers can partner to ensure that people get access to timely, effective healthcare expertise. Patients in underserved rural areas gain access to medical resources with broadband and providers gain access to current medical records, consult services, educational opportunities and other medical networks. The network can also provide critical access in natural disaster response such as major winter storms, tornadoes, rock slides, floods as well as response in other potential regional disasters such as transit accidents, derailments, chemical spills, etc.
4. Despite current trends and the tremendous opportunity of the near future, education is needed to inform providers of telemedicine services and how telehealth can be used to improve healthcare delivery. Some rural healthcare institutional providers have a

T-1 line and have little concept of the value and why they need broadband with high speed fiber. Other rural providers have a tape recorder and traditional diagnostic tools such as a stethoscope and a blood pressure cuff and don't have much understanding or corresponding value for the capabilities of basic telemedicine access.

#### **D. Terms of Membership in the Network**

The network includes two distinctively different components; the network services and the network system hardware. Different partners or member are needed for these different components. Erlanger and the various project partners are also moving toward a non-profit partnership for ownership, operation and maintenance of the network system which results in some of the partners bringing matching cash equity to the project as well as other needed investments. The partnership under discussion would be Erlanger Health System, BrightBridge Inc. a non-profit economic development corporation and possibly some area public power distributors who have the staff and physical capability needed to maintain and repair the fiber network. Structural arrangements for this partnership are once again in process since the RFP cycle has been completed. BrightBridge Inc. is an SBA certified development company; manages U.S. Treasury New Market Tax Credit programs in distressed areas, has contracts to manage EPA Brownfield programs and HUD 108 economic development programs in low income areas of the City of Chattanooga and administers Appalachian Regional Commission and CDBG projects for rural local governments.

##### **1. Agreements.**

The BrightBridge Inc. Board of Directors has taken board action approving the commitment of necessary matching funds for the FCC grant. Letters of Agency from participating non-profit hospitals have been compiled, executed and submitted to USAC.

There is no plan at this time to put a mandatory time frame on length of participation in the network as the network is planned to be market driven by demand for services with no cost of entry to eligible participants, only cost for onsite connectivity and pro-rata share of network operation and maintenance that is not covered by other income and the possible revenue generated from interim leasing of excess fiber. Prepayment of fiber leases by the network will allow for actual usage to be able to demonstrate the viability of the network and thus be financially stable going forward as usage increases.

2. Financial and/or time commitments made by members of the Network.

Network participant hospitals are not being asked to contribute to the 15 percent project match as most of these rural partner hospitals are struggling to simply stay in business through the current severe economic downturn

- a. Erlanger Health System –EHS is incurring costs for planning and project administration assistance. These costs are not covered by the grant and are currently being paid by Erlanger Health System. Grant eligible costs are not being incurred at this time as bidding documentation (LOA's, FCC forms 465 and 466-A, etc) have been underway. However, the need for operating equipment to interface with the FCC funded fiber network is an essential component not funded by the FCC grant. Erlanger Health System successfully applied for and was awarded \$352,000 in telemedicine equipment funding in the fall of 2008 from the USDA Rural Development Distance Learning Telemedicine program. This funding request was for non-FCC eligible network equipment to be located in rural Copper Basin Medical Center in Copperhill, Rhea County Medical Center in Dayton, Erlanger Bledsoe in Pikeville, North Valley Medical Center in Dunlap and Erlanger Baroness in Chattanooga. These telemedicine stations have been bid and purchased and agreements have been negotiated for the remote deployment of these telemedicine stations. They will initially operate over an existing patchwork system of lower capacity leased lines such as T-1's. In addition Erlanger has purchased a necessary video bridge with local funds to manage the network.
- b. BrightBridge Inc. – BrightBridge a regional non-profit economic development corporation has agreed to provide the necessary \$387,990 in necessary matching funds for the project. This investment will be provided through an existing direct HUD EDI Congressional Appropriation grant to BrightBridge.
- c. Copper Basin Medical Center – The Copper Basin Medical Center in Copperhill Tennessee (Polk County) is one of the most remote and rural public health care providers in the network. This health care provider has expended over \$300,000 in the purchase of a new digital PACs system and renovated CT scanner to able to produce digital diagnostic imagery needed to use the fiber health care network.
- d. Hutchison Medical Center in Fort Oglethorpe Georgia has just entered into a final agreement with Erlanger Health System to partner with the hospital in the provision of medical care. This will result in network equipment investments by Hutcheson.

- e. North Valley Medical Center in Dunlap Tennessee is in negotiations with Erlanger Health System regarding development of an agreement for EHS to operate the Dunlap emergency care facility. EHS and the Sequatchie County Government will invest over \$500,000 in additional funds for necessary on site equipment to take full advantage of the telemedicine access of the fiber Rural Healthcare Network.
  
- f. Rhea County Medical Center in Dayton has not made any direct financial investments relative to using the healthcare network; however the Rhea County facility recently built a new multi-million dollar hospital facility which is outfitted with a broad range of diagnostic technology that can easily utilize the connectivity of the broadband network.
  
- g. Erlanger Bledsoe Hospital in Pikeville Tennessee is part of the Erlanger Health System along with Erlanger North in Red Bank and Erlanger East Hospital

### 3. Excess Bandwidth

Due to changing local opportunities Erlanger has changed the pilot project from Scenario # 2 (Participant owns 100 % of network with some excess capacity) to predominantly Scenario # 9 (Prepaid lease) with some remote linkages with service gaps that must be built out, being Scenario #2 (Participant owns 100% of dedicated network; Excess bandwidth is owned for current or future use). These built linkages will typically be short haul fiber to connect gaps among existing utility networks.

With the recent award of a sizable DOE grant to the local non-profit Electric Power Board of Chattanooga which is the predominant fiber network in our service area, much more rural fiber is available to pre-lease. Dark or unused fiber is available in portions of our rural area and the rural healthcare network anticipates pre-leasing this where appropriate. However it is still anticipated that some network links will need to be constructed to access some remote hospitals with desired fiber.

Nationally demand for telehealth services is growing in such areas as ICU monitoring, mobile applications via handheld devices, expansion into long term care facilities, home and remote patient monitoring etc. Since we expect our network to continue to grow over time in both connections and content we requested proposals to run a minimum of 24 to 48 strands of fiber (depending on anticipated route growth) to our rural hospital locations and provide fiber based internet access scalable to 100Mb) to each site with any links we construct and own (Scenario # 2). This will be more fiber than initially needed, but the system is expected to grow into this over time as new health care provider locations are served and new health care services (including an anticipated move to HD equipment) are

developed which will grow network traffic. As a result, Erlanger Health System is anticipating leasing some of the initially excess fiber on an interim basis to generate revenue and services to exclusively fund the operation and maintenance cost of the rural healthcare fiber network during the early years of operation. Discussions with surrounding local non-profit utility systems indicate this is feasible. This is important to helping sustain the network in the early years of operation after the pilot program while network applications and network traffic builds to an expected self sustaining volume. Project staff have periodically reviewed other pilot models to determine appropriate ways to charge for products and services that are a function of the network. With the contract now in place for network design services, these strategies will be reviewed and quantified by EPB.

#### 4. Assessment of Fees for Joining and Using the Network

The network will initially only serve eligible participants consisting primarily of public hospitals and one free standing dedicated emergency department of a rural for-profit hospital. Generalized expansion plans have been developed and funding applications will continue to be submitted to serve a future broader range of rural health care providers, some of which were defined as ineligible participants for the FCC funded network. In development of the engineering for the network design by EPB, care will be taken to design in flexibility for future network expansion. When non-FCC funding requests for this health care network expansion are successful and these additional rural health care providers become a part of the system, this issue of apportioning costs will be addressed with the funding agencies. It is anticipated that when the time comes to add ineligible network participants, the network will assess a onetime upfront fee to these ineligible participants. This onetime fee will be variable and the variability will be based on anticipated bandwidth needs. In addition these ineligible network participants will be expected to fund their own “last mile” fiber cost to hook up to the network. All network members will be expected to share proportionately (based on bandwidth) in on-going network expenses.

#### **E. Excess Capacity**

There will be excess fiber capacity in this project along the routes where it is necessary to construct new fiber installation. In other places where fiber is readily available, existing fiber will be pre-leased and there will be no excess capacity in pre-leased applications. The construction of new fiber with excess capacity will vary in the amount of excess fiber according to the location and local arrangement (cost allocation, sharing agreements, maintenance, and access) negotiated with the local pole or route provider which will always be one of several non-profit electric cooperatives which operate within the service area.

There will be several layers of excess capacity where new construction is necessary. All new construction will involve the network owning a minimum of 24 to 48 strands of fiber in accordance with Scenario 2 of the March 17, 2009 USAC Guidance Document. This minimal excess capacity will be owned 100% by the rural fiber health care network for current or future use by network members. The healthcare network bandwidth demand is anticipated to grow to consume this minimal excess capacity over time. Prior to the growth of this network demand, the network will seek to lease this initial excess capacity to generate revenue needed to support the network operations.

Along some routes of new fiber installation, the network may negotiate with local electric cooperatives to install additional excess capacity at an incremental cost born by the network in addition to the 15 percent match (Scenario # 3, USAC Guidance Document), with the revenues derived from leasing this additional Excess capacity at market rate being used to sustain the network.

Along some corridors (Cleveland TN for example) where traffic demand is expected to grow substantially or where it may be necessary due to pole space limitations, or other reasons, the network may pay fair share for additional excess capacity above the basic health care network growth capacity of 24 to 48 strands. This is described as Scenario 4 in the previously referenced guidance document. This fair share excess capacity will not be part of the 15 percent match and will be paid for by other funds. This fair share excess capacity will be outside the Pilot Program and may be used as the participant chooses.

This may seem complicated but the controlling issues in this are pretty simple. The network cannot be free standing and must have the active cooperation of the various non-profit electric cooperatives and municipal systems across the health care service area in order to secure necessary rights of way, positions on overhead poles, maintenance and operation support. This is requiring negotiation with each public utility and the network must remain flexible to the needs and requirements of these public utilities while meeting the guidance and requirements of USAC, the FCC and future funding partners. The selection of EPB to provide network design services will help facilitate the involvement of other local electric distributors. These electric systems are non-profit community based organizations and their objectives are community driven and not profit driven, so the integration of route specific excess capacity considerations or scenarios will not result in any undue enrichment of private sector interests.

## **F. Ownership Structure**

While not necessary to initially lease/construct the system, for the long term perspective Erlanger and the various project partners are moving toward a non-profit partnership for ownership, operation and maintenance of the network which results in some of the partners bringing matching cash equity to the project as well as other needed investments. The partnership under

discussion would be Erlanger Health System, BrightBridge Inc. a SBA (HUD, EPA, ARC etc.) certified non-profit economic development corporation and likely some area public power distributors who have the rights-of-way staff and physical capability needed to maintain the fiber network. Structural arrangements for this partnership continue being developed.

## **G. Source of Future Support**

Future support will largely be market driven. In the final analysis telemedicine is a line of business and must be financially self sustainable or indirectly generate new revenues downstream for health care providers in order to be sustainable. The Erlanger Fi-RN network will seek to minimize operating costs by partnering strategically with other non-profits, using universal access subsidies where available through USAC, extending services to currently unserved or underserved rural markets, leasing excess capacity, and seeking new capital funding to expand and upgrade the network through public and private grant sources.

Erlanger's business plan for the initial phase of telemedicine focuses on development of a regional telestroke network to expand the existing stroke program at Erlanger. The Erlanger Southeast Regional Stroke Center is a recognized national leader in three core areas: clinical care, stroke education and medical research. In March 2009, the national MERCI registry listed Erlanger as the busiest center in the United States in the performance of advanced interventional therapies. In 2007 the center treated approximately 800 stroke patients and by 2008 the number grew to 1,118. The telestroke strategy will focus on the FCC project targeted hospitals and will initially use the USDA funded equipment for patient interface. Erlanger recognizes that telemedicine programs are largely mission driven and rely on downstream revenue generated by capture of new market share as well as grants to assist with startup capital expenses. Erlanger has launched an extensive public information awareness program to build regional public awareness of the stroke therapies which will be the lead initial service of the telemedicine initiative.

The strongest and most effective telemedicine systems typically begin operating in support of key services essential to the health of distant communities. The stroke service is an important business unit for Erlanger Health System due to its high profile in the media as well as its excellent reimbursement, profit, and contribution margin. Erlanger projects a modest but sustainable return of \$211,799 in initial year net income which will help sustain costs of the developing telemedicine network and grow with services over time.

Erlanger is marketing the planned service using a mix of both internal and external communications initiatives which include community and regional media highlighting stories and initiatives indicating how telemedicine saves time, money and lives.

Keeping staff and physicians informed about opportunities in telemedicine is helping create understanding and generating additional local initiatives on how to use the network for improved

and lower cost health care. One emerging local strategy is to develop an effective and innovative demonstration of the use of broadband- to- the- home for remote monitoring of patients to help minimize costly and stressful hospital stays. Additional funding continues to be sought for this initiative.

As the teaching hospital for the University Tennessee College of Medicine Chattanooga (UTCOM), Erlanger is also working with rural hospitals and UTCOM to encourage research initiatives that will leverage benefits of the network and positively impact health care across the region. This can also include necessary continuing education training for medical staff across the region.

Based on data obtained from existing networks, a key focus area for long-term sustainability is to ensure appropriate and timely reimbursement for all services to providers and physicians. The basic premise is simply “no pay, no play”. Our research indicates that most systems begin sustainable operations two to two and one half years after start up. Successful systems closely collaborate, communicate and continually share updated data related to processes required for reimbursement from Medicare, Medicaid and third party payers. Our region’s largest general health insurer, Blue Cross Blue Shield of Tennessee has funded a pilot telemedicine initiative with a regional physicians group to assess the opportunities and advantages of telemedicine and the insurer has positioned itself to be a regional leader in negotiating appropriate physician reimbursement for telemedicine services. As a result of these positive developments we do not anticipate overly burdensome problems with this essential element of reimbursement for telemedicine services which is critical to network sustainability. However our start up is not conditioned on achieving this as we intend to earn initial revenue downstream in the patient care cycle by growing market share and by seeking traditional telemedicine funding sources as well as by marketing initial excess capacity to help underwrite operational and maintenance costs.

## **H. Management**

Erlanger Health System will be the managing partner responsible for management and operation of the rural health care services or content delivered over the network. BrightBridge Inc. will be the managing partner for the partnership that will manage the physical rural healthcare fiber network system. A consortium of the affected surrounding electric suppliers will serve in an advisory role to BrightBridge Inc. in the management of the physical system and the monetary issues relative to this management.