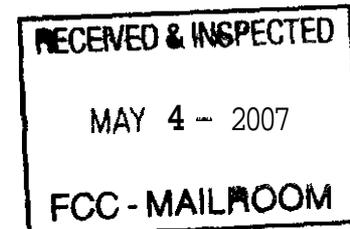


# New England Telehealth Consortium

*A Consortium of 555 Maine, New Hampshire, and Vermont Health Care Sites*



**To:** Commission's Secretary, Office of the Secretary  
Federal Communications Commission

**Re:** WC Docket No. 02-60  
Rural Health Care Support Mechanism:  
Pilot Program

**From:** New England Telehealth Consortium

**Date:** May 2, 2007

Contact Information: James E. Rogers, Jr.  
New England Telehealth Consortium  
145 Exchange Street, Suite 4  
Bangor, Maine 04401  
207 947-3636  
jrogers@pinonline.com

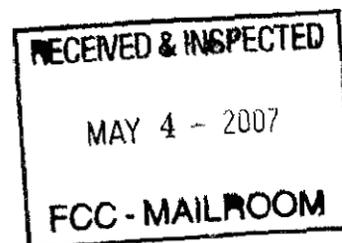
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# New England Telehealth Consortium

*A Consortium of 555 Maine, New Hampshire, and Vermont Health Care Sites*

May 2, 2007

Kevin J. Martin, Chairman  
Federal Communications Commission  
445 12<sup>th</sup> Street, SW  
Washington, D.C. 20554



Dear Chairman Martin,

Enclosed, please find five copies of our application to the FCC Rural Healthcare Pilot Program. Three courtesy copies will be mailed to the appropriate personnel as well.

The New England Telehealth Consortium (NETC) is a Maine non-profit health care consortium founded and incorporated specifically to serve as a vehicle whereby thirty-one (31) health care providers and related entities, representing 555 health care sites in Maine, New Hampshire, and Vermont, could collaborate to gain economies of scale and enhance health care delivery throughout the region. NETC membership includes 57 urban, rural, large, small, public, private, and state hospitals; 3 universities; 57 behavioral health sites; 8 correctional facility clinics; 6 health education sites; 2 health research sites; and 81 Federally Qualified Health Centers (FQHC). This application presents the FCC with a unique opportunity to build and study a truly New England wide telehealth network by building an NETC network that would be joined with the Northern Crossroads (NOX) network, creating a six state, regional network.

We are very pleased with the depth and breadth of the consortium we have formed. We believe it is the largest, most diversified consortium of New England health providers for any project such as this. We appreciate your kind consideration and await the results of your deliberations.

Sincerely,

Brian Thibeau  
President  
New England Telehealth Consortium

Encl.

**New England Telehealth Consortium**  
**FCC Rural Health Care Pilot Program Request**

Address of organization: 145 Exchange St., Suite 4, Bangor, ME 04401

Telephone number: 207 947-3636

President: Brian Thibeau

Contact person and title: James E. Rogers, Jr., Managing Agent of NETC  
JROGERS@PINONLINE.COM

Funding request year one: \$15,600,069

Funding request year two: \$9,088,947.

Total project budget (non-profits and for-profits) **year one:** \$19,813,022

Total project budget (non-profits and for-profits) year two: \$1 1,054,958

Project name: New England Telehealth Consortium FCC Rural Health Care  
Pilot Program

## New England Telehealth Consortium's FCC Rural Health Care Pilot Program Request

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### Maine Delegation

John Baldacci, Governor

Susan Collins, U.S. Senator

Olympia Snowe, U.S. Senator

Tom Allen, U.S. Representative

Michael Michaud, U.S. Representative

### Maine Department of Health & Human Services

### New Hampshire Delegation

John Lynch, Governor

John Sununu, U.S. Senator – sent letters to FCC

Judd Gregg, U.S. Senator – sent letters to FCC

Paul Hodes, U.S. Representative – sent letters to FCC

Carol Shea-Porter, U.S. Representative – sent letters to FCC

### Vermont Delegation

Patrick Leahy, U.S. Senator

Bernard Sanders, U.S. Senator

Peter Welch, U.S. Representative

### Internet2

### Northern Crossroads

**New England Telehealth Consortium's**  
**FCC Rural Health Care Pilot Program Request**

**Introduction**

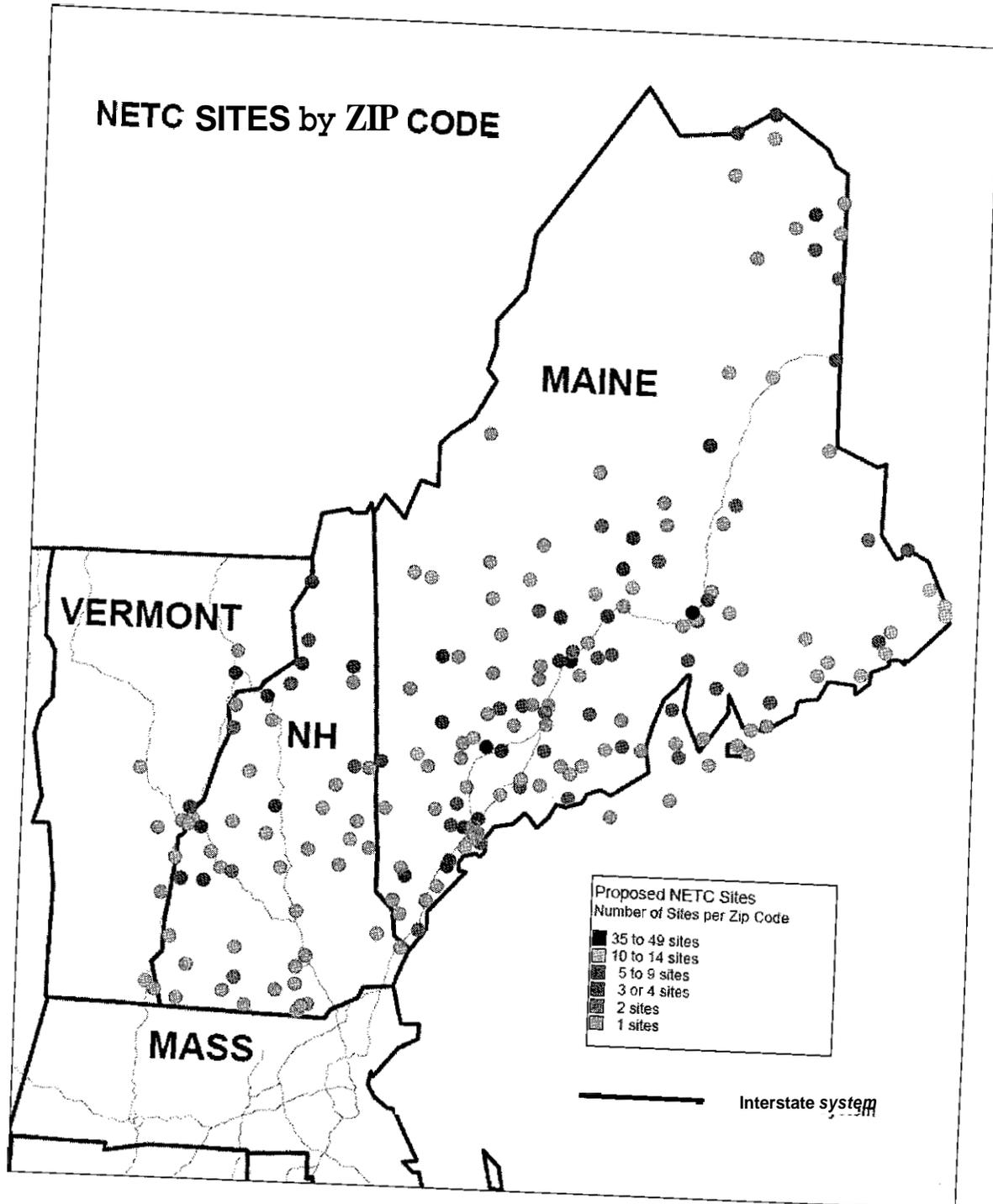
**A. Project Description**

Over the past fifteen years, the individual members and affiliates of the New England Telehealth Consortium (NETC) have displayed their commitment to telehealth and telemedicine by providing ever-expanding services throughout their predominantly rural service areas. The development of the New England Telehealth Consortium, consisting of 31 members and 555 affiliates across three states, is the next logical step in this progressive attempt to provide telemedicine and telehealth services throughout the region and link to networks across the United States. Please see a map of members and affiliated sites in Figure 1 below. This pilot program will develop a broadband network that will electronically link the consortium's diverse healthcare organizations located across Maine, Vermont, and New Hampshire. This broadband network will enable rural clinics and hospitals with no connectivity or having slow speed ISDN lines to employ high bandwidth connectivity. Having all the partners on the same private network will expand the ease of access to larger provider facilities, improve transmission quality and increase the quality of user experience.

The Consortium is a newly formed non-profit organization consisting of a wide variety of experienced partners including research, academic, public and private healthcare organizations dedicated to telehealth and telemedicine. The goal of this Consortium is to provide increased access to healthcare services, health information exchange services, research and education by enhancing broadband capacity to support existing programs and the implementation of more effective and sustainable telehealth services. The Consortium will do this by promoting collaboration and reduced costs through partnering and leveraged spending. This FCC Pilot funding will make it possible to leverage current telemedicine spending to reach more rural providers, improve the capacity of those currently networked and provide additional specialized services throughout the region, especially to remote, rural areas.

Consortium partners include University of Maine School of Nursing, Eastern Maine Healthcare System, Dartmouth-Hitchcock Medical Center, University of New England, North Country Health Consortium, Maine Health Alliance, University of New Hampshire School of Health and Human Services, The Jackson Laboratory, Maine Primary Care Association comprising Maine's FQHCs, and many critical access hospitals located throughout the Maine, New Hampshire and Vermont region. The nationally recognized expertise of these partners includes a wide variety of telehealth experience, research and

knowledge that will serve both the Consortium and the Pilot Project well in meeting goals and objectives.

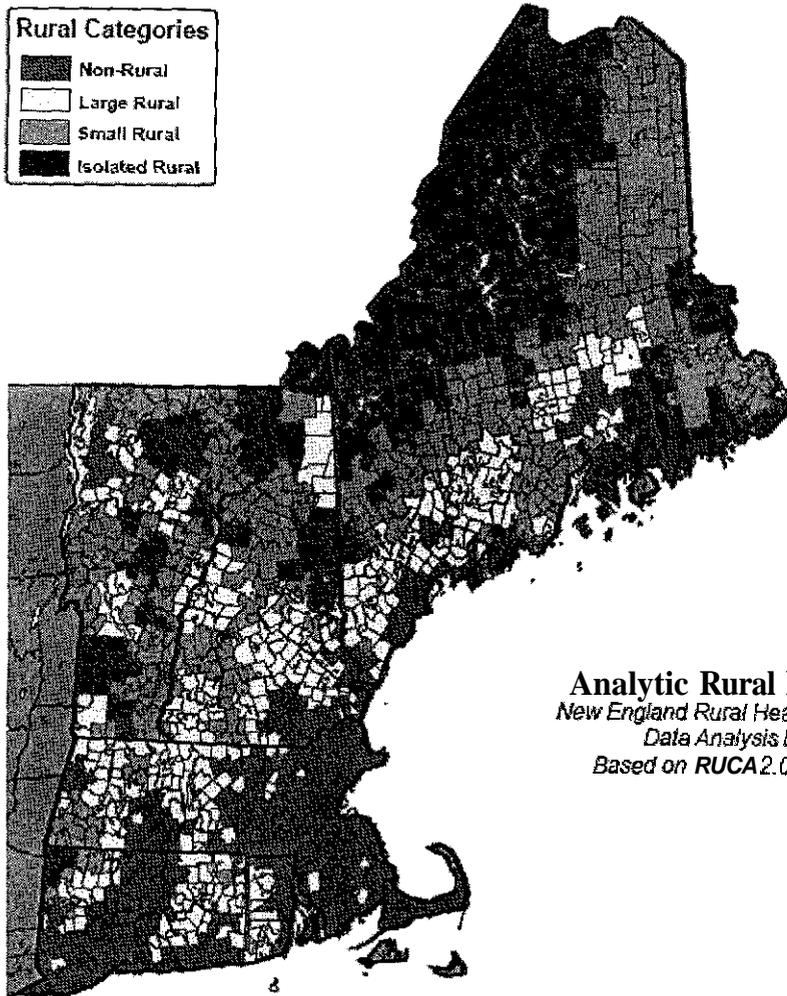
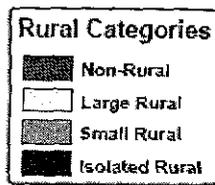


Throughout this proposal the following definitions will be used for telemedicine and telehealth. *Telemedicine* is the use of electronic communication and information technologies to provide or support clinical care at a distance (U.S. Department of Commerce, 1997, Telemedicine Report to Congress, p.1). *Telehealth* is defined as the use of electronic information and telecommunications technologies to support long-distance clinical health care, patient and professional health-related education, public health and health administration, (U.S. Department of Health and Human Services, 2001, Telemedicine Report to Congress, p. 13).

## **B. Region Demographics**

The area served by the New England Telehealth Consortium is primarily rural, underserved and remote causing residents to drive long distances for healthcare or simply do without, which recent research confirms (Rural Data for Action, 2006). The map below, (please see Figure 2 below), divides the entire six state New England region into four tiers of population. The definition of rural used by the New England Rural Health Roundtable employs a combination of RUCA codes, zip codes, primary care service areas and county boundaries to divide the population into four tiers. The green tier reflects non-rural populations and the other three tiers define levels of rurality; large rural, small rural, and isolated rural.

Figure 2. New England Telehealth Consortium Service Area by Rural Categories



**Analytic Rural Definition**  
*New England Rural Health Roundtable  
 Data Analysis Project  
 Based on RUCA 2.0 Categories*



When considering the three states represented in the New England Telehealth Consortium, it becomes obvious that Maine, New Hampshire and Vermont contain the largest amount of rural areas with relatively few non-rural areas (green) to provide services in these rural areas.

The NETC will provide network services to a population of approximately 2,800,363 of which 38% live in rural areas. Please see the data listed in Table 1 below for more information.

Table 1 Demographic Statistics

<u>Data Type</u>	<u>Vermont</u>	<u>New Hampshire</u>	<u>Maine</u>	<u>Total</u>
<u>Population in Consortium</u>	168,500 27%	1,309,940 Approx 100%	1,321,923 Approx. 100%	2,800,363
<u>Persons / Square Mile</u>	42.3	137.8	41.3	
<u>Land Area</u>	3,761 41%	8,968 100%	30,862 100%	43,591
<u>Population in Rural Area</u>	16,544	494,558	552,171	1,063,273
<u>% of Population over 65</u>	14.5%	12.5	14.6%	15.1%
<u>Individuals Below the Poverty Level</u>	10.3%	6.4%	10.7%	10.6%

### **C. Identification of Need**

Due to geographic isolation, prolonged period of hazardous winter driving conditions, poor road infrastructure, an aging population and a serious lack of local medical specialists, the use of telehealth medical services provide an appealing health care delivery model for large areas of the rural region served by the New England Telehealth consortium.

Age - Age distribution is one of the most important determinants of health status, service utilization and eligibility for public insurance programs such as Medicare and Medicaid. The proportion of elderly in isolated New England rural tiers is 23% greater than in non-rural tier areas (**New** England Rural Health Roundtable, 2006).

Over 40% of all households in the most remote areas have one or more elderly residents present (U.S. Census, 2000).

*Income and Employment* - Low income and loss of employment often lead to less access to healthcare due to cost and lack of health care insurance. There is a significant income disparity between the rural and non-rural areas with difference increasing with the degree of rurality. Mean family incomes in rural areas overall are over \$15,000 or 23% less than in non-rural communities in the region. Nearly, 33% of individuals living in rural parts of New England are classified as **low** income (U.S. Census, 2000). Unemployment in rural areas of New England is 6 -10% higher than non-rural areas. Self employment in unincorporated or family businesses is 60% more prevalent than in non-rural areas (U.S. Census, 2000 as found in New England Roundtable, 2006). Rural residents were 37% less likely to have health insurance than their non-rural counterparts.

Failure to access routine and preventive care can lead to late identification of emerging health care issues and can result in more costly and complicated illness. The data indicates that a 50% greater proportion of rural residents going five or more years without a checkup and the degree of difference increase with the level of rurality. In the small and isolated rural areas, the rates are 71% and 88% higher than in the non-rural area respectively.

*Geographic Isolation* – The NETC’s rural population densities range from 4 to 21 persons per square mile and provide a clear picture of a region filled with isolated areas. Long distances must be traveled to reach more populated areas with specialized health care services. In most cases, public transportation is not available leading to more isolation for those physically unable to drive or without other forms of transportation. More than one out of 20 households in the combined rural area has no vehicle and no practical transportation option areas (U.S. Census, 2000 as found in New England Roundtable, 2006).

*Weather* - It is, also, these same rural areas that present the most challenges regarding a limited travel infrastructure and hazardous driving conditions. It is not unusual for snowfall to accumulate from late October through May, six to seven months of the year, and to total over 100 inches per year. The more rural areas of the region, in most case, are the areas receiving the most drastic weather conditions for travel.

*Shortage of Health Professionals* – The Health Resources and Services Administration (FRSA) has designated over 25 Health Professions Shortage Areas in the New England Telehealth Consortium service region. Areas are designated in relation to population groups and service areas. In addition to a shortage of specialists, there is a 14% lower ratio of primary care providers in rural areas compared to the non-rural tier of the region. In addition, nurse practitioners and physician assistants have a particularly important role in rural underserved communities as rural primary care physicians take on the roles specialists provide in less rural areas. The rural areas are heavily reliant on traveling healthcare specialists

in such areas as nursing, radiology, and respiratory care. Recruiting healthcare professionals of all skill levels to this region is becoming an increasing challenge

#### **D. Addressing Rural Health Issues by Telemedicine and Telehealth**

Using telemedicine and telehealth to provide services in the New England Telehealth Consortium service area is critical to the health of this rural population. Recent studies reveal rural residents in this three state region exhibit elevated mortality and morbidity for a variety of chronic disorders, including diabetes, specific cancers, and lung, heart, and kidney diseases. A relatively high suicide rate compared to other more urban areas, especially among the youth and the elderly, is prevalent. A recent epidemic in synthetic opiate abuse originated in the most rural counties of Maine, where substance abuse services are least available. These conditions and others have made telemedicine in the region served by the New England Telehealth Consortium a promising and necessary approach for delivering and expanding telehealth medical and supportive services.

## **I. Identify the organization that will be legally and financially responsible for the conduct of activities supported by the fund**

The New England Telehealth Consortium is applying for this FCC Rural Health Care Pilot Program opportunity. The Consortium consists of 31 members representing 555 affiliates through the states of Maine, Vermont and New Hampshire. NETC is a consortium of healthcare providers formed for the following purposes:

- Design and implement a private broadband regional telehealth network with Internet2 connectivity;
- Link regional healthcare providers with urban public practices, research institutions, academic institutions, and medical specialists to provide greater efficiency in the sharing of information relevant to healthcare applications;
- Provide a shared broadband network with healthcare providers thereby increasing and validating telehealth and telemedicine opportunities in the region;
- Provide healthcare providers in rural areas with greater and easier access to current research, advances in medicine, expert support and team consults; and
- Allow healthcare providers in the region access to a common network for provision of electronic health records, remote medical diagnostics, telehealth, telemedicine, population health database, remote surgery, teledentistry, telepsychiatry and behavioral health treatment and other purpose determined by the Board of Directors and permitted by applicable law.

New England Telehealth Consortium's service area and member site locations are delineated on the map below in Figure 1. NETC is a non-profit corporation that has been organized pursuant to the Maine Non-Profit Corporation Act as a mutual benefit corporation for all permitted purposes under Title 13-B of the Maine Revised Statutes. Please see the articles of incorporation in Appendix A. and the organizational bylaws in Appendix B. All NETC members have signed a commitment agreement stating that they will pay for project costs not covered by the FCC Rural Health Care Pilot Program. Please see the commitment agreements and signatures in Appendix C.

### Key Facts about the New England Telehealth Consortium

- Name: New England Telehealth Consortium (NETC)
- NETC is a non-profit health care consortium incorporated in the State of Maine
- Founded specifically to bring a group of health care sites together for the purpose of applying for the FCC pilot program.
- 31 Members representing 555 health care sites in Maine, New Hampshire and Vermont
- 57 Hospitals (urban, rural, large, small, public, private, state)

- 3 Universities (University of Maine, University of New Hampshire, University of New England)
- 57 Behavior Health Sites (2 Hospitals and 55 Clinics)
- 8 Correctional Facility Clinics
- 81 Federally Qualified Health Center sites
- 6 Health Education sites
- 2 Health Research sites (The Jackson Laboratory, MaineHealth Research Institute)
- 87% Non-profit
- 13% For-profit
- Planning to connect to the Northern Crossroads (NOX) network enabling connectivity to hospitals and universities in Massachusetts, Connecticut and Rhode Island.
- Planning to connect to Internet2 via NOX

## **11. Identify the goals and objectives of the proposed network**

### **A. Overall Goals**

The goal of this Consortium is to provide increased access to healthcare services, health information exchange services, research and education by enhancing broadband capacity to support existing programs and the implementation of more effective and sustainable telehealth services.

The announcement of this pilot grant opportunity has spurred a new energy among those participating in various telehealth networks across the region to collaborate by developing the New England Telehealth Consortium (NETC). Through the assistance of ProInfoNet, a network design company, NETC has conducted an initial network design study, assessed the needs of NETC members and developed approximate individual and summary cost structures for implementing a network that will link the NETC members and affiliates across three highly rural states with a private broadband network that includes Internet2 connectivity.

Based on the preliminary needs assessment, ProInfoNet determined that a private, cloud based, MultiProtocol Label Switching (MPLS) Wide Area Network (WAN) best fits the needs of the Consortium and most closely meets the requirements of the FCC Rural Health Care Pilot Program. MPLS is a fully meshed network allowing “any to any” communications and supports packet prioritization so time sensitive information will not

encounter delays. Encryption will be used through the network for privacy and security. A help desk mechanism will be employed for the support and management of the network. Each member of the Consortium has selected the sites that need connection to the network and the bandwidth required. Upon award of the NETC's application to the FCC Rural health Care Pilot Program, NETC will be bound to the rules and funding commitment of the FCC. Estimated costs have been determined by ProInfoNet for both first year capital costs and first and second year network services costs for each site. Alternative technology network costs have been determined for those member sites requiring microwave, satellite, or wireless alternatives.

## **B. Objectives**

1. Build a broadband network that connects multiple healthcare providers and brings the benefits of innovative telehealth and telemedicine services to the region of the three state area where need is most acute.

Action – Conduct design study, submit RFPs, assure compliance with USAC Rural Healthcare Program procedures, review and analyze proposal responses, prioritize the need and implementation order of members, and manage the infrastructure deployment.

2. Link the New England Telehealth Consortium, to a nationwide backbone that will connect research, academic, public, and private health care institutions that are important sources of medical expertise and information.

- a. NETC members include internationally known research facility The Jackson Laboratory, New England University, University of Maine, University of New Hampshire, Eastern Maine Healthcare Systems, MaineHealth, etc.

- b. Upon network completion, NETC has been invited to connect to the Northern Crossroads (NoX) network enabling access to hospitals and universities in Massachusetts, Connecticut, and Rhode Island resulting in a combined network that connects urban hospitals, medical specialists, universities and research institutions with rural health providers across New England. See Appendix D for an illustration of the Northern Crossroads network.

Action – NETC will access Internet2 via the NoX network gigaPOP, in addition to connection with the Southern New England NoX health care network.

3. Build increased access to advanced applications in continuing education and research.

Action – The New England Telehealth consortium will draw from the aggregate expertise of its members and Internet2 affiliates to implement telehealth opportunities in underserved areas. Two of our members, University of New Hampshire and Regional Medical Center of Lubec/Healthways have video-bridge technology available for telemedicine applications for our 555 member sites. University of Maine School of

Nursing and University of New England Medical School plan on using the network to provide distance continuing education programming to remote rural hospitals and clinics as well as utilize the network to have real time check-ins with students placed at remote rural medical locations.

4. Enhance the healthcare community's ability to provide a rapid and coordinated response in the event of a national crisis. Emergency planning, program development, notification and assistance will become a coordinated three state activity rather than individual efforts.

Action – An Emergency Response Alert **notifier** and procedural steps in preparation for health related emergencies or threat of attack will be established.

5. Create a system to share patient electronic medical records easily. In the NETC region bandwidth availability and its cost have traditionally been the key road blocks in establishing a true system of patient record sharing. These barriers will be overcome through this funding.

Action – In cooperation with HealthInfoNet of Maine, the New England Telehealth Consortium will offer standardized Electronic Medical Records, (EMR) language and software across the network. HealthInfoNet projects a savings of \$40 to \$50 million in healthcare spending each year in Maine alone with even larger savings across the entire Consortium.

6. Leverage the telemedicine networks that already exist. Telemedicine has been a high priority throughout the region due to remoteness and lack of available medical professionals. Funding from this pilot network will enable providers to expand their service range and increase their abilities.

Action – The New England Telehealth consortium plans to facilitate conversation and participation between telehealth advancement agencies such as Maine Health Information Center, Healthways/The New England Regional Telehealth Resource Center, Maine Health Access Foundation, North County Health Consortium and more. Maine Seacoast Mission, which provides telehealth care to island residents, will utilize this high bandwidth network to improve their health services through the use of Telemedicine consultations.

### **C. Current Telehealth Activities**

The region has developed a very good foundation in many telehealth applications. The following telehealth services are available and/or developing in the region:

- *Picture Archiving and Communications Systems (PACS)* – The large system hospitals have implemented PACS and spreading the service beyond their hub hospitals has begun at selected systems. Examples are listed Section VIII.
- *Remote Critical Care Monitoring* – MaineHealth in Portland, Maine implemented the first service of this kind in New England. It is now offering the service to other hospitals. Eastern Maine Healthcare System in Bangor, Maine is planning

this service with implementation over the next three years to its affiliated hospital ICUs across Northern, Eastern and Central Maine. Dartmouth-Hitchcock Medical Center is in the early planning stages.

- *Electronic Medical Records (EMR) Systems* – Hospitals and large physician and specialist practices in the region have widely implemented EMRs and are working on quality improvements to their systems. Many small and rural practices would like to make this improvement and are evaluating their options for quality enhancement/cost of the investment. Given new options for hospital systems to support that growth, it is anticipated that within 3-5 years most Maine small practices will have electronic data at some level. At the same time the development of Maine's Regional Health Information Organization, HealthInfoNet, is due to begin piloting its information collection and sharing capabilities this year with a roll-out next year. These developments will allow Maine to demonstrate the value of this kind of sharing and encourage regional implementations.
- *Use of Televideo Conferencing and Telemedicine* – Vermont, New Hampshire and Maine have developed networks for the use of televideo conferencing especially for education and to a limited extent for telemedicine. Some New Hampshire hospitals are providing tele-psychiatry and tele-radiology services to rural areas. Maine's telemedicine system is more developed and widely used, but while on a par with the most developed systems in the country, it faces the same challenges. These challenges are well documented in the telemedicine literature and include issues from the technology itself, physician resistance, credentialing and reimbursement complications, scheduling, and others. In spite of these, an array of telemedicine projects are growing more commonplace in the region and are listed in Section VIII.

#### **D. Impact of Proposed Pilot Activities on Telemedicine**

Increased bandwidth capacity at a reasonable cost will allow the following activities to be implemented and increased:

- Transmission of Digital Images over adequately sized network connections will allow increased use of remote site review and/or storage using the developing Picture Archiving Communication Systems. This improvement will enhance access to radiologists, increase quality of diagnosis and reduce the rising costs for the increasing demand for images in healthcare.
- Regional Sharing of information from EMRs is only possible if transmission of large amounts of data is facilitated by increases in bandwidth. One early benefit is its use in emergency departments. Access to patient histories and medication lists through services like that being developed by HealthInfoNet in Maine can save lives and reduce errors.
- Remote Critical Care Monitoring by specially trained shared Intensivists has shown dramatic safety improvements at reduced costs for patients in Intensive Care Units. To grow these services for rural hospital ICUs requires that communication systems are adequate and that redundant system backup is insured.

- The growth of research efforts like that being implemented by internationally recognized Jackson Laboratory, the University of Maine, Dartmouth/Hitchcock, and Eastern Maine Healthcare Systems' Maine Institute for Human Genetics and Health will be limited without the capability promised by this project to transmit large data files in short time frames.
- Telemedicine projects of all kinds will benefit from improved video quality and reduced line costs available with adequate bandwidth. Primary care, specialist and mental health consults can become available across the Maine Corrections System. Trauma consults and care teams spanning disciplines and systems can collaborate to improve care. Other examples of growth potential are outlined in Section VIII.

These cutting edge improvements highlight the dramatic changes possible for rural healthcare in this region, but they should not overshadow the enhancements to daily workflow in hospitals and practices through implementation of office automation tools, accounting capability, scanning, video conferencing, and patient/asset/staff tracking systems.

## **111. Estimate the network's total costs for each year**

### **Methodology – The process of building NETC**

- ProInfoNet has had experience working with the USF Rural Health Care Program. ProInfoNet also has eleven years of experience designing and implementing health care networks in rural Northern New England. Through this experience ProInfoNet has become aware of the limitations of the normal program and the difficulty and expense of building a region wide Telehealth network in rural Northern New England.
- Having familiarity with the normal USF Rural Health Care Program, ProInfoNet got very excited about the FCC Pilot program's potential of making a Northern New England Telehealth and Telemedicine network a reality.
- ProInfoNet set about planning to assemble a Northern New England consortium for the purpose of applying for the FCC Rural Health Care Pilot Program.
- ProInfoNet spent the month of November 2006 creating a structure and a plan to prepare for and ultimately apply for the FCC Rural Health Care Pilot Program. The structure is as follows:
  - From December 2006 through March 2007, the project was called the ProInfoNet New England Health Care Network.
  - Developed a marketing program to reach out to Northern New England Health Care sites.

- o Attorneys from Rudman & Winchell, LLC of Bangor, Maine assisted with the bylaws, articles of incorporation, structure, officers and incorporation with the State of Maine.
- o Initial board of directors and officers were appointed
- o New England Telehealth Consortium was formed and incorporated as a non-profit health care consortium March 23,2007 in the State of Maine.
- o New England Telehealth Consortium signed a management agreement with ProInfoNet (see Appendix E) to perform the needs assessment, pre-design the network, draft and submit the FCC Rural Health Care Pilot Program application, perform the network design study, manage the USAC form process and supervise the implementation of the network.
- o Data Collection Survey was created in order to survey the sites in the consortium, to collect information about their Telehealth and Telemedicine needs and their networking requirements.
- ProInfoNet spent the months of December 2006 through April 2007 contacting and meeting with many Northern New England healthcare organizations (i.e. HealthInfoNet, Maine Hospital Association, New Hampshire Hospital Association, New Hampshire DHHS, Maine DHHS, Northeast Rural Health Roundtable, Maine Health Access Foundation, Vermont NCIC, New England Health Institute, individual hospitals, etc.) to present the idea of the New England Telehealth Consortium.
- Each member signed an agreement called “Proposal 1” which signified their willingness to participate in the Member Data Collection Survey.
- The sites in the consortium were surveyed using the Data Collection Survey (attached in Appendix F).
- The results of the Data Collection Survey were compiled in a comprehensive data base so a preliminary network design could be determined.
- An analysis of the Data Collection Survey determined that a Multi-Protocol Label Switching (MPLS) network with connectivity to Internet2 would be a likely wide area network solution that would best fit the sites in NETC. The bandwidth requirements for each site varied, but included 1.5 million bits per second (Mbps), 10Mbps, 45Mbps, 155Mbps, 622Mbps and 1000Mbps.
- Using the requested bandwidth requirements for each site, ProInfoNet contacted two network equipment providers who provide MPLS infrastructure equipment in Northern New England and obtained estimated prices from them.
- Using a statistical sample of urban and rural sites, ProInfoNet contacted five common carrier network providers who provide MPLS services in Northern New England and obtained estimated prices from three of them.
- ProInfoNet obtained estimated prices for Internet2 from an Internet2 Aggregation point provider.

- Using the estimated prices from the common carrier network providers, Internet2 provider, and the infrastructure equipment providers, in conjunction with the bandwidth requested by each site in the consortium, ProInfoNet determined a target budget for the implementation of our proposal MPLS network.
- ProInfoNet presented estimated prices, the detailed structure of New England Telehealth Consortium to all of our consortium members. Each member was given the opportunity to resign from the consortium or to remain in the consortium, be on the application and commit to the following:
  - You will pay for project costs not covered by the FCC Rural Health Care Pilot Program.
  - You acknowledge the estimated costs of the project.
  - You will fax this signed Proposal Two back to NETC at 207-942-4852 no later than Friday, April 20,2007.
  - You are not a participant in any other application to the FCC for the Rural Healthcare Pilot Program.
  - You will become a member of New England Telehealth Consortium
- Thirty one members representing 555 sites elected to participate with NETC and agreed to the terms of proposal two.

**Total Estimated NETC Network Costs (including non-arofit and for-arofit sites)**

Total Year One Costs	\$19,813,022
Total Year Two Costs	\$11,054,958

**IV. Describe how for-profit network participants will pay their fair share of the network costs**

The NETC Commitment Agreement (Appendix C) signed by all members clearly states that all “individual sites operated by a Member which are for-profit or do not otherwise qualify for the FCC funding commitment will pay 100% of the vendor and supplier costs as incurred.”

## **V. Identify the source of financial support and anticipated revenues that will pay for costs not covered by the fund**

### **A. Sources of Financial Support**

Each NETC member has agreed in writing to the following plan for supporting the costs not covered by the FCC funds in the commitment agreement (Appendix C).

**Operating Expenses** - Upon application approval, the New England Telehealth Consortium Board will determine and estimate, if necessary, the operating expenses that will be incurred by NETC for each upcoming three month period. The aggregate of three months' expenses will be divided by the total number of sites operated by all of the Members to reach a per site expense amount. This amount will become the total amount of dues owed by each Member. The total number of consortium sites will be based on the number of sites listed on the FCC application as supplied by each Member. NETC will bill each Member the aggregate per site expense for such Member. Each Member will be responsible for the expenses incurred by the sites operated by that Member and will determine in its own discretion, how billing will be allocated among its own sites. This process will be repeated every three months as needed to cover NETC expenses. Any balance of dues received and not spent at the end of a fiscal year shall be either put towards the following quarter's expenses or returned to Members proportionately. The board will determine which method shall be used. After the initial two-year period is completed, it is anticipated that NETC would begin determining dues on an annual basis for its Members once anticipated costs and expenses can be more easily determined.

**Payment of Costs** - Costs will be paid to vendors and suppliers of services as incurred during creation of the network. NETC's Board will determine the billing method, although it is anticipated that NETC will bill its Members according to the following formula: 100% of incurred costs minus the anticipated FCC funding commitment (e.g.  $100\% - 85\% = 15\%$ ). In this situation, Universal Service Administrative Company (USAC) will pay the FCC funding commitment (e.g. 85%) directly to the supplier of equipment or services. Individual sites operated by a Member which are for-profit or do not otherwise qualify for the FCC funding commitment will pay 100% of the vendor and supplier costs as incurred.

### **B. Anticipated Revenue Streams Not Covered by the Fund**

The State of Maine Department of Health and Human Services has agreed to provide limited funding to support a full-time New England Telehealth Consortium staff member. Please see support letters in Appendix G.

As the New England Telehealth Consortium continues to develop and grow a sustainability plan will be put into place (described later in this document). Additional revenue streams will be developed to support the organization after the end of the grant and growth into the future.

**VI. and VII. List the health care facilities that will be included in the network and provide the address, zip code, Rural Urban Commuting Area (RUCA) code and phone number for each health care facility participating in the network**

New England Telehealth Consortium is made up of 31 members representing 555 sites. Of these sites, 553 are represented by the target three state consortium area. However, one member has two satellite offices in up-state New York, which have been included in this application. Below is a summary of the RUCA code data (see Table 2). Please see Appendix H for a complete listing of NETC members and affiliated sites by name, address, zip code, RUCA, phone number and facility type. Below Table 2 is a list of the 31 members of NETC (see Table 3)

**Table 2 NETC Distribution of Sites by RUCA Code**

<b>RUCA Code Number</b>	<b>Number of Sites in Each RUCA Code</b>
1	160
2	26
4, 4.1	105
5	19
7	122
8	1
9.1	1
10, 10.1, 10.2, 10.3, 10.4, 10.5	121
<b>Total</b>	<b>555</b>

**Table 3 NETC Member List**

- Community Health and Counseling Services
- Dartmouth-Hitchcock
- Down East Community Hospital
- Eastern Maine Healthcare
- Houlton Regional Hospital
- Huggins Hospital
- JASON Program
- LRG Healthcare
- Maine General Health

Maine Primary Care Association  
Maine State Government  
MaineHealth  
MaineHealthAlliance  
Martin's Point Health Care  
Mercy Hospital  
MidState Health Center  
Millinocket Regional Hospital  
Monadnock Community Hospital  
Mount Desert Island Hospital  
North Country Health Consortium  
Penobscot Bay Medical Center  
Penquis CAP  
Redington-Fairview General Hospital  
Regional Medical Center of Lubec/Healthways  
Southern Maine Medical Center  
Spere Memorial Hospital  
The Jackson Laboratory  
UNH School of Health and Human Services  
University of Maine School of Nursing  
University of New England  
York Hospital

## **VIII. Indicate previous experience in developing and managing telemedicine programs**

### **A. Key Telehealth Activities in the Consortium Service Area**

Beginning in the early 90s, especially in the most rural areas of the region, marginally adequate infrastructure but more than sufficient need compelled healthcare providers working together to implement the use of promising communications and information technology to deliver healthcare services that would not have been available otherwise. Examples of this include the following:

- *Picture Archiving Communications Systems (PACS)* may soon be available at most hospitals in the region either through individual purchase, but more frequently through sharing infrastructure developed at the major hub hospitals. Imaging is key to diagnosis and treatment planning. These systems allow the delivery of radiology services across the region.

- *Critical Care Monitoring* has been developed or is being planned at the largest hospitals in each state. This system will allow critical care specialists in urban areas to provide consultation services to rural hospitals throughout the region.
- *TelePsych* services have been provided to rural areas of Maine and some areas of New Hampshire.
- *Electronic Medical Records* is a key service being developed by an organization partnering with NETC. There are efforts in each state of the consortium to form Regional Health Information Organizations (RHIOs). Maine is already poised to realize implementation of one of the first statewide *electronic health information exchanges* in the nation. HealthInfoNet is a not-for-profit 501(c)(3) corporation that represents the commitment of a broad coalition of stakeholders involved in health care delivery to use health information technology to transform care delivery processes. Timely access to a comprehensive summary of person-centric clinical data at the time of care is deemed to be a high priority by consumers, providers, payers, business and government representatives.. Categories of information will be made available through the region wide health information exchange including visit histories, lab results, prescription medications, diagnostic test results, allergies, and problem lists.

HealthInfoNet is now moving into pilot testing of its data sharing utility. By year's end it is hoped that the pilot project will connect the hospitals of Eastern Maine Healthcare Systems in Brewer, MaineHealth of Portland, MaineGeneral Health of Waterville, as well as some doctors' offices and at least one lab. Each of these sites is a member of New England Telehealth Consortium. In early 2008, HealthInfoNet will begin delivering health information exchange services elsewhere.

Access to reliable, broadband connectivity across the State of Maine will be fundamental to insuring that providers in all communities can take full advantage of HealthInfoNet's resources.

Once fully implemented, providers at hospitals, practices and labs will be able to access vital patient information via the network, and will be able to do so in a timely and convenient manner. Since this comprehensive record will include information about a patient from all locations where they have received health services, providers will no longer have to locate paper records at multiple care sites to learn the details of a patient's medical history, and patients will no longer bear the burden of sharing their history with providers. This will greatly improve providers' ability to make informed decisions about patient care, while reducing test duplications, unnecessary hospital admissions, and treatment caused errors.

Today, many providers and patients living in New England Telehealth Consortium's rural communities face real obstacles to effective continuity of care resulting from geographic isolation and limited access to clinical services that are well established in metropolitan locations. A successful bid to secure FCC Rural Health Care Pilot

monies that will support the expansion of broadband connectivity to a majority of rural communities will be a critical factor in making HealthInfoNet a resource that can serve all citizens equally regardless of where they live. The success of this program could lead to further implementation in other states.

### **B. Medical Needs of Rural Areas**

These aspects of the infrastructure are highlighted because each of them addresses the critical needs of delivering healthcare in a large rural area:

- The need to augment the healthcare workforce and provide access to specialists in order to provide healthcare close to a patient's home. For example, radiologists, dermatologists, intensivists, and psychiatrists are not available in many areas of the region.
- The need to alleviate the burden of long distance travel for providers, patients and their families.
- The need to share infrastructure and support costs between healthcare institutions.
- The need for the healthcare workforce to have access to educational opportunities.

### **C. Characteristics of NETC Members Leading to High Quality Telehealth**

The characteristics of the New England Telehealth Consortium region which have allowed this level of infrastructure development include:

- A history of collaboration between healthcare providers to meet the needs of the population and to address cost constraints, which would have made singular development prohibitive.
- Development of networks to solve particular problems in specific regions and between providers.
- The long time period over which these networks and collaborations have been working has allowed relationships of trust to develop.
- The joint success of most of these projects has encouraged more complex undertakings.

### **D. History of Grant Awards**

In 2006 alone, New England Telehealth Consortium members received several HHS grants through Health Resources and Services Administration for the following key telemedicine projects:

- Evidence of the strength of these collaborations is demonstrated in part by the history of grant awards through the U.S. Department of Agriculture's Distance Learning and Telemedicine Program. Beginning in 1998 Maine and New Hampshire's healthcare facilities received awards to match local capital investments on a yearly basis to build and sustain telemedicine infrastructure. From that one source, 25 awards totaling over \$8 million matched local dollars to build the infrastructure for telemedicine.