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Federal Communications Commission
Rural Health Care Mechanism
WC Docket No. 02-60
Washington, DC 20554

02-6

Re: Response to WC Docket No. ~~02-06~~: Pilot program to enhance rural healthcare providers access to advanced telecommunications and information services.

Dear Sir/Madam:

On behalf of Health Sciences South Carolina (HSSC) I am pleased to submit a proposal to address the requirements of the Federal Communications Commission solicitation to establish a pilot program to be called the Palmetto State Providers Network (PSPN). The primary goal of PSPN will be to enhance public and non-profit rural healthcare providers' access to advanced telecommunications and information services. HSSC is a 501(c)(3) statewide collaborative which brings together the state's four largest healthcare delivery systems and the state's two academic medical schools, among others. The goal of HSSC is to improve health status, education, and economic wellbeing for all South Carolinians. Given the mission, statewide focus and established infrastructure of HSSC, I feel HSSC is an excellent framework in which to stage the statewide two-year pilot program and to be responsible for the conduct of activities supported by the RHC Fund. To that end, the Palmetto State Providers Network (PSPN) will be organized as a subsidiary of the Health Sciences South Carolina, an organization within the meaning of Section 501 (c)(3) of the Internal Revenue Code.

This pilot program will seek to provide broadband access to most of the rural hospitals, most of the community health centers and many rural physicians offices across the state of South Carolina. In addition the program will provide the use of a web-based EHR for physician offices. These services will greatly enhance and extend existing state-wide tele-medicine, tele-health and tele-education services which are currently being provided by HSSC member organizations: Medical University of SC, University of South Carolina School of Medicine, Greenville Hospital System, Palmetto Health System and Spartanburg Regional Medical Center.

HSSC has solicited support from the many rural healthcare providers across the state. The reception and interest has been very strong. HSSC has received letters of support from many of the rural hospitals, community health centers and physicians (included in Appendix E).

The primary contact person for this pilot program application response is as follows:

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Professor of Biostatistics
Medical University of South Carolina
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A RESPONSE TO THE FCC
PILOT PROGRAM TO ENHANCE RURAL HEALTH CARE THROUGH TELECOMMUNICATIONS & INFORMATION SERVICES

Prepared for

FEDERAL COMMUNICATIONS COMMISSION
RURAL HEALTH CARE SUPPORT MECHANISM

From the

HEALTH SCIENCES SOUTH CAROLINA (HSSC)

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April 30, 2007

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I. INTRODUCTION

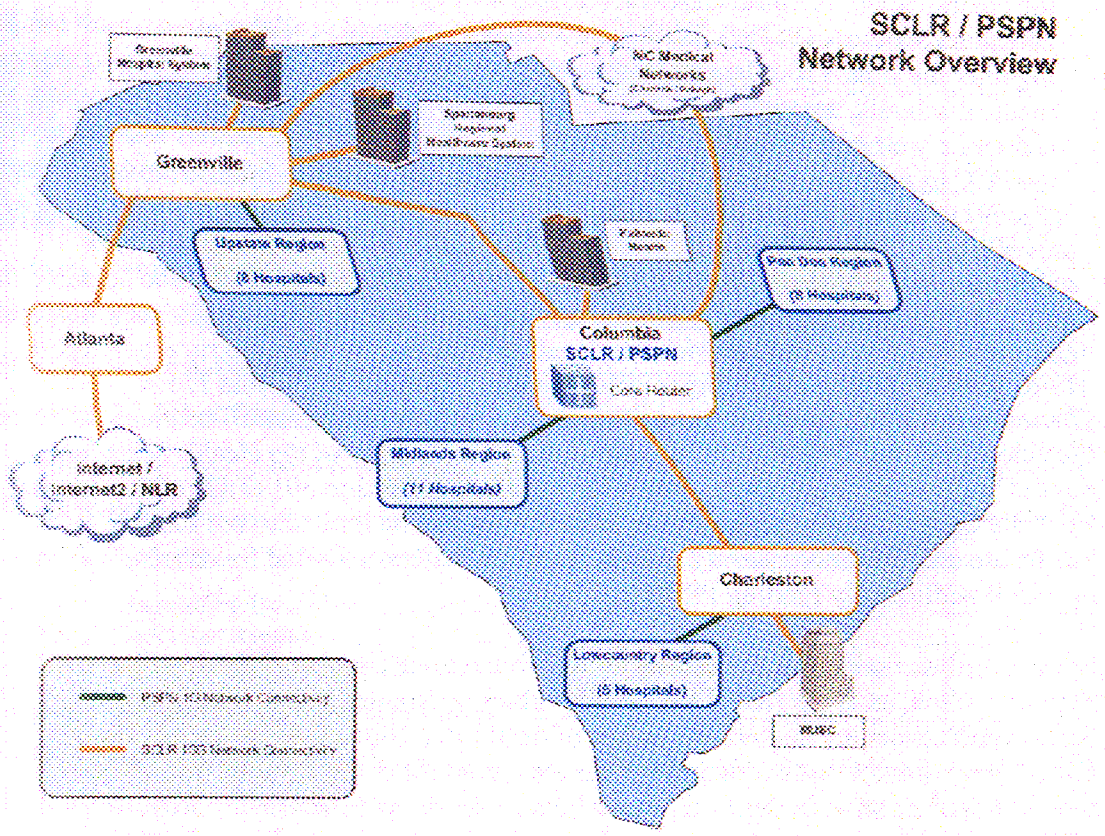
We respectfully request the Federal Communications Commission's (FCC) investment in the Health Sciences South Carolina (HSSC) and, specifically, in the Palmetto State Providers Network (PSPN). HSSC is a 501(c)(3) statewide collaborative which brings together the state's four largest healthcare delivery systems and the state's two academic medical schools, among others. HSSC's goal is to improve health status, education, and economic well being for all South Carolinians. Specifically, we request assistance from the FCC to establish and assist in the operation of the Palmetto State Providers Network (PSPN) whose physical network infrastructure will be an extrapolation / expansion of the developing South Carolina Light Rail (SCLR), a fiber optics backbone network connecting the HSSC entities. In addition to providing dedicated broadband connectivity, the PSPN will offer a suite of programmatic activities such as tele-health / tele-medicine / tele-education systems and services designed to significantly improve rural healthcare. HSSC will be the framework organization within which the PSPN and PSPN Governance, project management and operations will be established. The Palmetto State Providers Network (PSPN) will be organized as a subsidiary of the Health Sciences South Carolina, an organization within the meaning of Section 501 (c)(3) of the Internal Revenue Code. Initially, participation in the PSPN will be limited to not for profit healthcare entities. Subsequently for-profit entities will be solicited for membership as a means of additionally funding PSPN long term.

South Carolina ranks near the bottom of the United States in every health parameter. In South Carolina, as in the rest of the country, chronic diseases such as cardiovascular disease and cancer are the leading causes of death. In a 2004 study by United Health Foundation, South Carolina ranked 47th in the nation for overall health. South Carolina was 36th in the nation in deaths from cardiovascular disease, improving from 47th in 1990. Diabetes was the sixth leading cause of death in South Carolina in 2003. South Carolina is primarily a rural state and the findings outlined in the IOM's report "Quality Through Collaboration: The Future of Rural Health Care" certainly apply. In South Carolina, 36 of the state's 46 counties fall outside a metropolitan area and nearly 75 percent of the state is designated as rural. Some portion, if not all, of 44 of the state's 46 counties are medically underserved.

Significant funding and investment has been made in HSSC's programmatic initiatives across the state. The missing link has been broadband connectivity connecting the large academic and tertiary hospitals systems across the state. In the third quarter of 2007, HSSC will start implementation of the South Carolina Light Rail, a fiber optics backbone network linking the six HSSC entities.

The PSPN will be the natural extension of SCLR using a combination of technologies such as Ethernet/MPLS, Frame Relay, Private Line T1 and WiMAX wireless clouds (where available) out to the more than thirty small rural communities, such as Orangeburg, Darlington, Florence, Rock Hill, Beauford, Anderson, etc. This extension

will connect office based physicians, community health centers, and rural hospitals to the tertiary care and academic medical centers across the state and out to the "world" via Internet2/NLR.



II. Background

According to the South Carolina Department of Health and Environmental Control, South Carolina is ranked fourth highest in the nation for prevalence of diabetes and second highest for prevalence among African Americans. The overall prevalence of diabetes has increased in the state during the past two decades from 5.6% in 1988 to 9.3% in 2003. The most dramatic increase, 130%, occurred among African-American men. The cost of caring for those with diabetes is staggering: one of every seven patients in a South Carolina hospital has diabetes, and in 2001 alone, the total direct and indirect costs of hospitalizations and emergency room visits for diabetes in South Carolina were more than $928 million. As in the rest of the United States, the mature adult population is

increasing in South Carolina.

According to the National Governors' Association, South Carolina residents over age 65 are likely to increase from 12.1% of the population in 2000 to 20.7% in 2025, which is expected to be in the top half of all states. While poor health is not an inevitable consequence of aging, unfortunately many South Carolina adults age 65 and older suffer unnecessarily from chronic diseases that are avoidable or can be delayed through preventive healthcare.

In addition, there is a crisis in healthcare finance that will disproportionately impact South Carolina because of its struggling economy, poorer health status, and aging population. This crisis impacts cost and access to care for virtually every segment of the population: companies that underwrite health insurance, employees who pay premiums, the uninsured, and those on Medicare or Medicaid. This complex constellation of developments requires creative, comprehensive approaches and innovative tools that build on the latest scientific, technological, and clinical advances to meet these challenges. In summary, South Carolina is behind the United States as a whole in health (conditions? care? provisions? "health"-what?) and would benefit substantially from a major statewide effort to provide fundamental preventive care in a systematic fashion, now made possible by the merger of modern information systems, biomedical sciences and the burgeoning field of quality management.

In an attempt to ameliorate these poor health conditions in SC, Health Sciences South Carolina (HSSC) was established in 2004. HSSC is a collaborative organization with the goals of improving the health status of all South Carolinians through the support of clinical quality and research while also fostering economic growth. The founding partners of HSSC were the Greenville Hospital System, Palmetto Health, the Medical University of South Carolina, and the University of South Carolina. Clemson University and Spartanburg Regional Healthcare System joined the collaborative in 2005.

Each institution has pledged a minimum of $2 million per year for 10 years as matching funds to leverage the State-sponsored Centers of Economic Excellence (CoEE) program. This investment will be used to develop nationally recognized centers of research and economic excellence. HSSC is the first truly statewide integration of biomedical scientists, clinicians and data systems in the nation. Additionally, in 2006 the Duke Endowment awarded HSSC a three-year $21M grant to support of the Centers for Healthcare Quality and Clinical Effectiveness & Patient Safety. The vision of HSSC is to improve the quality of life, health and economic wellbeing of the State of South Carolina through a coordinated strategy of advanced health sciences research, statewide access to quality health care, and education.

The HSSC hospital system partners represent more than 50% of the hospital beds and discharges, over 60% of the nursing students, approximately 90% of the general medical education residents, and almost all of the health sciences research, as well as accreditation oversight of continuing medical education activities. The four hospital systems employ about one thousand physicians, as well. *This provides an unparalleled*

ability to impact the healthcare of an entire state with a single integrated research, disease management, provider communications network, and education program. HSSC is an incorporated non-profit organization led by a board of directors composed of the chief executive officer or president of each member institution. HSSC has received from the State of South Carolina for Centers of Economic Excellence matching money for the creation of the Center for Healthcare Quality, the Center for Clinical Effectiveness and Patient Safety, the Brain Imaging Center, the Center for Cancer Therapeutics, and the Center for Cardiovascular Diseases. The work of these Centers will result in healthier South Carolinians. We will achieve this through improved clinical outcomes, reduced medical errors, improved medical education of health providers, expanded healthcare employment to relieve manpower deficiencies, and increased access to quality healthcare services for all South Carolinians.

III. Current Situation and Statement of Need

The State of South Carolina has talented healthcare providers and excellent tertiary care centers in addition to a significant primary care network, yet its population suffers earlier death and more disability than almost any state in the nation. We believe that due to its size and demography, much of rural South Carolina could set an example for how to simultaneously improve the health status and economic well being of its population. To do so, its leaders and supporting organizations must take advantage of the information technology and healthcare benefits that are now available. Interventions that can improve health are remarkably straightforward and generic and it is now proven that systematic application of these interventions can reduce disability and improve longevity. Perhaps equally intriguing, the infrastructure needed to achieve this progress in health status is the same infrastructure that could catapult a state of South Carolina's composition into leadership in the development and use of the biomedical technology of the future.

HSSC is an excellent framework through which a significant number of the state's healthcare providers, rural hospitals, community health centers, academic medical centers, tertiary centers, and rural office based practices can be linked. This linkage will result in improved healthcare services delivered to the rural areas. A missing link in South Carolina is a statewide broadband network dedicated to the provision of tele-medicine, tele-health, and medical educations services with connection to a national backbone such as Internet2/NLR. The realization of a broadband network, the backbone of which will be the South Carolina Light Rail initiative, linking rural providers across the state to academic and tertiary centers is absolutely crucial to the success of HSSC as well as improving healthcare across South Carolina. This broadband network, PSPN will be the vehicle over which tele-health, tele-medicine, simulated caregiver training, remote ICU monitoring, medical education, remote evaluation of acute ischemic stroke and other valuable services can be made available to the rural healthcare providers. HSSC will be responsible for the conduct of activities supported by the fund.[1]

The South Carolina Light Rail (SCLR) is a collaborative project among the members of

[1] Addresses application requirement #1 – Responsible Party.

Health Sciences South Carolina to support the mission of HSSC. SCLR is envisioned as a dark fiber optics high-speed (10GB) network that links the four largest hospital systems and the academic medical centers to regional and national networks such as Southern Light Rail (SLR) in Atlanta, National Lambda Rail (NLR), Internet2/NLR, and SURAgrid (Southeastern University Research Association grid computing initiative). South Carolina lags behind all but several states in the creation of a dedicated, statewide networking resource to foster development of the knowledge economy and is operating at a competitive disadvantage.

IV. Goals and Objectives of the Palmetto State Providers Network [2]

The goals of the Palmetto State Providers Network, herein referred to as the PSPN, include the overall goal of HSSC and that is improving the health and well-being of the citizens of South Carolina. To that end the PSPN will connect large tertiary centers, academic medical centers, rural hospitals, community health centers, and rural office-based practices together on a broadband network with connectivity to Internet2/NLR. This will allow for and enhance existing tele-medicine, tele-health, simulation training, remote ICU monitoring, remote evaluation of acute ischemic stroke and medical education programs across the state. Both the Medical University of SC and the School of Medicine (SoM) at the University of SC have existing tele-medicine, tele-health and medical education activities; these activities will be expanded and enhanced with the provision of broadband connectivity. One of the barriers to recruiting providers to and retaining them in rural areas is the concern about isolation. Access to consultation services via a broadband video linkage would help address this problem. The broadband network would allow for 300 frames per second full motion video as well as mega bit data transfer speed.

Members of the MUSC and USC School of Medicine (SoM) faculty travel to communities across the state to hold specialty clinics. The ability to provide these services without having to travel these distances could be quite advantageous and could potentially increase the number of patients and communities that could be served. Having a local physician in the rural community working with MUSC or USC physicians who are linked by video from Charleston or Columbia could be economical regarding the consultant's time. This exercise could expand the expertise of the local physician who is working with the consultant and patients.

A similar service to outlying hospitals can improve access to specialty consultation and reduce transfers to MUSC or other tertiary or other referral hospitals that could have been prevented if such consultation was available.

There is a keen interest on the part of the four large hospital systems to provide 7/24 remote ICU monitoring to surrounding rural hospitals that cannot justify having

[2] Addresses application requirement #2 – Goals and Objectives.

intensivists on staff at all times. The PSPN would allow for economies-of-scale in this activity. The same is true of remote evaluation of acute ischemic stroke.

Other benefits from building the PSPN would include:

- The ability to enhance and improve the existing educational programs with students on rotations in rural communities across the state and engage rural providers in translational research. To that end, HSSC is the framework through which a regional Clinical and Translational Science Award (CTSA) proposal is being submitted to the National Institutes of Health (NIH). Rural providers could participate in meetings about the protocol and not have to leave their community. This could enhance their willingness to participate in research and the enrollment of patients from across the state in research projects. The PSPN will link many sites together for live, interactive educational programs on topics of interest at times of the day that would be convenient to the participants in the rural communities.

- The use of medical simulation centers to assist in the training of tomorrow's caregivers using advanced medical simulators. The HSSC Center for Clinical Effectiveness and Patient Safety has created medical simulation centers at the four HSSC hospital systems sites. These four centers will be connected via the fiber optics backbone, SCLR. There is a need to extend this technology out to some smaller communities such as Beaufort and Rock Hill, areas that have nurse and EMS training programs. The PSPN will provide the broadband connectivity to allow these rural areas to connect to the HSSC simulation centers and share in the advanced technology.

Additionally, HSSC is in a position to offer via the proposed broadband network to amenable rural office based practices the use of a web based EHR to capture clinical information in an electronic format. Less than 15% of rural based physicians in SC have clinical automation. The intent is to make the existing EHR available at minimal cost. The digital capture of clinical information will increase the efficiency and efficacy of the ongoing statewide studies in hypertension and diabetes. Several MUSC and USC investigators have statewide NIH funded disease studies whose efforts would benefit immensely if participating caregivers were capturing clinical electronically and could transmit that data back to investigators in the same manner.

The PSPN will greatly improve the efficacy of the proposed Medicare (MMA 646) and Medicaid disease management projects by improving the communications between patient and physician and among physicians within the respective projects. In the case of the 646 Medicare pilot programs, this will cover 57,000 patients across fifteen practice groups in the low country of SC.

The state of South Carolina is not a large state, neither is it complex. Beyond the four cities of Charleston, Columbia, Greenville and Spartanburg the state is rural for the most part. The PSPN will extend out to more than thirty second-tier towns in an attempt to

connect as many of the small hospitals, community health centers and physicians' offices as possible. A combination of telecommunication technologies will be used to link the outlying areas to the fiber optics backbone. (See PSPN network map in Appendix D). An attempt will be made to use WiMax wireless cloud technology where it is available. These WiMax wireless clouds will extend out, in most cases, from the local hospital a distance not to exceed the ability to provide several megabits of bandwidth. It is anticipated that within the clouds most of the community health centers and surrounding physicians' offices will be located. If WiMax is not available, DSL and/or cable modems will be used.

Most of the rural care providers in SC have some type of existing connection to the internet. HSSC will work with the community health center, clinics, and physicians' offices to replace the existing link with a link to the area's PSPN point-of-presence, usually the regional rural hospital. In most cases this can be done at no net new cost to the entities. We will use these existing fees to help fund PSPN.

V. Estimated PSPN'S Total Cost for Each Year[3]

Year 1

10GB (20 yr. IRU) with I2 link (help desk & NOC)	$4,385,000
Connection to Internet2/NLR (one time)	200,000
Internet2/NLR Annual Membership	125,000
32 Ethernet Local Loop Circuits (help desk & NOC)	1,894,000
Administrative Costs	50,000
EHR Expense	200,000
Total Year 1 Costs	**$6,854,000**

Year 2

10GB Fiber Maintenance & Recurring Costs (help desk & NOC)	$1,000,000
Internet2/NLR Annual Membership	125,000
32 Ethernet Local Loop Circuits (help desk & NOC)	1,218,000
Administrative Costs	50,000
EHR Expense	100,000
Total Year 2 Costs	**$2,493,000**

VI. Financial Support Other Than Fund[4]

[3] Addresses application requirement #3 – Estimated Costs by Year.
[4] Addresses application requirement #5 – Non-Fund Financial Support.

Each HSSC member organization has committed a minimum of $2 million per year for 10 years to develop nationally recognized centers of biomedical research and economic excellence that support their respective missions and improve the overall health status of South Carolinians and beyond. These investments are structured to be eligible for matching funds appropriated through the South Carolina Research Centers of Economic Excellence Act for Professorships. The South Carolina Research Centers of Economic Excellence Act for Professorships allows funds generated through the state lottery program to be directed to an Endowed Chairs Program. These research investments, initially authorized for $200 million, expand the opportunity to attract and recruit nationally renowned healthcare researchers, accelerate economic development through healthcare, compete more effectively for national NIH grant support and attract additional federal, state and private funds.

Health Sciences South Carolina took a significant step forward on August 15, 2006, when the Duke Endowment announced a three-year grant to Health Sciences South Carolina worth $21 million — the largest single grant ever made by the $2.7 billion foundation's health care division. The historic multi-million-dollar grant will support the establishment of the Center of Healthcare Quality and Clinical Effectiveness and will enable HSSC to bring about sweeping change through health sciences research and fully develop and implement Centers of Economic Excellence Endowed Chairs programs. The impact of the grant will be magnified because some of the Duke funds will be used to draw a dollar-for-dollar match in state money. The grant is a strong affirmation of the decision to concentrate on the health sciences for economic growth and will fund projects that advance HSSC's goal of improving the safety, quality and effectiveness of care delivered in South Carolina's hospitals through research and training.

The preponderance of the HSSC secured funds will be used for **programmatic** activities as described above. However, the State's endowed chair oversight committee has authorized $2.5M of funding for support of the fiber optics backbone (SCLR). This $2.5M must be matched by external funds and we proposed to use $2.5M of requested funding from the Rural Health Care (RHC) Fund to make the match. In addition, each of the three research universities has requested $1.5M in state appropriations in the FY08 South Carolina state budget to support the fiber optics backbone network. The collection of $4.5M of state funding has been approved by the House and has been received favorably in the Senate, would be available in July 07. HSSC will provide financial support and gifts-in-kind for PSPN not provided for the fund as well as some of the long-term support.

HSSC has supplied gifts-in-kind from the member organizations in order to provide extensive time and expertise to develop and research the design and implementation plans for the fiber optic statewide network backbone. These same personnel have spent comparable time on the design of PSPN. This same network working group has extended the design and implementation plans for PSPN. The HSSC network-working group consists of experienced network engineers from the six HSSC member organizations. Additionally, HSSC will fund a significant portion of the cost of the establishment of the fiber optic backbone network as well as all long term operating costs.

HSSC member organizations each have existing videoconference, tele-radiology, tele-medicine, and tele-health equipment that will be used as part of the PSPN activities. HSSC through the services of Dr. Roger Poston of MUSC will provide ongoing coordination of the programmatic activities (tele-health, tele-medicine, remote ICU monitoring, and tele-education) of the PSPN.

For-profit network participants who join PSPN after the initial phase, will pay for their connections to the area's broadband point-of-presence (POP), usually the regional hospital, and contribute to the ongoing support of PSPN. In the case of physicians' offices, most are already paying for some type of connectivity to the commercial Internet. The broadband link to the PSPN would replace the existing connection. Medical insurance providers and Rx entities will be assessed fees to be part of PSPN.[5]

Additionally, a portion of the fees from the tele-medicine / tele-health activities will be used to support the PSPN.

VII. PSPN Facilities[6,7]

The PSPN will include the following health care facilities in South Carolina.

SC Primary Health Care Association (SCPHCA)

The South Carolina Primary Health Care Association (SCPHCA) was incorporated in 1979 and staffed after receiving 501(c)(3) designation in 1985 in response to a need to get health care services into medically underserved areas of South Carolina.

Community based private non-profit health centers provide primary care services to citizens across the state. As an advocate for those that do not have access to basic health services, the SCPHCA works to ensure the continued growth of community based programs and centers that provide primary care for persons most in need.

SCPHCA affiliated community; mental, migrant health and homeless centers are an integral part of the state's overall health care system. A mix of urban and rural, the community health centers provide health care services to more than 200,000 patients each year. In many communities, these centers are the only available health care providers.

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[5] Addresses application requirement #4 – Non-profit Cost Sharing.
[6] Addresses application requirement #6 – Health Care Facilities Included.
[7] Addresses application requirement #7 – Name, Address, RUCA Code of Facilities.

SCPHCA Members

1. Black River Healthcare, Inc.
   P.O. Box 578
   12 West South Street
   Manning, SC 29102
   Phone: 803-433-6790
   RUCA Code: 10.2

2. CareSouth Carolina, Inc.
   P.O. Box 1090
   201 south Fifth Street
   Hartsville, SC 29550
   RUCA Code: 4.2

3. Carolina Health Centers, Inc.
   313 Main Street
   Greenwood, SC 29646
   Phone: 864-388-0301
   RUCA Code: 4.0

4. Eau Claire Cooperative Health Center, Inc.
   4605 Monticello Road
   Columbia, SC 29203
   Phone: 803-733- 5969
   RUCA Code: 1.0

5. Family Health Centers, Inc.
   P.O. Box 1806
   3310 Magnolia Street, NE
   Orangeburg, SC 29115
   Phone: 803-531-6900
   RUCA Code: 4.0

6. Franklin C. Fetter Family Health Centers, Inc.
   51 Nassau Street
   Charleston, SC 29403
   Phone: 843-722-4112
   RUCA Code: 1.0

7. Health Care Partners of South Carolina, Inc.
   P.O. Box 2100
   1608 North Main Street
   Conway, SC 29526
   Phone: 843-248-4700
   RUCA Code: 1.0

8. Little River Medical Center, Inc.
   287 Highway 90 East
   Fox Fire Plaza, Suite 6
   Little River, SC 29566
   Phone: 843-663-1013 ext. 9
   RUCA Code: 7.0

9. Low Country Health Care System, Inc.
   P.O. Box 990
   333 Revolutionary Road
   Fairfax, SC 29827
   Phone: 803-632-2533
   RUCA Code: 8.0

10. Margaret J. Weston Medical Center, Inc.
    P.O. Box 277
    4645 Augusta Road
    Clearwater, SC 29822
    Phone: 803-593-9283
    RUCA Code: 2.0

11. New Horizon Family Health Services, Inc.
    P.O. Box 287
    130 Mallard Street
    Greenville, SC 29602-0287
    Phone: 864-233-1534
    RUCA Code: 1.0

12. North Central Family Medical Center, Inc.
    P.O. Box 28
    1131 Saluda Street
    Rock Hill, SC 29731
    Phone: 803-325-7744
    RUCA Code: 1.0

13. ReGenesis Community Health Center, Inc.
    P.O. Box 5158
    750 South Church Street
    Spartanburg, SC 29304
    Phone: 864-582-2411
    RUCA Code: 1.0

14. Richland Community Health Care Association, Inc.
    1520 Laurel Street
    Columbia, SC 29201
    Phone: 803-658-3005
    RUCA Code: 1.0

15. Sandhills Medical Foundation, Inc.
    P.O. Box 366
    McBee, SC 29101
    Phone: 843-658-3005
    RUCA Code: 10.5

16. Sea Island Medical Center, Inc.
    P.O. Box 729
    Johns Island, SC 29457
    Phone: 843-559-3676
    RUCA Code: 1.0

17. St. James-Santee Family Health Center, Inc.
P.O. Box 608
1189 Tibwin Road
McClellanville, SC 29458
Phone: 843-887-3274
RUCA Code: 2.0

18. Sumter Family Health Center, Inc.
1278 N. Lafayette Drive
Sumter, SC 29150
Phone: 803-774-4500
RUCA Code: 1.0

19. Beaufort-Jasper-Hampton Comprehensive Health Services, Inc.
P.O. Box 357
Highway 170
Ridgeland, SC 29936
Phone: 843-987-7400
RUCA Code: 7.4

SCPHCA Associate Members

1. Beckman Center for Mental Health Services
1547 Parkway, Suite 100
Greenwood, SC 29646-3050
Phone: 864-229-7120
RUCA Code: 4.0

2. Columbia Area Mental Health Center
P.O. Box 4440
Columbia SC 29240-4440
RUCA Code: 1.0

2715 Colonial Drive
Columbia, SC 29203
Phone: 903-898-4820
RUCA Code: 1.0

3. Hope Health Inc. and Palmetto Project
P.O. Box 653
Florence, SC 29503
Phone: 843-667-9414
RUCA Code: 1.0

4. Lexington County Community Mental Health Center
301 Palmetto Park Boulevard
Lexington, SC 29072
Phone: 803-996-1500
RUCA Code: 1.0

5. Palmetto Project AccessNET
P.O. Box 31075
Charleston, SC 29417
Phone: 843-216-0283
RUCA Code: 1.0

6. Tri-County Mental Health Center.
P.O. Box 918
1035 Cheraw Highway
Bennettsville, SC 29512
Phone: 843-454-0841
RUCA Code: 4.0

7. Waccamaw Center for Mental Health
164 Waccamaw Medical Park Drive
Conway, SC 29526
Phone: 843-347-5060
RUCA Code: 1.0

Area Health Education Consortium (AHEC)

The South Carolina Area Health Education Consortium (SC AHEC) began in 1972 as one of the 11 originally funded projects of the federal AHEC program. AHEC functions as a cooperative effort of the Medical University of South Carolina, the University of South Carolina, South Carolina community teaching hospitals, and regional AHEC Centers. AHEC has successfully grown into a system that works closely with the state's

institutions of higher education and other partners to educate, recruit, and retain health care providers.

South Carolina AHEC Members

Lowcountry AHEC
Diane M. Kennedy, M.S.
Center Director
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South Carolina Rural Hospitals

There are 60 hospitals in South Carolina, 25 of which are located in rural areas (North Carolina Rural Health Research and Policy Analysis Center, 2006). The state has five hospitals currently identified by the Flex Monitoring Team as Critical Access Hospitals. There are 95 Rural Health Clinics in South Carolina, and 21 Federally Qualified Health Centers provide services at 138 sites in the state (Kaiser, 2004). Fifteen percent of South Carolina residents lack any health insurance (Kaiser, 2003-2004).

Rural and Very Rural Hospitals by County

1. **Abbeville County**
   Designation: Rural / Very Rural
   Abbeville Area Medical Center
   420 Thompson Circle
   P.O. Box 887
   Abbeville, SC 29620
   Phone: 864-366-5011
   Facilities in Abbeville County = 1
   Beds in Abbeville County = 25
   RUCA Code: 7.4

2. **Allendale County**
   Designation: Rural / Very Rural
   Allendale County Hospital
   1787 Allendale Fairfax Hwy
   P.O. Box 218
   Fairfax, SC 29827
   Phone: 803-632-3311
   Facilities in Allendale County = 1
   Beds in Allendale County = 25
   RUCA Code: 8.0

3. **Bamberg County**
   Designation: Rural / Very Rural
   Bamberg County Memorial Hospital
   509 North Street
   Bamberg, SC 29003
   Phone: 803-245-4321
   Facilities in Bamberg County = 1
   Beds in Bamberg County = 59
   RUCA Code: 7.4

4. **Barnwell County**
   Designation: Rural / Very Rural
   Barnwell County Hospital
   811 Reynolds Road
   Barnwell, SC 29812
   Phone: 803-541-4365
   Facilities in Barnwell County = 1
   Beds in Barnwell County = 53
   RUCA Code: 8.0

5. **Cherokee County**
   Designation: Rural
   Upstate Carolina Medical Center
   1530 N. Limestone St.
   Gaffney, SC 29340
   Phone: 864-487-1500
   Facilities in Cherokee County = 1
   Beds in Cherokee County = 125
   RUCA Code: 4.0

6. **Chester County**
   Designation: Rural / Very Rural
   Chester Regional Medical Center
   One Medical Park Dr.
   Chester, SC 29706
   Phone: 803-581-9400
   Facilities in Chester County = 1
   Beds in Chester County = 82
   RUCA Code: 4.0

7. **Chesterfield County**
   Designation: Rural / Very Rural
   Chesterfield General Hospital
   711 Chesterfield Highway
   P.O. Box 151
   Cheraw, SC 29520
   Phone: 843-537-7881
   Facilities in Chesterfield County = 1
   Beds in Chesterfield County = 59
   RUCA Code: 7.0

8. **Clarendon County**
   Designation: Rural / Very Rural
   Clarendon Memorial Hospital
   10 Hospital Street
   P.O. Box 550
   Manning, SC 29102
   Phone: 803-435-8463
   Facilities in Clarendon County = 1
   Beds in Clarendon County = 56
   RUCA Code: 10.6

9. **Colleton County**
   Designation: Rural / Very Rural
   Colleton Medical Center
   501 Robertson Blvd.
   P.O. Box 5001
   Walterboro, SC 29488
   Phone: 843-549-2000
   Facilities in Colleton County = 1
   Beds in Colleton County = 131
   RUCA Code: 5.0

10. **Darlington County**
    Designation: Rural / Very Rural
    McLeod Medical Center – Darlington
    701 Cashua Ferry Rd.
    P.O. Box 1859
    Darlington, SC 29532
    Phone: 843-777-1100
    Beds = 72
    RUCA Code: 4.1

    Carolina Pines Regional Medical Center
    1304 W. Bobo Newsome Hwy
    Hartsville, SC 29550
    Phone: 843-339-4100
    Beds = 116
    RUCA Code: 4.2

    Facilities in Darlington County = 2
    Beds in Darlington County = 188

11. **Dillon County**
    Designation: Rural / Very Rural
    McLeod Medical Center – Dillon
    301 East Jackson St.
    P.O. Box 1327
    Dillon, SC 29536
    Phone: 843-774-4111
    Facilities in Dillon County = 1
    Beds in Dillon County = 79
    RUCA Code: 4.0

12. **Edgefield County**
    Designation: Rural / Very Rural
    Edgefield County Hospital
    300 Ridge Medical Plaza
    P.O. Box 590
    Edgefield, SC 29824
    Phone: 803-637-3174
    Facilities in Edgefield County = 1
    Beds = 25
    RUCA Code: 7.3

13. **Fairfield County**
Designation: Rural / Very Rural
Fairfield Memorial Hospital
102 US Highway 321 Bypass N.
P.O. Box 620
Winnsboro, SC 29180
Phone: 803-635-0233
Facilities in Fairfield County = 1
Beds = 25
RUCA Code: 7.1

14. **Georgetown County**
Designation: Rural
Georgetown Memorial Hospital
606 Black River Road
P.O. Box 421718
Georgetown, SC 29440
Phone: 843-527-7000
Beds = 131
RUCA Code: 4.2

Waccamaw Community Hospital
4070 Highway 17 By-Pass
P.O. Drawer 3350
Murrells Inlet, SC 29576
Phone: 843-652-1000
Beds = 111
Facilities in Georgetown County = 2
Beds in Georgetown County = 242
RUCA Code: 1.0

15. **Greenwood County**
Designation: Rural
Self Regional Healthcare
1325 Spring Street
Greenwood, SC 29646-3860
Phone: 864-725-4111
Facilities in Greenwood County = 1
Beds in Greenwood County = 394
RUCA Code: 4.0

16. **Hampton County**
Designation: Rural / Very Rural
Hampton Regional Medical Center
595 West Carolina Avenue
P.O. Box 338
Varnville, SC 29944
Phone: 803-943-2771
Facilities in Hampton County = 1
Beds in Hampton County = 68
RUCA Code: 7.0

19. **Jasper County**
Designation: Rural / Very Rural
Costal Carolina Medical Center
1000 Medical Center Drive
Hardeeville, SC 29927
Phone: 843-784-8182
Facilities in Jasper County = 1
Beds in Jasper County = 41
RUCA Code: 10.5

20. **Kershaw County**
Designation: Rural / Very Rural
Kershaw County Medical Center
1315 Roberts Street
P.O. Box 7003
Camden, SC 29020
Phone: 803-432-4311
Facilities in Kershaw County = 1
Beds in Kershaw County = 121
RUCA Code: 4.2

21. **Lancaster County**
Designation: Rural / Very Rural
Springs Memorial Hospital
800 West Meeting Street
Lancaster, SC 29720
Phone: 803-286-1481
Facilities in Lancaster County = 1
Beds in Lancaster County = 186
RUCA Code: 4.0

22. **Laurens County**
Designation: Rural
Laurens County Hospital
22725 Highway 76 East
P.O. Drawer 976
Clinton, SC 29325
Phone: 864-833-9100
Facilities in Laurens County = 1
Beds in Laurens County = 76
RUCA Code: 4.0

23. **Lee County**
Designation: Rural / Very Rural
Lee Correctional Inst. Infirmary
1204 East Church St
Bishopville, SC 29010
Phone: 803-896-2400
Facilities in Lee County = 1
Beds in Lee County = 20
RUCA Code: 7.4

23. **Marion County**
Designation: Rural / Very Rural
Marion County Medical Center
2829 East Highway 76
P.O. Box 1150
Mullins, SC 29574-6035
Phone: 843-431-2000
Facilities in Marion County = 1
Beds in Marion County = 124
RUCA Code: 7.0

24. **Marlboro County**
Designation: Rural
Marlboro Park Hospital
1138 Cheraw Highway
P.O. Box 738
Bennettsville, SC 29512
Phone: 843-479-2881
Facilities in Marlboro County = 1
Beds in Marlboro County = 102
RUCA Code: 4.0

25. **Newberry County**
Designation: Rural
Newberry County Memorial Hospital
2669 Kinard Street
P.O. Box 497
Newberry, SC 29108
Phone: 803-276-7570
Facilities in Newberry County = 1
Beds in Newberry County = 90
RUCA Code: 4.2

26. **Oconee County**
Designation: Rural / Very Rural
Oconee Memorial Hospital
298 Memorial Drive
Seneca, SC 29672-9943
Phone: 864-882-3351
Facilities in Oconee County = 1
Beds in Oconee County = 160
RUCA Code: 4.2

27. **Orangeburg County**
Designation: Rural
Facility: Regional Medical Center of Orangeburg/Calhoun Counties
3000 St. Matthews Road
Orangeburg, SC 29118-1498
Phone: 803-395-2200
Beds = 286
RUCA Code: 4.0

William J. McCord Adolescent Treatment Facility
910 Cook Road
P.O. Box 1166
Orangeburg, SC 29118
Phone: 803-536-4900
Beds = 15
RUCA Code: 4.0

Facilities in Orangeburg County = 2
Beds in Orangeburg County = 301

28. **Union County**
Designation: Rural
Wallace Thomson Hospital
322 West South Street
P.O. Box 789
Union, SC 29379
Phone: 864-429-2601
Facilities in Union County = 1
Beds in Union County = 143
RUCA Code: 4.2

29. **Williamsburg County**
Designation: Rural / Very Rural
Williamsburg Regional Hospital
500 Nelson Boulevard
P.O. Box 568
Kingstree, SC 29556-4027
Phone: 843-355-0303
Facilities in Williamsburg County = 1
Beds in Williamsburg County = 25
RUCA Code: 7.0

Health Sciences South Carolina

Health Sciences of South Carolina is composed of the four largest health care delivery systems in the state, which includes the state's academic medical centers.

- Palmetto Richland Health System (PRHS)
- Greenville Hospital System (GHS)
- Spartanburg Regional Medical Center (SRMC)
- Medical University of South Carolina (MUSC)

VIII. Previous Experience in Tele-Medicine Programs[8]

Both individuals and HSSC entities have extensive experience with tele-medicine and health activities across the state of South Carolina. Experience is listed below, organized by HSSC entity:

Spartanburg Regional Medical Center (SRMC)

Robert Rainer, MD, Medical Director at SRMC

Dr. Rainer was awarded a North Carolina Baptist Hospital (NCBH) Developmental technology grant to develop a telepathology program in 1994.

This program connected two remote hospitals in North Wilkesboro and High Point to NCBH. The project was intended to test the utility of a "store and forward" verses a real time "obtain" of a pathologic diagnosis from a case developed at the remote site.

From 1995 until his departure in 1998, Dr. Rainer served as the Director of Tele-medicine and he established tele-medicine services at NCBH. This entailed teleradiology, Pediatric echo cardiology, Geriatric psychiatry, and teledermatology. This program was an early example of tele-medicine services, and had many technical / operational barriers to overcome. The teleradiology, geriatric psychiatry and pediatric echocardiology services are still operational today. The program was built mainly on grant dollars, and was unable to generate operational funds because of the inability to bill for the services rendered during the time it was operational. This program was discontinued upon his departure, primarily due to the lack of billing methodology to cover the telecommunication costs.

In addition to this experience, he has initiated the development of tele-pathology standards to be adopted by the College of American Pathologists during their inspection

[8] Addresses application requirement #8 – Previous Experience.

process of laboratories. He has worked with the Department of the Navy and Army to assist with development of tele-medicine systems. He has given several talks at national meetings on his tele-pathology experience.

Medical University of South Carolina (MUSC)

Philip Costello, MD, Chairman Department of Radiology.

Dr. Costello's department reads images for Low Country Medical Group in Beaufort, SC, and is interested in doing Pediatric outside reads for other medical facilities as well. As there is a statewide shortage of Pediatric radiologists, this would be a big win for pediatricians statewide.

Frank Clark, Ph.D., CIO/VP for Information Technology

Dr. Clark has wide spread experience in developing and supporting tele-radiology and tele-dermatology programs in Tennessee with the University of Tennessee Medical Center in Memphis. He led the design and development of the east Tennessee Physicians' network, which provides secure remote access for community-based physicians into hospitals located in and around Knoxville, TN.

Peter Cotton, MD

Dr. Cotton led a pilot study was to evaluate the quality of tele-endoscopy for cancer screening. Methods: 10 patients scheduled for endoscopic procedures were observed simultaneously by the endoscopist and a remote observer connected over a 512kbps ISDN line. Findings by both were compared for concordance on malignant or premalignant lesions. Results: The image quality was adequate to support remote diagnosis of GI cancer and abnormal lesions by an experienced observer.

Girish Shirali, MD, Director of Pediatric Echocardiography

Dr. Shirali has extensive experience using Sony's TriniCom 5100Plus tele-medicine units. The systems link hospitals participating in MUSC's "Children's Heart Program of South Carolina." The systems will be used to provide pediatric services to newborns with congenital heart disease and for educational purposes. The TriniCom 5100Plus systems are currently installed at MUSC, and in the home of the program director, for emergency situations. Tele-medicine will allow them to consult with Greenville Hospital Systems, Greenville, S.C.; USC/Richland Memorial Hospital, Columbia, S.C.; and Piedmont-McLeod Hospital, Florence, S.C. concerning newborns with serious heart and medical conditions. MUSC plans to have additional units installed and running in these and other South Carolina hospitals.

University of South Carolina; School of Medicine (USC SoM)

Richard Davis, MD

The Rural Primary Care Education Projects in Bennettsville, Kershaw, and Winnsboro, S.C., serve as platforms for research on rural health care delivery, including tele-medicine. In addition, the SoM houses the South Carolina Tele-medicine Network that provides capacity for the Department of Ophthalmology's health outcomes research. In this extramurally funded study translational research will be used to evaluate tele-medicine technology using interactive video conferencing as a novel means to increase the availability of health professionals in rural communities for the effective delivery of a diabetes self-management education program and as a means to provide retinal screenings in the primary care setting.

Rural Primary Care Center Network

Building on its primary mission to train physicians who serve the state's underserved populations, the USC School of Medicine created the Rural Primary Care Center Network. In 1991, the John A. Martin Primary Health Care Center opened in Winnsboro, providing educational experiences for USC medical students and health care to residents of Fairfield County. In 1998, Kershaw Family Medicine was created in partnership with Springs Memorial Hospital. A third center, McLeod-Bennettsville Family Medicine, was established in 2001 in medically underserved Marlboro County.

USC SoM has metro Ethernet provision to rural sites in Kershaw, Bennettsville, and Winnsboro. This is primarily related to the video conferencing capabilities in support of tele-medicine activities for the SoM.

IX. PSPN Governance, Project Management, and Work Plan[9]

Governance

The Palmetto State Providers Network (PSPN) is organized as a subsidiary of the Health Sciences South Carolina, an organization within the meaning of Section 501 (c)(3) of the Internal Revenue Code. The PSPN will be governed by a board consisting of members from: HSSC (2), rural hospitals from the SC Hospital Association (2), SC Rural Primary Health Care Association (2), AHEC (1), and four at-large rural primary care physicians.

The PSPN Board members will be selected by the HSSC Board with input from respective organizations. Members will serve for two years with membership staggered to

[9] Addresses application requirement #9 – Governance and Project Management

provide continuity in membership. The PSPN Board will organize itself, develop a charter, elect officers, and approve budgets. Additionally, there will be a tele-health / tele-medicine advisory committee that will oversee the programmatic activities of PSPN. This committee will have members from Medical University of SC (MUSC), University of SC School of Medicine (USC SoM), Palmetto Richland Health System (PRHS), Greenville Hospital System (GHS), Spartanburg Regional Medical Center (SRMC), AHEC, South Carolina Primary Health Care Association (SCPHCA), SC Hospital Association (SCHA), and two rural-based primary care physicians. The PSPN Governance Board will determine committee members to represent the above organizations. (See Appendix A for a detailed Governance structure).

Management

Dr. Frank Clark is the Vice President for Information Technology and CIO at MUSC. He chairs the HSSC CIO Committee and will serve as the overall PSPN project coordinator / manager. He will act as the interlocutor between the HSSC Board and the PSPN Board.

Dr. Roger Poston of MUSC will coordinate the tele-medicine / tele-health activities of the PSPN across the state; he will work closely with the advisory committee in this capacity. His services will be provided by HSSC. Dr. Poston will assist Dr. Clark in the overall management of PSPN.

Project management expertise will be provided by the MUSC Project Management Officer (Dan Furlong, PMP, MBA), of the MUSC Office of the CIO. Dr. Clark and Mr. Furlong's services will be provided by HSSC.

Dr. Clark will oversee the day to-day operations and management of the PSPN with some assistance from Dr. Poston and HSSC operations staff. His activities will be done with oversight from the PSPN Board. The operational management (NOC) of the PSPN physical network will be outsourced to a network vendor. This will include a 7/24 help desk and trouble ticket tracking.

Planning

Extensive planning for the fiber backbone (SCLR) has been under way for eighteen months, employing a formal project management methodology and defined procedures for adopting standards, procedures, and guidelines. A working group of professional IT staff and network experts from HSSC has visited successful statewide networks in Georgia, North Carolina, and Florida and has examined best practices in additional states (OH, IN) that may serve as models for South Carolina. The working group has consulted regularly with potential industry partners such as Cisco, PalmettoNet, SCANA, DukeNet, and BellSouth. The working group has been charged with identifying fiber throughout South Carolina, exploring options for securing long-term fiber lease, writing