A statement of the problem: The FCC's National Broadband Plan indicates that the delivery of healthcare services is its number one priority. Stroke has long been the third leading cause of death in this country, and a leading cause of adult disability. In 1996, the first therapeutic treatment to treat stroke patients became available in the United States, a powerful clot-buster drug known as tissue plasminogen activator, or tPA. While highly effective, this treatment has a small window of opportunity to be used, which is a mere three hours from the onset of stroke. When acute stroke occurs, the typical patient loses 1.9 million neurons each minute in which stroke is untreated. Additionally, it requires hospitals to meet strict requirements to become certified stroke centers to administer this life-saving drug. Certification requires hospital specialists, diagnostic equipment, and documented processes for the optimal treatment of acute stroke. The small time window, limited access to specialists, and lack of significant public education about stroke recognition and response explains why only 3-5% of stroke patients receive tPA. While most hospitals in this country have the required diagnostic equipment, few have the 24 x 7 access to the necessary physician specialists, particularly in rural areas. While there are roughly 4,500 hospitals in this country, it is estimated that only about 700 (16 percent) of them are recognized stroke centers. This leaves significant populations in the rural states without easy access to optimal stroke care. Therefore, where you live will likely determine your ability to survive a stroke with minimum disability. This barrier of access to care regardless of where a stroke patient resides is the problem we plan to address with broadband service adoption. Overall approach to addressing the need: National Stroke Association is proposing a broadband-based telestroke demonstration project to advance telemedicine for acute stroke treatment, e.g. 'telestroke,' in the US. To date, there has not been an evidence-based medicine trial design in the world of telestroke that clearly demonstrates the efficacy of telestroke treatment. Without this evidence telestroke will not be accepted by healthcare providers nationally nor by CMS and other 3rd party payors. The telestroke project will use two-way real time video and audio via broadband technology to connect physician specialists at stroke center hospitals (hubs) to the stroke patients at non-stroke center hospital emergency rooms (spokes) for evaluation, diagnosis, and treatment. The project is designed to demonstrate through rigorous data collection that stroke care received via telemedicine at spoke hospitals is equal to stroke care received at a stroke center hospital (hub), and superior to stroke care received at hospitals that are not stroke centers and do not have telestroke support (control hospitals). We anticipate that the outcomes of this project will facilitate the extension of optimized stroke care to vast rural areas. This will virtually bring the physician specialist to the emergency room of the patient in the spoke hospital, as though the physician were literally in the same room. The demonstration project also includes a group of 'control'
hospitals that are not stroke centers and do not have telesstroke support. It is imperative that the physician specialist be able to diagnose the patient for a stroke by observing subtle reactions in the patient’s face, limbs and speech, as well as viewing x-rays and reading routine lab tests to properly diagnose stroke and determine if the patient will benefit from the use of the tPA drug. The combination of video and audio in real time with the use of broadband technologies will allow the limited number of physician specialists to reach stroke patients regardless of their locations, and afford treatment to patients who would otherwise fall outside the narrow three hour stroke treatment window. The aims of this pilot project are innovative in that they will provide a compelling demonstration of the effectiveness of broadband-based telemedicine to overcome the time/distance barriers for stroke treatment. The model will demonstrate that it is possible to extend the delivery of robust, interactive, and real-time stroke care/treatment services to other parts of the country, even the most rural, isolated hospitals. Areas to be served: This project will target five (6) western states with significant rural populations that lack access to optimal stroke care. Specifically, we will provide telestroke services to 35 rural hospitals. The 30 hospitals (subscribers) are located in rural counties in Northern California, Nevada, Colorado, Arizona, Utah, and New Mexico. They will be connected via broadband technology to five hub hospitals located in Scottsdale (Arizona), Reno (Nevada), San Francisco (California), Salt Lake City (Utah) and Englewood (Colorado). Target demographics will include all persons (regardless of age, gender, ethnicity or socio-economic background) living within these rural and often isolated communities—all of which are served by hospitals that do not have stroke centers. Qualifications of the applicant: Established in 1984, National Stroke Association's mission is to reduce the incidence and impact of stroke. Since its inception, the organization has grown to become a leading resource for improving all aspects of stroke care in the United States. Its diverse range of programs covers the full spectrum of stroke: prevention, acute treatment, and rehabilitation and recovery. National Stroke Association prevention programs include public awareness messaging regarding the known risk factors for stroke. An example of a recent innovative prevention program teaches children about stroke via Hip Hop music. The children in turn, educate their families with interactive parent/child homework assignments. Healthcare professionals look to National Stroke Association for the latest treatment and systems of care for stroke patients by participating in our numerous medical education programs. In addition, National Stroke Association has built a network of stroke centers across the county which enables stroke center hospitals to share and learn best practices from one another. Lastly, National Stroke Association provides a wealth of information, resources and education for both rehabilitation professionals and stroke survivor family members to aid in the recovery of stroke survivors. Our project partners include the prestigious Mayo Clinic (Scottsdale, Arizona), the California Pacific Medical Center (San Francisco, California), the Renown Regional Medical Center (Reno, Nevada) the University of Utah (Salt Lake City, Utah) and the Swedish Medical Center (Englewood, Colorado). Each of these centers is a nationally-recognized stroke care center, and is currently providing telesstroke care on a limited basis within their respective states. Jobs to be saved or created: Our project does not necessitate the hiring of any FTE instructors or facilitators to provide broadband and digital literacy training purposes. Training in the proper use of the technologies utilized as part of this broadband-based telestroke care advancement initiative will be provided by existing information technology (IT) support personnel at each of the five (5) participating hub hospitals. Each of these persons is sufficiently qualified (e.g., prior work experience, certifications and/or relevant training) to provide the necessary training and has at least five (5) years' experience. These persons
monitor and facilitate the exchange of patient information on a 24/7 basis. Over the course of one year this would equal 21 FTEs. Overall cost of the proposed project: The overall cost of the project is $1,576,440. National Stroke Association is requesting $911,450 in Federal funds and will provide a cash match of $664,990 (42% of total project cost).