Without affordable, open access and technology-neutral wireless broadband systems, many hospitals, health care facilities and community colleges will remain without the full promise of 21st century online access. The Critical Links Project of the National Medical Wireless Broadband Alliance (Alliance) seeks, through this grant proposal, to install the middle mile infrastructure underlying such systems and create a comprehensive community network of 86 anchor institutions including 81 Hospitals and 5 Community College Nursing Schools in CA, AZ, NV and HI (Members). OPPORTUNITY: Like many U.S. hospitals, the Member facilities lack technology-neutral, open access wireless broadband systems that enable any wireless device within each facility to access existing wireless networks. This hampers the adoption and use of electronic health records (EHR) by health care providers within Members because they lack wireless access at the point of care. It also affects public safety workers. When in the field, public safety workers cannot directly communicate with the wireless devices of physicians in the Member Hospitals. Also, their equipment does not work inside the Member facilities. This is a broad challenge for hospitals nationwide, which require, but often lack access to, middle mile partners to provide backhaul networks and infrastructure to link to national and international backbones. Member Hospitals and Community Colleges joined together to develop the Critical Links Project proposal to address this unmet, critical broadband need. In line with the broadband access challenges that face health care providers nationwide, Members have critical gaps in the bandwidth, speed and interconnectivity of their IT systems. In the event of pandemic events, such as natural or man-made disasters, this need is heightened. Here, the Members have experienced, and will continue to experience, speed and interconnectivity issues because they lack robust, reliable wireless infrastructures. The Project will provide infrastructure for a technology-neutral, open access wireless system to each Member facility, enabling and enhancing the bandwidth and connectivity of each Member’s IT system. By installing this infrastructure, the Project will enhance the Member’s information and communication capabilities to support much-needed telemedicine services. It will foster use and development of cost-effective wireless medical applications and other health IT technologies, such as health information exchanges and EHR, which will ultimately save lives. The Project is in line with Administration objectives and advances high-priority goals of the BTOP. It furnishes Members with broadband access, equipment and support by installing essential infrastructure in their facilities. It has at least 26 interconnection points in underserved areas, improves access to and use of broadband by public safety entities and stimulates broadband demand and economic growth. In recognition of the middle mile infrastructure gaps that the Project will bridge and the statutory purposes it advances, the Project has received broad support from Member facilities, which have agreed to contribute $24,014,003 to the Project. In addition, the Alliance
has received letters in support of the Critical Links Project from the California Hospital Association, the Hospital Council of Northern & Southern California, the National Rural Health Association and 52 community leaders and policymakers at the local, state and federal levels. MEMBER HOSPITALS: The Member Hospitals span four states and, together, have more than 11,330 beds and serve approximately 6.7 million patients per year. Underscoring the multiplier effect provided by the Project, Member Hospitals serve communities with a total population over 10.5 million and over 4 million households. These hospitals serve vulnerable populations and rural communities, and include children’s, teaching, tribal and critical access hospitals. In addition, the Members serve over 100 police and fire departments with over 13,500 personnel. COMMUNITY COLLEGES: The Project also includes five community colleges that have nursing programs. SERVICE AREAS: The Project’s proposed funded service areas consist of 47 Census Block Groups and 20 Census Tracts, each of which contains at least one Member facility. Each Member facility is an interconnection point, and there are Member facilities in at least 26 underserved areas. OPEN ACCESS: The Project is committed to uphold the non-discrimination and interconnection obligations required under BTOP. As such, the technology-neutral, open wireless systems established in each Member facility will be designed to ensure health providers have the benefits of broadband innovation that open access, technology-neutral network platforms bring. BROADBAND SYSTEM: The Project provides the missing middle mile infrastructure link for the Member facilities via installation and administration of a neutral host Distributed Antenna (DA) System in each Member facility. These DA Systems will provide wireless access on users’ mobile and non-mobile devices at all frequencies between 380 MHz and 6 GHz. They will also utilize the entire range of technologies including GSM, CDMA, iDEN, WiMAX, Public Safety, WLAN and offer complete interoperability. Because the wireless infrastructure interfaces with any wireless service provider’s network, voice and data services are added to the network requiring minimal infrastructure additions. WLAN services are seamlessly integrated with voice services on the same cabling and antennas. In addition, the DA Systems provide multiple broadband links to existing outside networks through over-the-air signals utilizing microwave, cellular and WiMax point-to-point 1 Mbps to 10 Mbps broadband connections. The DA System will accommodate increasing future wireless speeds by leveraging existing wireless infrastructure because they are upgradeable to 100 Mbps and higher. SERVICES & APPLICATIONS: The Alliance will oversee installation of the DA Systems by providing logistical support, coordinating with hospital implementation teams and contracting with third parties for the components, engineering and installation of the systems. Post-installation, the Alliance will provide maintenance, monitoring and support services for the DA Systems through a dedicated Network Operations Center. QUALIFICATIONS: To implement the Project, the Alliance has brought together a highly qualified team of industry professionals, contractors and partners, whose years of experience engineering, administering and integrating health care wireless systems will ensure a timely, sustainable and scalable implementation of this proposal. The Alliance has assembled a steering committee that includes clinical physicians, health IT professionals, Member representatives, the California Hospital Association and key broadband wireless executives. INFRASTRUCTURE COST: The Project will cost $75,043,762 to implement. This amount covers infrastructure build-out, permitting and compliance costs. The cost-savings that the 86 anchor institutions will experience from implementing wireless broadband technologies are significant. Nationwide, it is estimated that health care cost savings due to implementation of broadband technologies in the U.S. will increase from almost $6.9 billion in 2005 to $27.2 billion in 2016.
SUBSCRIBERS: The Project will accelerate adoption of EHR and other wireless medical applications by enabling broadband connectivity at the point of care, enhancing cellular service for all persons in the Member facilities, and enabling network use by public safety entities. The Alliance projects that approximately 80,000 hospital and college employees, including physicians, will utilize services enabled by the DA Systems per week. It also projects that these services will be utilized by public safety entities approximately 78,500 times per year and by approximately 6.7 million patients per year. JOBS: The Project will generate significant economic and employment growth, and the Alliance forecasts 803 new jobs directly from infrastructure build-out. The Alliance already has signed contract options ready to commence upon grant award. Fifty percent of the infrastructure build-out will start within the first 120 days following the award and the Project is scheduled to be completed within 15 months. CONCLUSION: The Critical Links Project presents a scalable and sustainable opportunity to furnish 86 healthcare related anchor institutions, many of which are in underserved areas, with the middle mile infrastructure to enable high-speed wireless access. It will encourage and enable the development and use of wireless technologies and lead to improved patient care and cost savings. The program represents an approach that can be replicated nationwide to help hospitals realize the promise of 21st century online access.