



NEXT STEPS FOR THE DEPLOYMENT OF BROADBAND AND EHEALTH TO CALIFORNIA'S RURAL COMMUNITIES

Introduction

In the Journal of Medical Internet Research, eHealth was recently described as *an emerging field in the intersection of medical informatics, public health and business, referring to health services and information delivered or enhanced through the Internet and related technologies... it is a term that characterizes not only a technical development, but also a state-of-mind, a way of thinking, an attitude, and a commitment for networked, global thinking, to improve health care locally, regionally, and worldwide by using information and communication technology.*¹ This definition conveys the vast potential of eHealth applications. By encompassing all facets of health information technologies (HITs), from electronic, medical and personal health records to telemedicine and distance-learning, this burgeoning discipline has the capacity to revolutionize the practice of health care, particularly in areas where access to care is challenging.

However, to fully realize the immense potential of eHealth, a foundation of ubiquitous telecommunication and broadband infrastructure is required. Without these connections, effective delivery of eHealth is impossible. A recent publication by the Public Policy Institute of California identified significant gaps in the availability of broadband to California residents. Broadband services were found to be concentrated in coastal regions and affluent areas of California, while these services were markedly less available in rural and poorer areas of the state.² Before eHealth can be implemented in the areas of the state that need it most, these disparities must be eliminated.

In 2003, the California State Rural Health Association (CSRHA) conducted a survey of rural health care providers to assess the various barriers preventing the implementation of health information technologies in rural areas of the state. The survey results indicated that inadequate infrastructure and insufficient funding for ongoing operations were the two primary barriers preventing rural health care organizations from employing advanced information technology applications. In addition, survey respondents reported that inadequate reimbursement for telemedicine services and limited technical expertise within their organizations has hindered their ability to implement eHealth applications.³

These issues and challenges were communicated in CSRHA's first broadband policy brief, released in 2005. Since the publication of that brief there have been considerable strides toward full deployment of broadband technology in rural California. This year, many new initiatives and proposals have emerged and have the potential to expand broadband to rural communities and remote regions of the state.

The goal of this brief is to urge policymakers, as well as rural health organizations, providers and advocates to make ubiquitous broadband and telecommunication infrastructure throughout rural California a top priority, and offer policy recommendations to further that goal.

Project Background

This policy brief has been developed in partnership with the California Center for Regional Leadership (CCRL), with grant support from The California Wellness Foundation. It builds on CSRHA's initial brief "A Call to Action: Bringing Broadband and eHealth to Rural California" by recognizing new proposals and initiatives, and detailing recommendations also found in CCRL's recent publication, "2007 Rural Economic and Health Vitality Policy Agenda."

In December 2006, CSRHA brought together a diverse group of key rural health stakeholders to discuss technology, specifically the deployment of broadband throughout rural California and the adoption of technology by rural health providers. This diverse group consisted of over twenty CSRHA members from various disciplines, including technology, health, advocacy, education, research, and economic development. As a result of this meeting, the following key elements were identified as characteristics of an ideal rural technological environment:

- Broadband connectivity to and among all rural communities, including connectivity to health facilities, schools, libraries, small businesses, local governments, and residents;
- Fast, affordable, reliable and high-quality connectivity;
- A flexible, interoperable, and fully routable flat network configuration to enable rural providers to communicate with anyone, anywhere at anytime;
- Protocol-agnostic connectivity regardless of connection type (TCP/IP, ISDN, etc.);
- Technological support systems in rural communities, including trained information technology (IT) staff to maintain IT systems;
- Public access to broadband technology for all residents through libraries and other public facilities;
- Technology within rural health facilities to connect all elements of hospitals or clinics to each other, providing seamless systems of care;
- Interconnectivity between rural health facilities, urban medical centers and universities for clinical services via telemedicine, participation in clinical trials, continuing health education for medical providers, and workforce training;

- Adequate connectivity and technology to support development of all sectors of rural economies;
- Connectivity to support emergency communications; and
- Consumer-driven and consumer-centric connectivity and technology to connect patients to any and all levels of care.

By recognizing and integrating these critical elements into the technological environment of rural areas, California will maximize the effectiveness and utility of a statewide telehealth network.

The Necessity of Ubiquitous Broadband

Modern medical care increasingly requires the support of computer and telecommunications technologies. High-speed broadband connectivity allows health care providers to utilize innovative health information technologies to enable efficient and timely medical tasks and services, such as electronic medical records, electronic prescribing and telemedicine. Broadband infrastructure is the basic foundation of these services.

Many rural regions struggle against a dearth of medical facilities, health care providers and specialists. For many residents, a local safety-net clinic provides their only medical care, and a hospital or specialist may be hours away. This year, CCRL's Rural Economic Vitality Project recognized the lack of accessible health care available to rural residents, and identified "ubiquitous broadband access" as a top priority for these regions.⁴ If this ubiquity is achieved throughout rural California, it would enable the utilization of eHealth applications and allow health care organizations to provide much-needed services to rural residents. The implementation of broadband and eHealth technologies in rural areas would also help lower health care delivery costs and provide higher paying health care jobs in the community.

In addition to higher quality health care, broadband infrastructure would also have a variety of tertiary benefits for rural communities. Full deployment of broadband technology is essential to help integrate rural California's resource-based economy with the state's burgeoning information economy. Broadband capabilities allow educational services, distance-learning and consultant support be delivered to rural areas, providing new economic opportunities for these communities. Broadband technology would also support and promote other important rural industries like agriculture, tourism, and entertainment.

Current Broadband Initiatives

In 2007, new resources and opportunities have emerged that will help begin to build a statewide telehealth network. These initiatives include:

- In July 2006, Governor Arnold Schwarzenegger issued an executive order for an eHealth Initiative, which designated \$240 million toward the development of a sustainable eHealth network connecting rural health care facilities with medical centers using telemedicine and other advanced health information technologies. The goal of the initiative is to achieve a full health information exchange (HIE) within ten years.

- The California Broadband Task Force, created by an executive order from Governor Arnold Schwarzenegger in October 2006, will provide a comprehensive report, with specific recommendations, to the Governor and State Legislature by November 2007. The task force has already recommended highway right-of-way fees be waived for companies that install high-speed broadband conduits along state highways.
- The California Emerging Technology Fund (CETF) was created in 2005 "for the purpose of achieving ubiquitous access to broadband and advanced services in California, particularly in underserved communities...by 2010." Created by funds from the merger of AT&T and Verizon, CETF is a leading voice on the California Broadband Task Force. In its May 2007 Strategic Action Plan, the CETF identified "Fact Finding Meetings and Conversations" as critical steps in identifying promising projects and programs to bridge the Digital Divide and promote Digital Inclusion. Fact Finding Meetings and Conversations have been held throughout 2007, and CETF is scheduled to make its initial round of investments in January 2008.
- An Educational Facilities Bond, Proposition 1D, has designated \$200 million to the University of California for infrastructure development, in part to expand telemedicine programs throughout the state and improve health care in underserved communities.
- On behalf of the state, the University of California has submitted a Rural Health Care Pilot Program proposal to the Federal Communications Commission (FCC) to support the development of a statewide California Telehealth Network. Partners in this effort include CETF, numerous state agencies and organizations (including CSRHA), public and non-profit health care providers and stakeholders, including representatives from existing regional rural network providers.

"Telemedicine is a powerful tool that helps overcome major obstacles low-income and underserved children and families face in obtaining the health care they need."

**-Wendy Lazarus,
Founder and Co-President of The Children's Partnership⁵**

Policy Recommendations & Future Initiatives

These recent initiatives provide opportunities to improve rural Californian's access to quality health care, particularly through increased availability of broadband and telecommunication technologies. Based on discussions with its board leadership, advocacy committee members and reports from like-minded organizations, CSRHA has developed a list of recommendations to promote ubiquitous broadband access throughout rural California. These recommendations are intended to ensure that the resources and initiatives are effectively utilized and to provide a comprehensive approach for the development of the California Telehealth Network:

- Create Permanent Statewide Broadband Advisory Board: A statewide advisory board is necessary to ensure timely implementation of broadband technology throughout California.
- Incentivize Expansion of Broadband Technology: Federal and state legislation should incentivize telecom providers to expand broadband infrastructure into rural and underserved regions of California.
- Support Health Information Technology Education Programs: Develop health information programs at the undergraduate and master's degree levels, as well certificate programs and other training opportunities. Fund research to develop hardware and software applications aimed at improving patient care. Fund programs to train clinicians how to integrate health IT into their daily work.
- Encourage Participation of Rural Stakeholders: Rural communities and leaders should be encouraged to take an active role in the policy discussions and implementation of broadband technology and telecommunication, particularly as it applies to eHealth and telemedicine. Ensuring the involvement of rural stakeholders will help the timely achievement of ubiquitous broadband service throughout California.
- Improve Medi-Cal Reimbursement Rates for Telemedicine Services: California should follow the example of other states and reimburse for the associated costs of telemedicine services, such as equipment set-up and scheduling and organizing the appointment.

Acknowledgements

CSRHA recognizes the many government and non-profit organizations that are addressing rural implementation of broadband capabilities, including:

- California Center for Regional Leadership
- California Emerging Technologies Fund
- California Health Foundation and Trusts
- California Hospital Association
- California Legislative Rural Caucus
- California Primary Care Association

- California Public Utilities Commission
- California Teleconnect Fund
- California Telemedicine and eHealth Center
- Corporation for Education Network Initiatives (CENIC)
- University of California Office of the President Existing Rural Health Facilities and Health Networks
- Governor Arnold Schwarzenegger's Broadband Task Force
- Office of Statewide Health Planning Development
- Rural Economic Vitality Project
- State of California Business, Transportation and Housing Agency

This policy brief was made possible by a grant from the The California Wellness Foundation to the California for Regional Leadership (CCRL), in partnership with the California State Rural Health Association (CSRHA). CSRHA also thanks The California Endowment for their support of this project and of the organization.

This brief was prepared by Jessica Wilson of the California State Rural Health Association with valuable assistance from Dr. Earl Ferguson, MD, PhD, of Ridgecrest Regional Hospital and Peter Van Zant of Peter Van Zant Associates.

References

- ¹ Eysenbach G. "What is e-health?" *J Med Internet Res* 2001; 3(2):e20. URL: <http://www.jmir.org/2001/2/e20/>.
- ² Kolko, Jed. (2007) "Broadband for All? Gaps in California's Broadband Adoption and Availability." *Public Policy Institute of California*. 3.2: 1-24.
- ³ California State Rural Health Association. "Technology Use in Rural Health Care: California Survey Results." Survey. 23 April 2007.
- ⁴ California Center for Regional Leadership. "2007 Rural Economic and Health Vitality Policy Agenda." January 2007.
- ⁵ "Children's Advocacy Group Releases Telemedicine Report: E-Health is Transforming Health Care for Children." The Children's Partnership. Press Release. 6 September 2007.