

eHealth Broadband Adoption Program Compendium

Reflections on Improved Care



About CHT: The Center for Health & Technology is recognized for advancing innovation in technology-enabled clinical care, informatics research and health education.

About CTN: The mission of the California Telehealth Network is to promote advanced information technologies and services to improve access to high quality healthcare focusing on medically underserved and rural Californians.

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Author: Laura Hogan
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Background

California's eHealth Broadband Adoption Initiative (Initiative) was a \$13.8 million program to increase adoption of broadband-enabled eHealth technology and sustain California's Federal Communications Commission-funded broadband network. The University of California Davis, leading a partnership of funders,¹ training and education organizations² and local communities,³ implemented a number of interrelated strategies to ensure success.

- Low cost access to a statewide managed, medical grade broadband network through the California Telehealth Network (CTN);
- Online and community-based training programs focused on broadband dependent technologies for organizations, consumers, information technology and health care professionals; and,
- Model eHealth Community Project support for equipment and implementation of eHealth applications.

This report is part of a project compendium that includes a series of papers and four video presentations of Model

¹ Funding partners include National Coalition for Health Integration, The California HealthCare Foundation, United HealthCare, the University of California, the California Emerging Technology Fund and the California Teleconnect Fund.

² Training partners include California Community Colleges, California State Library, UC Division of Agriculture & Natural Resources, UC Davis Extension, California Health Information Partnership & Services Organization, UC Davis Health Informatics, The California Rural Indian Health Board, Inc., California Telehealth Resource Center and the UC Davis Center for Health & Technology.

³ Model Communities include Access El Dorado, Alameda County, California Rural Indian Health Board, Community Hospital of San Bernardino, College of the Siskiyou, Connecting to Care Modoc, Connecting to Care Sierra Nevada, Front Porch Center for Technology, LA Care, North Coast Clinics Network, Plumas District Hospital, Redwood MedNet, Southern Sierra Telehealth Network, Venice Family Clinics, UCSF/SFCCC.

eHealth Community Projects.⁴ Together, the reports compile accomplishments, challenges and lessons-learned from a review of data, grant reports, and focus group discussion and interviews with state and local community partners. The Initiative did not include a formal evaluation or research. This essay offers reflections on how support for infrastructure and collaborative partnerships, offered through the eHealth Broadband Adoption Initiative, contribute to improvements in health care. Companion papers include an Initiative Overview, Model eHealth Community Lessons and Challenges and an Inventory Description of Model eHealth Communities.

The United States has the most costly health care system in the world, expected to grow to 20% of the gross national product by 2020.⁵ Simultaneously, health outcomes for Americans rank toward the bottom of other similar economies. As summarized by a report from the Commonwealth Fund, *Among the six nations studied—Australia, Canada, Germany, New Zealand, the United Kingdom, and the United States—the U.S. ranks last, as it did in the 2006 and 2004 editions of Mirror, Mirror. Most troubling, the U.S. fails to achieve better health outcomes than the other countries, and as shown in the earlier editions, the U.S. is last on dimensions of access, patient safety, efficiency, and equity.*⁶ There is a compelling need to identify and scale up promising solutions to these challenges.

Recently, with the passage of the Affordable Care Act, new incentives and heightened attention to addressing the systemic failings of the health system are underway. The Institute for Healthcare Improvement (www.ihl.org) developed an approach to improving the US health care system that is becoming widely adopted as the “triple aim”⁷ framework. The triple aim is:

- Improvements in patient experience of care, including quality and satisfaction;
- Improvements in the health of populations; and
- Reductions in the per capita cost of health care.

The triple aim framework for a redesigned health care system offers a vision to achieve better value and better health, yet the realization of overall, measureable improvement remains elusive. A significant and ongoing challenge to improvements is the lack of technological infrastructure and the practice changes that accompany it. Secure electronic health records, exchange of health information, e-prescribing and telehealth services are examples of eHealth applications that must be widely operational to achieve a transformed health system and all rely on the availability of stable connectivity and widespread provider adoption of eHealth.

⁴eHealth Broadband Adoption Program Initiative Overview, Model eHealth Communities Lessons Learned, Model eHealth Communities Inventory, eHealth Broadband Adoption Initiative and Improved Care. Videos of Alameda Juvenile Justice, Front Porch, Connecting to Care and ACCEL are available at : www.ucdmc.ucdavis.edu/cht/initiatives/eHealthTraining.html

⁵ National Healthcare Expenditure Projections, 2010-2020. Centers for Medicare and Medicaid Services, Office of the Actuary

⁶*The Commonwealth Fund; “Mirror, Mirror on the Wall: An International Update on the Comparative Performance of American Health Care” May 15, 2007 | Volume 59, authors: Karen Davis, Ph.D., Cathy Schoen, M.S., Stephen C. Schoenbaum, M.D., M.P.H., Michelle M. Doty, Ph.D., M.P.H., Alyssa L. Holmgren, M.P.A., Jennifer L. Kriss, and Katherine K. Shea*

⁷ The IHI Triple Aim is a framework developed by the Institute for Healthcare Improvement that describes an approach to optimizing health system performance. It is IHI’s belief that new designs must be developed to simultaneously accomplish three critical objectives, which we call the “Triple Aim:” improve the health of the population; enhance the patient experience of care (including quality, access, and reliability); and reduce, or at least control, the per capita cost of care.

Contributions of the eHealth Broadband Adoption Initiative to Improved Infrastructure

Much of California, especially its safety net systems and rural communities, have lacked low cost access to broadband-enabled eHealth applications. The \$14 million eHealth Broadband Adoption Initiative, which targeted underserved communities and providers, offered an important step forward in addressing these infrastructure challenges. Access to stable, medical grade broadband through the California Telehealth Network, together with equipment distribution, training and technical assistance made basic infrastructure available and supported its adoption. This support was a foundational step to improvement efforts.

Equally significant, local funding through the Initiative to 15 Model Communities to launch eHealth projects and services enabled and accelerated their progress. Initiative partners in Model Communities report implementation lessons-learned and improvements to access, quality, consumer and provider experience that underscore the necessity and success of the initiative's multi-faceted resources.

Model eHealth Communities Report Improved Access, Quality, Consumer Experience

Fifteen Model eHealth Communities were chosen for funding based on readiness, need, and capacity for success. Dispersed throughout California, the Model eHealth Communities included 70 organizations and 100 sites in 26 counties. Funded projects included urban projects expanding access to specialty care, rural projects to increase access to care in remote areas and special population projects to address unique needs among underserved populations.

Model communities and their partners implemented more than 25 clinical services using new connectivity and equipment that will continue to foster improvements in timely access to care. Telehealth visits totaled almost 40,000 over the two year period. In addition, digital exchange of health information and e-prescribing totaled almost 100,000 encounters. Compelling stories of increased consumer confidence in care, reduced time and expense to travel out of the community for care and increased satisfaction with their overall care bear witness to the immediate improvement in the overall system of care.

In a remote region, broadband connectivity allowed a rural site to implement high resolution, level two ultrasound capability that allows high risk perinatal patients to deliver safely in their local community. Tele-behavioral health makes ongoing care a practical reality in remote regions and staff report reduced reliance on psychotropic medications with regular access to tele-behavioral health services. Another community implemented remote patient monitoring in senior housing facilities for low income, non-English speaking and sign language residents. From tele-ICU to video interpretation, Model Communities have implemented eHealth applications resulting in improved access, quality and consumer experience.

Quality improvements also result from provider's access to consultation and education. Two communities implemented strategies adapted from the Project ECHO model, developed by the University of New Mexico, in which academic medical centers share specialized knowledge with local clinicians to expand their capacity to treat chronic conditions. In addition, a Model Community in Los

Angeles implemented a web-based eConsult Safety Net Program allowing 1,300 primary care physicians in 108 clinics to access specialty consults from 14 specialty care areas. Prior to eConsult, patients might wait 15 months for a dermatology consult. With eConsult, there was an answer and result in 4-5 days and 60% could be treated in the primary care practice without seeing a specialist. Technology also facilitated remote participation in tumor boards, Grand Rounds and continuing education that contribute to quality of care improvements.

An innovative partnership between Children's Hospital Oakland and Alameda County improved access and quality for incarcerated juveniles.⁸ Broadband-enabled telehealth removes the need for correctional officers to leave the facility for extended visits to specialty providers. EHealth also shortened the stay of some juvenile offenders because, prior to telehealth services, unresolved health conditions caused delays for youth to be moved to group homes. Such timely access to care is saving public resources as well as improving care.

Structures and Systems

California's eHealth Broadband Adoption Initiative was an important contribution to expanded access, increased quality and improved consumer experience in local communities. Important factors in this success were the Initiative structure itself, the organized availability and delivery of connectivity, and the strategic development of technical assistance resources for individual providers, especially safety net providers who were not part of integrated health care systems.

Low cost, secure broadband access is a must and is now widely available in remote provider settings through the CTN. As important as the availability of low cost connectivity is, however, interviewees for this compendium noted, "Equipment and connectivity are not enough to get telehealth going." Communities needed to plan and work through implementation hurdles – often across multiple health care systems – and this relied on local collaboration that was required and funded through the Initiative. In addition, expertise and technical assistance organized at the state level were crucial elements of their success. Ongoing access to technical assistance, services and products is essential as well, yet the sustainability of the CTN and the financing to maintain and expand the menu of services required by local communities remains a challenge.

Conclusion

The Triple Aim is an important vision for a re-designed health care system that cannot be realized without significant investments in technology infrastructure. The necessity and contribution of broadband-enabled eHealth as a core component upon which to build a redesigned health care system must be acknowledged through investment in organized networks such as the CTN and support for local communities to address barriers to its widespread use. The Initiative provides a model for how these important contributions can accelerate progress and leave a legacy of new services and resourceful local champions working to expand and spread eHealth in their communities. New and ongoing investment to expand eHealth, especially for underserved communities and safety net providers, requires resources for the structures and systems that local providers rely on for success.

In 2004-05, the California Department of Corrections and Rehabilitation provided 9,100 telehealth consultations for inmates, saving taxpayers roughly \$4 million in transportation and security costs, *"Telemedicine in California: Progress, Challenges, and Opportunities."* California HealthCare Foundation, 2008.