

Accessing the Cutting Edge: Implementing Technology to Transform Quality in Southeast Kern County

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Organization:	Tehachapi Hospital
Mechanism:	RFA: HS05-013: Limited Competition for AHRQ Transforming Healthcare Quality Through Information Technology (THQIT)
Grant Number:	UC1 HS 016146
Project Period:	September 2005 – May 2009, Including No-Cost Extension
AHRQ Funding Amount:	\$1,484,361
Summary Status as of:	May 2009, Conclusion of Grant

Target Population: Adults, Diabetes, Medically Underserved, Rural Health*

Summary: The project seeks to increase health quality in California's rural Southeast Kern County by implementing health information technology including electronic health records (EHRs), personal health records (PHRs), health information exchange (HIE), and tele-ophthalmology services.

The project established an administrative and governance infrastructure, the East Kern County Information Technology Association (EKCITA), to guide and sustain development of the HIE, PHR, and tele-ophthalmology services. EHRs were implemented in three rural health centers (RHCs) and two provider offices, enabling these practices to electronically collect patient data and make them available via the HIE. A Web-based PHR system (MyHealthKeeper) was implemented as a diabetes self-management tool. A tele-ophthalmology service was implemented between the EKCITA and an ophthalmologist in Bakersfield, California, to address the needs of patients with diabetes and to screen for and manage patients with macular degeneration. The project was evaluated with a mixed-methods approach that used quantitative data from the HIE, tele-ophthalmology, and PHR systems and qualitative interviews with key informants.

All health care organizations and providers in Tehachapi agreed to participate in the HIE. Three rural health clinics, two private practices, and the region's hospital are exchanging data through the EKCITA HIE. Three primary care practices have Web links to EKCITA but read-only access to the system because they do not have EHR capabilities. Two other primary care practices with EHR systems will be connected to the system post-project when interfaces between their EHR systems and the HIE can be built.

Specific Aims:

- Build an infrastructure with a shared clinical data repository that will be used throughout the region, linking outpatient, inpatient, telemedicine, and other modalities. **(Achieved)**
- Develop a local workforce that is educated in using technology to enhance knowledge and quality of care and in retrieving patient data. **(Achieved)**
- Develop a prototype for using technology in a rural setting to enhance care of patients with chronic disease, initially focusing on diabetes mellitus and heart disease. **(Achieved)**

2009 Activities: Project staff focused on completing final evaluation, analysis, and dissemination of the project and its findings, while continuing to support implementation at practices and the maintenance

of the HIE during 2009. Quantitative data from the HIE, tele-ophthalmology, and PHR systems were analyzed for content and utilization. Interviews were conducted with eight key informants representing providers, administrators, and other stakeholders about system development and governance, clinician use and satisfaction with the system, barriers and facilitators to development and use, and future plans. Financial analysis of the project development, implementation, and management (excluding matching funds) was completed. Abbreviated financial estimates were made of projected costs for sustaining staffing, vendor support, administration, system registration, training, and system marketing.

Grantee's Most Recent Self-Reported Quarterly Status (as of May 2009): The project term ended with all major aims achieved.

Impact and Findings: EKCITA was established as a freestanding 501(c)(3) organization in the State of California. As of August 2009, the EKCITA HIE contained a significant amount of patient data, including encounter data for 59,711 patient visits, 4,532 radiology reports, and 1,318,747 laboratory observations. It contained data for 47,688 unduplicated patient identities: 42,337 that originated from the Tehachapi Valley Healthcare District (TVHD) hospital data systems, 2,191 from the TVHD RHCs, and 436 and 2,724 from the two community-based family physician partners. Despite the large amount of data in the system, utilization has been light to date. A total of 26 patients have given active consent for their data to be viewed through the HIE. Five providers have viewed a total of 55 patient records through the system. The average number of patient records accessed per user is three. The low utilization rate could be related to the requirement that patients give active consent before their data can be viewed, possible barriers created by the lack of integration of practice EHR systems with the HIE, or the need for providers to navigate out of their EHR screen to view the HIE system, thus interrupting the provider's workflow. While utilization was low, providers and administrators interviewed about the HIE were all enthusiastic about the potential of the HIE to improve care for patients in Tehachapi.

Twenty-six clinicians in the Tehachapi service area referred patients for tele-ophthalmology consults. The average number of referrals per clinician was 6.3 with a range of 1 to 54. Ten clinicians made a total of five or more referrals through the service. Two significant barriers were encountered in implementing a sustainable tele-ophthalmology solution for the region. The main barrier is the inability of specialists to bill for services directly unless they owned the equipment. The other barrier is the location of the equipment: it was originally located at the hospital, but community-based providers were uncomfortable referring their patients to the hospital to have ophthalmology images taken.

More detail on the project findings is included in Dr. Nocella's final report: [Nocella 2009 Final Report](#).

Strategic Goal: To develop and disseminate health IT evidence and evidence-based tools to improve health care decisionmaking through the use of integrated data and knowledge management.

Business Goal: Implementation and Use

* *AHRQ Priority Population*