

## Critical Access Hospital Partnership Health Information Technology Implementation

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<b>Organization:</b>	Upper Peninsula Health Care Network
<b>Mechanism:</b>	RFA: HS05-013: Limited Competition for AHRQ Transforming Healthcare Quality through Information Technology (THQIT)
<b>Grant Number:</b>	UC1 HS 016152
<b>Project Period:</b>	September 2005 – September 2009, Including No-Cost Extension
<b>AHRQ Funding Amount:</b>	\$1,484,167
<b>Summary Status as of:</b>	September 2009, Conclusion of Grant

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**Target Population:** Rural Health\*, Medically Underserved

**Summary:** The Upper Peninsula Region of Michigan contains almost one-third of the land area of Michigan but just three percent of its population. Due to the geography and demographics of the region, access to advanced health care services is difficult. Nearly all of the region's 15 counties have full or partial health provider shortage area (HPSA) designation and full dental HPSA designation, and several are designated as medically underserved.

This project designed and deployed a secure health information exchange (HIE) system to enable the communication of patient data among 10 critical access hospitals (CAHs) in Michigan's Upper Peninsula and physicians at Marquette General Hospital, the region's only medical center. The Critical Access Hospital Partnership Health Information Technology Implementation project created a Web-based portal and repository application that allows selected clinical information to be accessed by authorized physicians and other health care providers to enhance patient care delivery and quality reporting. The network seeks to improve patient safety and quality of care through the regional planning, development, and implementation of health information technologies (IT).

The HIE is designed to improve patient safety and efficiency by: reducing duplicate tests or other exams when patients are transferred from one provider to another; improving inpatient transfers between the CAHs and Marquette General; allowing clinicians to identify which medications a patient is taking when he or she is transferred between emergency departments; and eliminating the need for a courier to transport laboratory test results, medical records, x-rays, and other important patient data between hospitals.

### Specific Aims:

- Monitor health IT installations at the project's partner hospitals in Michigan. **(Achieved)**
- Plan, test, and integrate local health IT to the regional HIE. **(Achieved)**
- Implement regional HIE systems, central data repository, and services. **(Achieved)**
- Evaluate the success of the overall project implementation. **(Achieved)**
- Evaluate the impact of technology-supported patient data exchanges and reporting on patient care. **(Not Achieved)**

**2009 Activities:** Because the original developer was unable to expand the Marquette HIE system (UP-Care) to include other electronic health record (EHR) systems during the first 3 years of the project, the project team designed and implemented a replacement solution in collaboration with the Michigan Technical University (MTU). The bulk of activities in 2009 involved testing four pilot site servers at MTU with the new HIE architecture. Post-grant ending, there was critical staff turnover and the data exchanges were never fully implemented. Therefore, the final evaluation aim was not completed.

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**Grantee's Most Recent Self-Reported Quarterly Status (as of September 2009):** Although the HIE system successfully operates among the four pilot site servers at MTU, there was insufficient time to deploy the HIE servers to the pilot sites and to test the system using actual patient identifiers and clinical data. The project was therefore unable to compare pre-installation user survey data with post-installation surveys as required to assess the impacts of the HIE solution at the local level.

**Impact and Findings:** During the 4-year implementation phase of the project, the scope of the project was expanded to include 13 of the 14 hospitals in the Upper Peninsula Health Care Network. Eleven of these rural community hospitals acquired and installed EHR systems within their facilities. This greatly enhanced the network's capacity to create the necessary electronic patient records to be shared between providers in the HIE.

The creation of interfaces between the central HIE and each of the four separate EHR vendor systems was a significant challenge for the project. Each site tested different clinical software, which made compatibility difficult. Several hospitals needed to upgrade their EHRs to transmit data with the HIE to achieve connection.

Lack of data reporting consistency among hospitals was also an issue. To overcome these data compatibility issues, project leaders established a standards committee with broad representation from the participating organizations. The group selected standards such as Health Level Seven International, Logical Observation Identifiers Names and Codes, and Systematized Nomenclature of Medicine for transmitting information. Recent work at the national level should greatly reduce this barrier in the future.

Project leaders had to contend with physicians' reluctance to change the way they report data to the HIE. To address this issue, project leaders provided technical training and continuing education for physicians. Project staff also surveyed doctors thought to be the most reluctant to embrace the project. The survey gauged their potential concerns and fears about the project. Staff then worked with these doctors to address their concerns and help them become comfortable with the software.

Although the network has yet to become fully operational and has not achieved all its original objectives, the practices used in the planning, preparation, modification, and implementation of this project were effective and should prove to be applicable, helpful, and relevant to other rural areas seeking to develop a regional HIE.

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

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**Strategic Goal:** 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

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\* *AHRQ Priority Population*