

Holomua Project: Improving Transitional Care in Hawai'i

Principal Investigator:	Sakuda, Christine, M.B.A.
Organization:	Hawaii Primary Care Association
Mechanism:	RFA: HS05-013: Limited Competition for AHRQ Transforming Healthcare Quality Through Information Technology (THQIT)
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AHRQ Funding Amount:	\$1,476,200
Summary Status as of:	September 2009, Conclusion of Grant

Target Population: Racial and Ethnic Minorities*: African American, Chinese, Filipino, Samoan; Rural Health*

Summary: Health care is becoming a shared, community-based responsibility with diverse care providers offering services to a common population of patients. Community health centers (CHCs) serve a vulnerable patient population who are at high risk during their transition between health care facilities.

The Holomua Project brought together the Hawaii Primary Care Association (HPCA), the Kalihi-Palama Health Center, Kokua Kalihi Valley Health Center, Hawaii Pacific Health, and the Queens Medical Center to share information during transitional care. The project implemented both technical and non-technical solutions to the problem of information loss during care transitions. The technical solution was the implementation of a health information exchange (HIE), known as the Holomua Master Visit Registry (HMVR) with vendor Sun Microsystems to share health information from pre-existing electronic health records between systems. The non-technical solutions chart workflow during transitional care, develop and implement policies and procedures for transitional care, and use dialogue and communication to facilitate transitional care. The technical method is a scalable, interoperable solution that takes into account the disparate resources of the partner organizations. The non-technical methods are based on abundant research on the need to attend to human factors to ensure the success of technology-based implementation efforts. The dual (technology-based and non-technology-based) approach helped the Holomua partners achieve the ultimate project goal of increased patient safety, quality, and continuity of care during transitional care for vulnerable populations in Hawaii.

Project evaluation focused on increasing accuracy and timeliness of shared patient information during transitional care between CHCs and tertiary care hospitals and increasing patient or family participation in health care related decisionmaking. Several types of data were collected to determine the impact of the HMVR on patient's coordination of care between the CHCs and the tertiary care hospitals (e.g., HMVR usage, end-user satisfaction surveys, and audit logs). Focus groups were held among health care provider groups, high-risk patient groups, and community members to assess perceptions of health information technology (IT).

The HIE network was implemented connecting three facilities, with data from approximately 150 clinician users, 250,000 patients, and 500,000 visits. The project enhances relationships between participating CHCs and tertiary care hospitals through active collaboration and participation of key stakeholders. It increases awareness of the health IT infrastructure, the need for data standardization to provide continuity

during care transitions, the need for common transitional care policies and procedures, and once developed, the need for all clinical colleagues to adopt these policies and procedures.

Specific Aims:

- Complete privacy and security contract documents needed for HIE. **(Achieved)**
- Complete production, implementation, and support phases of HIE, known as HMVR. **(Achieved)**
- Increase accuracy and timeliness of shared patient information during transitional care between primary care and tertiary care hospitals. **(Achieved)**
- Increase participation and involvement in decisionmaking by patients or family on health-related matters. **(Achieved)**
- Determine mechanisms by which information resources, information systems, and other IT initiatives and/or networks in Hawaii can best support both short- and long-term implementation activities of the Holomua Project. **(Achieved)**
- Begin use of HMVR. **(Achieved)**

2009 Activities: During 2009, meetings were held with Hawaii State Department of Health (DOH) staff and Hawaii Health Information Exchange (HHIE) board members to discuss the Hawaii Health Emergency Surveillance System and how the Holomua team and DOH can work together. A June 2009 meeting at the HPCA presented the HMVR to the DOH. The HHIE is expected to play a greater role with the HMVR through the development of a statewide regional health information organization (RHIO). HHIE members performed an extensive technical audit of the HMVR and are very active in supporting the next phase of the HMVR.

Phase 2 of the HMVR includes the development of a statewide master patient index, and the inclusion of type-of-lab information from Diagnostic Lab Services and Clinical Labs Hawaii and type-of-enabling services from the CHCs. The HHIE is seeking funding to accomplish these tasks and will apply for 501(c)3 non-profit status. Progress is being made with HHIE colleagues as the HHIE is sanctioned by the Governor as the State HIE organization for Hawaii.

Grantee's Most Recent Self-Reported Quarterly Status (as of September 2009): This grant has closed, with all major aims achieved.

Impact and Findings: The HMVR is intentionally designed to be scalable and support adaptations to a larger HIE that may include a master physician index, clinical laboratory results, other laboratory results, problem lists, medication reconciliation lists, and allergy information. This information has been identified by physicians as being very valuable in their decisionmaking.

All the partner institutions agreed on a common dataset for HIE and they determined the minimal matching algorithm accepted by all sites. Four data extracts were completed from all three health care systems during the development and testing phase of the HMVR with successful integration and acceptance results. HL7 interfaces were deemed stable and daily batch file updates were scheduled and tested. Successful interoperability with the HMVR occurred with the hospitals providing HL7 feeds and the CHC providing batch feeds.

Each institution has its own perceptions, agenda, and ideas of how to improve transitional care of shared patients during the hand-off process. Some focused on nontechnical solutions and may not be prepared to cover the costs of technical solutions, while others focused on and were prepared to cover the costs (including liability insurance) of more technical solutions. The relationships built with the CHC and tertiary care hospitals

providers are invaluable for developing ongoing communication and support for this project and, by extension, other health IT projects such as the HHIE.

The current perception of the Holomua Project is that it yields limited data, mostly demographic in nature, and offers only one piece of clinical information, the ICD-9 code field (including text of the diagnosis). However, with more education, awareness, and discussion, most users, and certainly the executive committee members, understand that the Holomua Project is merely the beginning of a bigger plan to create a RHIO. While establishing a RHIO remains the long-term goal, the Holomua Project is focused on immediate needs, namely, a record locator database with a master patient index.

The Holomua Project continues to work to improve the quality of health care for the vulnerable populations that are shared among the CHCs and tertiary care hospitals of Hawaii. Continual motivation and consistent buy-in from all partner institutions' executive committee members are very important for the continuing success of the project. Furthermore, there is a need for continual efforts to maintain the buy-in from others, including end-users (particularly physicians), institutional IT staff, and privacy and security members.

The need to understand the collaborative dynamics of the participants in transitional care settings is a key finding of the project. Disparate and, at some level, competing community participants can unify to produce a shared product, the HMVR. Strong partnerships, open communication, and enabling tools can be built among committed health care providers to overcome existing technical challenges and improve transitional care processes for shared patients. Collaborative efforts continue to improve the quality of transitional care during the patient hand-off process.

The HMVR is the “technical” solution to improving continuity of care for shared transitional patients. The Transitional Care Guidelines are the “non-technical” solution. Implementation of this non-technical solution appears to improve dialogue and communication among providers at the CHCs and tertiary care hospitals. Some members of the Healthcare Professionals workgroup have stated there has been “great improvement” and “dramatic changes” in the way that providers communicate with one another.

The project recognizes that IT is only one tool and, therefore, also relies on non-technological solutions to advance improvements in transitional care. This work involves identifying challenges, improving workflow policies and procedures, and using dialogue and communication to facilitate effective transitional care.

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

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

* *AHRQ Priority Population*