

A Partnership for Clinician Electronic Health Record Use and Quality of Care

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Organization:	Michigan Public Health Institute
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Target Population: Chronic Care*, Medically Underserved

Summary: Despite the emphasis on health information technology (IT) in ambulatory care, current use of electronic health records (EHRs) in ambulatory settings remains low. After a health center makes a monetary investment in an EHR, there remain significant barriers to full and effective use of the system, including redesigning workflow to incorporate use of the EHR before, during, and after a patient visit. It is especially important for clinical decision support (CDS) systems that these barriers be overcome. If information is not available at the point of care and decisionmaking, health IT cannot impact quality and outcomes of care. Therefore, it is important to identify and disseminate strategies to overcome barriers to full EHR use, and strengthen the link between technology adoption and improved quality of patient care.

The Institute for Nursing Centers and the Alliance of Chicago Community Health Services' (Alliance) project studies the effectiveness of a partnership that shares resources and utilizes a data-driven approach to promote full clinician use of an EHR. Three nurse-managed health centers and three community health centers are participating to improve the quality of care in areas of preventive care, chronic disease management, and medication management for vulnerable populations. These partners have a record of highly productive research, successful EHR implementation, commitment to data-supported high quality health care for vulnerable populations, and a history of building and maintaining strong collaborations.

The goals of this project address one of the key problems in leveraging health IT to support high-quality patient care: despite the potential, CDS is often not used effectively or consistently by clinicians. The design of this project incorporates qualitative investigations and quantitative analyses at both the individual- and the center-level. The critical link between full use of EHR functionality, including CDS features, and clinical performance and quality outcomes will be examined with rigorous statistical methods. The product is the integrated General Electric (GE) Centricity Practice Management EHR System and is Certification Commission for Health Information Technology-certified with substantial customization of CDS in templates developed by the Alliance. The quality indicators selected are those that the Institute of Medicine has identified as priority areas for improvement and where significant disparities across racial, ethnic, and income groups exist. Qualitative methodology will add to the field's understanding of health center leadership and change management required for successful use of EHR.

Specific Aims:

- Study the effectiveness of a partnership that shares resources and uses a data-driven approach to promote full use of an EHR by clinicians in settings that serve vulnerable populations to improve the quality of care in the areas of preventive care, chronic disease management, and medication management. **(Ongoing)**
- Test the links between clinician use of an EHR and quality of preventive care, chronic disease management, and medication safety. **(Ongoing)**
- Examine organizational processes in the implementation and full use of an EHR in relationship to care delivery and outcomes. **(Ongoing)**

2010 Activities: Data collection was the main focus of 2010. EHR usage data with a one-quarter and a one-year look-back period has been collected for the Alliance sites, Campus Health Center (Detroit, MI), and Glide Health Services (San Francisco, CA). Productivity data continues to be queried on a quarterly basis at the Alliance sites, Campus Health Center, Glide Health Services, and Arizona State University (ASU)'s NP Healthcare clinics, Downtown and Scottsdale. Qualitative (interview) data collection is complete for Alliance sites, Campus Health Center, Glide Health Services, and ASU's NP Healthcare-Downtown site. ASU's NP Healthcare-Scottsdale site had completed baseline and during-implementation interviews.

Computer literacy data collection is complete at all sites. Clinician satisfaction data collection is complete for Alliance sites, Campus Health Center, Glide Health Services, and ASU NP Healthcare-Downtown. The ASU NP Healthcare-Scottsdale site completed the during-implementation survey for its new NP in November 2010. The post survey will be collected from this NP in February 2011. Patient satisfaction surveys have been collected at ASU NP Healthcare-Downtown, Detroit Campus Health Center, NP Healthcare-Scottsdale, and Glide Health Services at both the pre- and post-implementation time points. Physician Practice Patient Safety Assessment data collection is complete for all sites. Medication Safety data have been collected from Campus Health Center and Glide Health Services during preload, and were being collected from the two ASU sites as they enter historical medications for existing patients.

Clinical performance and outcome measures have been collected at one year post-go-live for Glide Health Services, and data have been collected from the Alliance centers at roughly three years post-implementation. Data collection for one year post-go-live at Campus Health Center is in progress. A full set of quality measures will be collected at the ASU NP Healthcare sites once they have been live on the EHR for one full year. Since Campus Health Center, Glide Health Services, and the Alliance sites will have been live on the EHR for over two years before the end of the study, the team will be able to obtain performance data at a second time point for each of these sites.

Grantee's Most Recent Self-Reported Quarterly Status (As of December 2010): Project progress is mostly on track and project spending is roughly on target. Efforts during the no-cost extension focus on data collection, analysis, and development of manuscripts to publish project results.

Preliminary Impact and Findings: The mean score for perceived effect of an EHR on clinical practice at the nurse-managed center sites (evaluated 8–13 months post-go-live) was 2.95 on a scale of 1–5, and the CHCs' (evaluated 19–23 months post-go-live) mean score was 3.48. There could be an effect of time yielding more recognition of the beneficial effects as providers gain EHR experience and competence.

Variation in end-user satisfaction and use is highly contextual: the implementation at the center with the lowest satisfaction was hampered by problems with connectivity and lack of lab interface. Nurse-managed health center sites face additional EHR implementation challenges that may affect end-user satisfaction, including high numbers of part-time providers and financial instability. A challenge in the measurement of use of CDS is that providers have multiple ways to document and receive support (e.g., multiple forms/templates). Use of chronic disease and preventive care templates is relatively low, which requires additional investigation. Variation of CDS use around specific chronic disease forms appears to be related to the predominant type of patients in the health center.

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*