

Enhancing Complex Care Through an Integrated Care Coordination Information System

Principal Investigator:	Dorr, David, M.D., M.S.
Organization:	Oregon Health and Science University
Mechanism:	RFA: HS08-002: Ambulatory Safety and Quality Program: Improving Management of Individuals with Complex Healthcare Needs through Health Information Technology (MCP)
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Summary: Patients with chronic illnesses are at risk for complications due to a lack of coordination and quality in a fragmented health care system. This project is investigating whether care for patients with complex needs can be improved by implementing an integrated care coordination information system (ICCIS) developed by the Oregon Health and Science University. ICCIS incorporates population management techniques, patient-centered goals, quality measures, and clinical reminders to support clinical care teams and patient self-management. The three study objectives are to: 1) understand whether ICCIS can be implemented among diverse clinics using certified electronic health records (EHRs) and existing standards; 2) assess whether the functions in the ICCIS can be used by the clinics; and 3) evaluate whether these system changes lead to improved patient outcomes.

Using a randomized, controlled trial, Dr. Dorr and his team are examining whether six participating clinics (three inner-city, three rural) can use health information technology (IT) to monitor and deliver care for high-risk patients with a care coordination model (Arm 1), or quality performance model (Arm 2). The team is evaluating how well care coordination functions are used at the clinics. Measures include indicators of patient engagement, clinic-level quality of care, clinic-level process, and patient health outcomes.

Specific Aims:

- Implement the Care Management Plus and ICCIS models. **(Achieved)**
- Perform a cluster randomized, controlled trial in six clinics on the ability to use the IT functions to monitor and deliver care to high-risk patients through a care coordination (Arm 1) or a quality performance model (Arm 2). **(Ongoing)**
- Assess the implementation. **(Ongoing)**
- Understand and disseminate the outcome, benefits, challenges, and unintended consequences from use of these functions for patients and the system. **(Ongoing)**

2011 Activities: Developing the second version of ICCIS was the project team's major focus in 2011. The following system refinements were implemented in ICCIS Version Two: 1) passwords were synched across several systems to simplify password management; 2) patients without a clinic visit in 3 years are now automatically inactivated to improve the accuracy of reporting; 3) the rule base that generates appointments with care managers was modified to allow care managers enhanced flexibility for task

coordination; and 4) software was modified to allow ICCIS to better integrate with information systems in other clinics. From the end-user perspective, Version Two of ICCIS increased the speed of loading quality measure reports from approximately 90 to 10 seconds. As a result, clinician work flow improved, and the reports are easier to use on a regular basis or on an as needed basis. The changes also improved the usability of the interface and integration of data sources, which minimizes double entry between the EHR and ICCIS.

The collection of patient-level data from ICCIS continued in 2011. A post-study survey and an interview guide were developed and tested. The survey was administered in-person to clinicians and office managers at each of the six sites. Followup interviews with the same clinic staff are nearly complete. The surveys and interviews will be analyzed to quantitatively and qualitatively assess issues such as the aspects of care management that were most useful, awareness of reimbursement related to care management, and level of user-friendliness of the system design.

The project is using a 1-year no-cost extension to complete the project. As last self-reported in the AHRQ Research Reporting System, project progress and activities are on track and project budget spending is on target.

Preliminary Impact and Findings: Of the 65,615 patients followed by the six clinics, 13,852 were seen twice during the study period and were therefore eligible for the study. Among eligible patients, 51 percent were over the age of 50, and 15 percent were preselected as having a high risk of hospitalization. Baseline characteristics of the high-risk group did not vary across clinics. Of those eligible, 2,087 were enrolled and actively followed by care managers. In the care coordination arm, clinics received reimbursement for completing care management activities. For this arm, the number of completed care management activities was three times higher than for the quality improvement arm. In the quality improvement arm, clinics received reimbursement for meeting quality measure benchmarks. Overall, this arm demonstrated a doubling of achieved quality measures and achieved more consecutive improvements than the care coordination arm. Of the two study arms, fee-for-service care coordination reimbursement was more effective. Results, as available, will be stored on the project Web site: www.caremanagementplus.org.

Dr. Dorr reports that end-user feedback was very positive and that five of the six clinics will continue to use ICCIS beyond the end of the project. Additionally, the project has generated a lot of interest from other clinics, many of which have approached Dr. Dorr to express their interest in using ICCIS.

Target Population: Adults, Chronic Care*

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

* This target population is one of AHRQ's priority populations.