

## Enhancing Complex Care Through an Integrated Care Coordination Information System

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<b>Organization:</b>	Oregon Health and Science University
<b>Mechanism:</b>	RFA: HS08-002: Ambulatory Safety and Quality Program: Improving Management of Individuals With Complex Healthcare Needs Through Health Information Technology (MCP)
<b>Grant Number:</b>	R18 HS 017832
<b>Project Period:</b>	September 2008 – September 2012
<b>AHRQ Funding Amount:</b>	\$1,155,147

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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 investigated whether care for patients with complex needs can be improved by implementing an integrated care coordination information system (ICCIS) and Care Management Plus developed by the Oregon Health and Science University. The 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 were 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 examined whether six participating clinics (three inner-city, three rural) were able to 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 evaluated how well care coordination functions were used at the clinics. Measures included indicators of patient engagement, clinic-level quality of care, clinic-level process, and patient health outcomes. 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. The surveys and interviews were 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.

### 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). **(Achieved)**
- Assess the implementation. **(Achieved)**
- Understand and disseminate the outcomes, benefits, challenges, and unintended consequences from use of these functions for patients and the system. **(Achieved)**

**2012 Activities:** The focus of 2012 was analysis of the study data. The project used a 1-year no-cost extension to complete the project. As last self-reported in the AHRQ Research Reporting System, project progress was on track and budget spending was on target. This project ended in September 2012.

**Impact and Findings:** Of the 87,710 patients followed by the six clinics, 26,395 were seen twice during the study period and were therefore eligible for the study. Among eligible patients, 31 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, 3,075 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 1.8 times higher than for the quality improvement arm. In the quality improvement arm, quality measures improved by 14.2 percent as compared to 8.9 percent in the care coordination arm. Overall, the quality improvement arm achieved more consecutive improvements than the care coordination arm. Of the two study arms, fee-for-service care coordination reimbursement was more effective. Results may be found on the project Web site: [www.caremanagementplus.org](http://www.caremanagementplus.org) as they become available.

Dr. Dorr reports that end-user feedback was very positive and that five of the six clinics will use the ICCIS beyond the end of the project. The large clinics demonstrated the most dramatic, broad-based changes, while some of the smaller clinics found it difficult to have one staff member fully dedicated to the care management role. 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 the ICCIS.

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**Target Population:** Adults, Chronic Care\*, Elderly\*

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