

## HIE and Ambulatory Test Utilization

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<b>Mechanism:</b>	PAR: HS08-269: Exploratory and Developmental Grant to Improve Health Care Quality through Health Information Technology (IT) (R21)
<b>Grant Number:</b>	R21 HS 018749
<b>Project Period:</b>	May 2010 - April 2012
<b>AHRQ Funding Amount:</b>	\$299,916

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**Summary:** One of the purported benefits of health information exchange (HIE) is that it can improve the efficiency of care by reducing redundant laboratory and radiology testing. There is evidence that test utilization is reduced substantially within institutions, such as medical centers that implement comprehensive electronic medical records. If physicians can easily access the results of tests that have already been performed, they are less likely to repeat them. However, while it is intuitive that HIE across organizations in a community would improve the coordination of care, there is scant evidence that community HIE results in a reduction in test utilization. As the United States explores investments in HIE to improve the quality of care, policymakers and potential stakeholders in HIE, such as health plans, need more estimates of the degree to which HIE improves the efficiency of care.

Mesa County, Colorado, is a rich resource for more definitive assessments of the effects of HIE. Quality Health Network (QHN), a regional HIE that started providing data exchange to Mesa County in 2005, captures nearly all the test results in the county and has been adopted by more than 351 practitioners, which is more than 85 percent of practitioners in the county. There is also evidence that since HIE was introduced reductions in laboratory and radiology utilization in Mesa County contrast with national trends of steady or increasing test utilization. This study will formally assess whether adoption of a community-wide HIE reduces utilization of laboratory and radiology testing. The primary study design is a retrospective pre-post comparison of providers working in Mesa County medical practices. Analyses are being conducted at the practice and the provider level. These analyses employ general linear mixed models, with rates and costs of tests as the outcome variables and adoption over time from 2005 to 2010 as the primary predictor variable.

The electronic exchange of health information in communities may improve the quality and efficiency of medical care. Doctors can make better decisions when the health information they need is on hand. By assessing whether a robust, mature regional HIE system helped doctors provide more efficient medical care, this project will provide estimates of value that will prove useful for national decisionmakers and local stakeholders in HIE, and will help guide future HIE efforts.

### Specific Aim:

- Determine whether adoption of HIE in Mesa County, Colorado, is associated with a reduction in test ordering. **(Ongoing)**

**2011 Activities:** The study team conducted a crosswalk of the numeric practice ID and practice name from QHN, which allowed the team to complete the necessary data cleaning and quality checks. The crosswalk was necessary because the study team found that practices that had not adopted HIE by December 2010 were not reliably identified in the dataset. However, they were able to recover several “never-adopters” by

reviewing these data.

In writing and running the SAS code for the descriptive analysis of data, the team also discovered an issue related to the interpretation of the “ordering provider.” Therefore, a new algorithm for attributing an ordering provider to laboratory and radiology claims was implemented to better support the analysis and modeling phase of the project. Since then, a simple descriptive analysis of the data has been completed, as has the initial work on developing the analytic model.

Next steps will include finalizing the data analysis of the effects of health information exchange on rates of test ordering. The investigators, in conjunction with the CEO of QHN, will present initial findings at the national Healthcare Information and Management Systems Society meeting in February 2012. Manuscript development will also take place in the final year of the project.

As last self-reported in AHRQ’s Research Reporting System, project progress and activities are on track and the project budget is underspent. The budget underspending was due to the delay caused by the purchase of ManagedCare by TransUnion in late 2010. Because ManagedCare was the agency providing the project with claims data for the analysis, new business associate agreements had to be developed. Once the new agreements were signed, data became available and the team was able to resume working at full effort.

**Preliminary Impact and Findings:** The project has no findings to date.

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**Target Population:** General

**Strategic Goal:** Develop and disseminate health IT evidence and evidence-based tools to support patient-centered care, the coordination of care across transitions in care settings, and the use of electronic exchange of health information to improve quality of care.

**Business Goal:** Knowledge Creation

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