

Bringing High-Performing Systems to Small Practices

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Organization:	New York City Health/Mental Hygiene
Mechanism:	PAR: HS08-270: Utilizing Health Information Technology to Improve Health Care Quality Grant (R18)
Grant Number:	R18 HS 018275
Project Period:	December 2009 – July 2013
AHRQ Funding Amount:	\$1,199,853

Summary: To date, there is limited evidence about the ability of small community health care providers to improve quality of care through the use of electronic health records (EHRs), and limited data about financial incentives or technical assistance for quality improvement's impact on small providers. Investments in health information technology (IT) are being made to improve quality of care, and though there is evidence of improved quality in integrated delivery systems, such as the Kaiser Permanente system, there is less evidence about the effectiveness of health IT on patient outcomes in nonintegrated health systems.

This study is assessing the effects that supportive EHR implementation, clinical decision support (CDS) systems, and pay-for-quality improvements have on small community providers' clinical preventive services, particularly for cardiovascular health. The New York City Primary Care Information Project (PCIP) is comparing the implementation of EHRs at 80 small ambulatory primary care practices that are early adopters of EHRs and part of an integrated delivery system throughout New York City, to 60 similar practices in the area that are late adopters of EHRs. The project targets EHR implementation throughout New York City and focuses on some of the poorest neighborhoods.

The study is evaluating the impact of an EHR implemented with the support of technical assistance and added tools, including integrated registry systems and CDS, on improvements in quality-of-care as compared to practices that did not have the aforementioned support. The primary goal has been to determine whether practices that have supportive EHR implementation provide higher-quality care and experience a rapid rate of improvement of their quality measures. A secondary goal has been to determine if any characteristics indicate that supported EHR practices are atypical or have consistently different characteristics than other small independent practices. For the secondary goal, the analysis was conducted by comparing practices that were early adopters of an EHR to those that were late adopters. At a more nuanced level, the research is assessing the attributable impact of various interventions on changes in four areas of preventive services on cardiovascular health (aspirin therapy, blood pressure control, cholesterol control, and smoking cessation intervention) at small practices that provide adult primary care. Results will guide future program design and policies for supporting resources to improve cardiovascular health.

Specific Aims:

- Determine whether practices that participated in the PCIP program experienced a more rapid rate of improvement on their quality measures than practices that did not participate. **(Achieved)**
- Determine if PCIP-participating practices are atypical in comparison to other small independent practices in New York City. **(Achieved)**

- Assess the attributable impact of each intervention: adoption of EHR, CDS, and pilot pay-for-quality program. **(Ongoing)**

2012 Activities: The project team completed chart reviews in practices to understand the gains in quality from the use of EHRs. The chart reviews of paper records provided historical data on quality performance prior to the implementation of the EHRs. After the EHRs were implemented, a manual review of electronic records was conducted for comparison. The practices were separated into two cohorts based on whether they were early or late adopters of an EHR. The post-EHR quality performance data was compared to pre-EHR chart data from the late adopters. This cross sectional analysis provided further insight into performance trends pre- and post-EHR adoption, in addition to the analysis of pre- versus post-data from the early adopters.

The team continued an analysis of survey data describing providers' experiences with quality measurement, reporting, and incentives, as well as a survey of general provider characteristics. A factor analysis of physician motivation for using the EHR was conducted to further understand physician attitude about experience using EHR. The team also linked the survey data on providers' attitudes to their actions and use of the EHR, such as computerized provider order entry and structured fields.

For the third aim, three different analyses were conducted to understand the attributable impact of various interventions on quality outcomes. The first analysis was the assessment of the impact of graduated financial incentives to meet quality performance targets for cardiovascular patients. The graduated payments were provided for patients who were more difficult to treat because of socio-economic status or chronic conditions in addition to cardiovascular disease. The impact of financial incentives was assessed by comparing the performance improvement of indicators targeted by financial incentive and the performance improvement on indicators not targeted by financial incentives. Multi-regression models adjusting for practice size and characteristics were used to compare pre- and post-performance on a set of quality measures depending on whether practices were randomized to receive incentives.

The second analysis was of the impact of patient-centered medical home (PCMH) recognition on trends in cardiovascular quality measures. Quality-of-care trends for 267 practices were generated and compared by whether practices had recognition as a PCMH; a total of 64 practices had recognition by December 2012. Quality measures trended included: aspirin therapy for patients with ischemic vascular disease and/or diabetes; blood pressure control for patients with hypertension; body mass index recorded for patient 18 years and older; hemoglobin A1c testing for patients with diabetes; smoking status recorded; and smoking cessation intervention for smokers. The third analysis was trends observed pre- and post-EHR and CDS functionality implementation.

An analysis of the effect of each of the individual EHR adoption interventions on 39 quality measures related to chronic disease prevention and management was conducted in partnership with Weil Cornell Medical College. Predictor variables evaluated included time live on the EHR, use of CDS, quality feedback, financial incentives, and technical assistance.

The project team is using a 1-year no-cost extension to complete the analysis and manuscript development of results. As last self-reported in the AHRQ Research Reporting System, project progress is completely on track and project budget spending is on target.

Preliminary Impact and Findings: The preliminary analysis of technical assistance was associated with improved performance on several clinical process measures, with some evidence of a dose response between number of technical assistance visits and degree of improvement. Providers with five visits improved 3.9 percentage points more than those who had received no visits over the study period, and providers who received eight visits improved by 5.6 more percentage points than those who had received none. In comparing across interventions and their effect on delivery of preventive care on cardiovascular measures, practice exposure to EHRs was not associated with improved quality performance on the targeted measures, and weakly associated with untargeted measures. Similarly, technical assistance was not associated with quality performance on the targeted measures, but was associated with improved quality of care on the untargeted measures for exposure to technical assistance. Exposure to CDS was not associated with performance on either targeted or untargeted measures. However, while financial incentives for quality measures were significantly associated with improved quality of care for the targeted measures, financial incentives were associated with worse performance on the untargeted measures. Preliminary results showed no association between comfort with computers and attitudes toward EHR implementation prior to implementation and measures of EHR use 1 year later. These results hold promise that lack of prior experience and negative attitudes may not impair future meaningful use of health IT.

Target Population: Adults, Inner City*, Low-SES/Low Income*, Medicaid, Medically Underserved, Safety Net

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: Knowledge Creation

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