

Estimating the Effects of Electronic Health Records (EHRs) Sophistication and EHRs Years of Experience on Health Care Quality, Patient Experience, 30-Day Readmissions, and Profitability in U.S Acute Care Hospitals

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Abstract

The objective of this dissertation was to estimate the effects of EHRs sophistication on health care quality, patient experience, 30-day readmissions, and hospital profitability. EHRs data was sourced from Healthcare Information and Management Systems Society and Meaningful Use program. Healthcare quality, financial and hospital-specific data came from several Centers for Medicare & Medicaid Services files and programs. Demographic data came from the Area Health Resources Files.

The analysis employed ordinary least squares (OLS) with propensity weighting and feasible generalized least squares to investigate the association between EHRs sophistication and healthcare quality, patient experience, and 30-day readmissions. Also, OLS with hospital level fixed effects to evaluate the effects of EHRs sophistication on profitability. Controlling for several factors, a hospital with more sophisticated EHRs was associated with negative performance on clinical process of care and patient outcomes as compared to a hospital with less sophisticated EHRs. The study found a statistically significant association between EHRs enabled patient engagement activities with patient experience, but not between patient engagement, care coordination activities, and 30-day readmission. Nevertheless, there was a positive association between improved patient experience and a reduction in 30-day readmission. Lastly, the study found a statistically significant negative effect on hospital operating margin when moving from a less to a more sophisticated EHRs system. Also, generally speaking, the longer a hospital remains in any given higher EHRs sophisticated stage, the better a hospital's operating margin. Moreover, the study found EHRs sophistication has a positive effect on profitability through revenue gain and not through a reduction of operating expenses.

Overall, evidence shows there is a substantial operational disruption upon implementing a more sophisticated EHRs. In addition, there is a positive association between EHRs sophistication and clinical process of care and not patient outcomes, between EHRs enabled patient engagement, care coordination activities and 30-day readmission through improved patient experience and not directly, between EHRs sophistication and profitability through operating revenue gain and not through a reduction of operating expenses.

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