

Health IT Use in Hospitals: Impact on Utilization and Quality in Care Transitions

A Dissertation Proposal Presented to
The Faculty of the Heller School for Social Policy and Management
Brandeis University, Waltham, Massachusetts

By
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ABSTRACT

Quality and cost of care have been and continue to be major concerns in American health care. Health information technology (health IT) investments have potential to radically change the ways in which health care is organized and delivered. They may translate into significant gains in quality, reductions in cost, and increases in efficiency, thereby contributing to improving health system performance. Nonetheless—though the theoretical benefits of health IT are promising—the evidence base in support of compulsory, large-scale adoption is limited. Specifically, little is known about the impact of health IT on utilization or quality-outcomes indicators associated with care transitions from hospital to community settings. And few studies have evaluated the mechanism and context by which health IT may influence outcomes.

The proposed study will increase understanding of the effectiveness of large-scale adoption and use of health IT in influencing the quality and value of care. Using a national sample of hospitals and pooling data from various national databases, it will evaluate the impact of the Meaningful Use (MU) policy on utilization and quality of care outcomes (i.e., a set of clinically related services, including ambulatory care timely follow-up, emergency department [ED] visits, and readmissions) in the first 30 days post-discharge from an index hospitalization. The implications of MU status attainment by hospitals have not been investigated, and the study seeks to fill the research gap. Specific aims are as follows:

- ❖ **Aim 1.** *To determine whether MU predicts the risk of 30-day readmission for hospitalized Medicare elderly patients discharged to home, and to examine whether the relationship is partially mediated through a timely follow-up.*
- ❖ **Aim 2.** *To determine whether MU differentially impacts utilization or quality of care outcomes in hospitals with hospitalist services compared to hospitals with traditional attending physicians.*
- ❖ **Aim 3.** *To analyze trends in Hospital-wide All-cause Unplanned Readmission (HWR) over time and determine whether MU and community factors may explain between-hospital differences in performance.*

The study will include three retrospective quantitative analyses—using quasi-experimental designs—to address the stated aims. It will be presented in a monograph. The first component of the study is a cross-sectional analysis at the patient-level using a *Generalized Structural Equation Modeling* (GSEM) approach for assessing mediation. The second component uses a GSEM approach for testing moderation, with the dependent variables specified at the hospital-level. These components will analyze utilization in the performance period 2011-2012 of the MU policy, while the third one will transition to a longitudinal study design. Specifically, it will use an interrupted time series with comparison group (i.e., MU vs. non-MU hospitals) and *Latent Growth Modeling* for profiling hospitals on the basis of their performance on readmissions during 2008-2012. All three-study components will adjust for patient-, hospital-, and system-level covariates.

Andersen & Newman's (1973) framework for studying health services utilization will provide the theoretical underpinning for the first and third components of the study. The model underscores the role and combined influence of societal forces (i.e., the policy intervention requiring providers to change their business model to adopt health IT and achieve MU), characteristics of the health services system (e.g., key hospital and community features), in conjunction with patient's own attributes (e.g., socioeconomic and health status) in explaining a population's use and type of services. The Donabedian's quality of care framework (i.e., structure, process, and outcomes) will guide the second component, adapted to include the influence of patient population needs and demographics in conjunction with community attributes.

This study has implications for policymakers, payers, and practitioners as they strive for effective methods for improving quality and reducing cost. Likewise, it is relevant to patients and other consumers of health care for individual decision-making as more pertinent information on comparative performance of local hospitals may be available through public reporting. Leveraging health IT potential may enhance quality and value, improve the fiscal outlook of the Medicare program, and contribute to bending the cost curve.

DISSERTATION COMMITTEE

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PROPOSAL HEARING

Date: Thursday, June 5, 2014. **Time:** 10:30 am-12:30 pm

The Heller School for Social Policy and Management, **Room 147**