Developing common methods for evaluating health information exchange

A major goal of health information exchange (HIE) has been to address rising health care costs and variable and inadequate health care quality. A study commissioned by the Agency for Healthcare Research and Quality [1] identified 101 state-related HIE initiatives. The study found that there was vast diversity among projects, that most projects were still in their early stages, and that sustainability remained an elusive but essential goal. None of the projects studied had achieved a sustainable funding or operations model. While HIE may indeed become essential to controlling health care costs and improving health care quality, creating a sustainable model requires knowing where there is financial and clinical value. As pointed out in the accompanying papers, the literature on the benefits of HIE remains sparse.

In 2006, New York State provided $53 million for HIE and health information technology projects [2]. Faced with the opportunity and responsibility of evaluating this portfolio of diverse initiatives, several researchers recognized that the opportunity should be maximized, bringing in expertise from the nation’s leading HIE projects. The United Hospital Fund, as part of its mission to create positive change in health care through research and policy analysis, commissioned a meeting and report on HIE evaluation. We assembled a panel of experts on HIE and experts on evaluation to determine how best to design an evaluation that measures value and identifies its beneficiaries.

Hripcsak and colleagues [3] report on the actual outcome of the November 2, 2006 meeting. A framework that included the components and effects of HIE was discussed. It was noted that HIE projects are very diverse, so defining a single evaluation strategy is difficult. The group prioritized different types of evaluation, arguing that confirming the basic operation of the data exchange and measuring usage for the primary use case were essential to all HIE projects. Equally important to the key stakeholders in each project is verifying the immediate business case to demonstrate that the project is sustainable or at least achieving its goals. Formal, academic evaluations of the effect of HIE on the quality of care were thought to be important, although it was noted that such evaluations need not be repeated by every HIE project. Furthermore, unintended consequences must be monitored. A comprehensive approach to return on investment analysis requires a broad survey of costs and effects and requires time to carry out. In a number of places, programs comprising several HIE projects are being carried out at the regional, state, or national level. Program evaluation may aggregate the results of individual project evaluations and look at broader policy issues across projects.

After the meeting, participants delved into greater detail on a series of HIE evaluation topics. Marchibroda [4] discusses the policy issues that motivate evaluation with a focus on statewide programs. She enumerates a series of questions that need to be answered, and places the evaluations in the context of national policy.

The next four papers review evaluation approaches to HIE. Kern and Kaushal [5] review the evaluation approach to be employed by the Health Information Technology Collaborative (HITEC). HITEC has formulated a plan and is providing services to evaluate New York State’s Healthcare Efficiency and Affordability Law for New Yorkers (HEAL NY) program, which has provided $53 million in funds to 26 HIE and health information technology projects, with plans for increased funding. HITEC has created seven work groups to evaluate the structure, perceptions, effects, and finances of the HIE projects.

Johnson and Gadd [6] discuss a general approach to HIE evaluation: “smallball evaluation.” Smallball evaluation applies a series of small, focused evaluations to the life cycle of a project. They enumerate measures and designs appropriate to each phase of the life cycle. Frisse and Holmes [7] address financial evaluation. They analyze the potential financial impact of HIE, using the MidSouth eHealth Alliance HIE project in the Memphis area as an example. They conclude that savings will be great if practice workflow and patient behavior can be modified through HIE. Ash and Guappone [8] describe the motivation and essential components of qualitative evaluation. They enumerate research questions most amenable to qualitative research and correlate areas of interest with HIE stages of development.

The last two papers review specific uses of HIE. Kaelber and Bates [9] review the role of HIE in patient safety and identify opportunities for improving patient safety.
A rigorous study of the patient safety aspects of an HIE projects ought to consider these opportunities in its analysis. Similarly, Shapiro [10] reviews the role of HIE in public health activities, identifying relevant approaches to evaluation for public health use cases.

In summary, HIE comprises a broad range of technologies and may produce a broad range of effects. Evaluation of HIE therefore requires a multi-faceted approach. To the degree that the community can agree on common methods, duplicate work may be reduced and future meta-analyses will be facilitated.

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References


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