Evaluating Health Information Exchange for Public Health

Jacqueline Merrill[a], Andrew Phillips[b], George Hripcsak[a], Lisa Kern[c], Rainu Kaushal [c]

[a] *Department of Biomedical Informatics, Columbia University, New York, NY*
[b] *School of Nursing, Columbia University, New York, NY,*
[c]*Weill Cornell Medical College, New York, NY*

Abstract

We describe an innovative approach to evaluating health information exchange for public health (HIE for PH), representing one project being conducted by the multi-institutional Health Information Technology Evaluation Collaborative (HITEC) in New York State (USA). We use a modified DeLone and McLean framework to conduct a comparative case study of multiple stakeholders involved in HIE for PH applying qualitative and quantitative evaluation methods. We will present preliminary findings from an evaluation of six Regional Health Organizations (RHIOs) that are implementing a PH Use Case to demonstrate HIE within New York's centralized state health information network (SHIN-NY). This study combines existing approaches into a generalizable evaluation methodology that will produce policy relevant conclusions as well as criteria for longitudinal evaluation of state and regional HIE for PH initiatives.

Keywords:
 Public health, Evaluation, Information exchange

Introduction

New York State (USA) has established a strategic priority with the Health Care Efficiency and Affordability Law for all New Yorkers (HEAL-NY), a multi-million dollar investment in health information exchange (HIE) expected to produce improvements to health care quality, affordability and outcomes statewide. Currently Phase 5 of the multi-phase program is developing three technical components: a Statewide Health Information Network (SHIN-NY) to advance interoperability; community-wide adoption of electronic health records; and population health reporting to support prevention and quality. HEAL-NY Phase 5 grantees are Regional Health Information Organizations (RHIOs) and community health information transfer alliances (CHITAs) which will form the SHIN-NY.
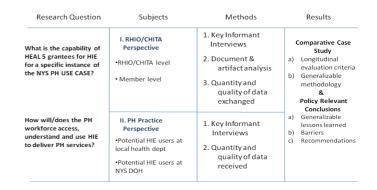
An independent evaluation of how grantees are meeting their stated objectives under the HEAL 5 contracts is being performed by the multi-institutional Health Information Technology Evaluation Collaborative (HITEC), a state-wide collaboration led by Cornell University. Each grantee is required to demonstrate compliance with two use cases developed by the state. Six grantees have selected a Public Health (PH) Use Case, either HIE for PH reporting, or immunization reporting to the state registry. Actual HIE is expected to occur in a subset of these six during the study.

Methods

The HIE for PH evaluation address two questions:

1. What is the capability of HEAL 5 grantees for HIE for a specific instance of the New York State PH Use Case?

2. How does the PH workforce access, understand and use HIE for PH to deliver services?

The research design is a comparative case study employing a multi-level mixed methods approach. It is based on the DeLone and McLean framework, modified to address PH process outcomes across multiple sites [1]. This approach triangulates both quantitative and qualitative evaluation data on HIE quality, accuracy, timeliness, reliability and satisfaction as well as the effect(s) of these elements on PH processes, whether or not data transmission has occurred. The research plan is summarized as follows:

Research Question	Subjects	Methods	Results
What is the capability of HEAL 5 grantees for HIE for a specific instance of the NYS PH USE CASE?	**I. RHIO/CHITA Perspective** •RHIO/CHITA level • Member level	1. Key Informant Interviews 2. Document & artifact analysis 3. Quantity and quality of data exchanged	**Comparative Case Study** a) Longitudinal evaluation criteria b) Generalizable methodology **&** **Policy Relevant Conclusions**
How will/does the PH workforce access, understand and use HIE to deliver PH services?	**II. PH Practice Perspective** •Potential HIE users at local health dept •Potential HIE users at NYS DOH	1. Key Informant Interviews 2. Quantity and quality of data received	a) Generalizable lessons learned b) Barriers c) Recommendations

Conclusion

In public health, value is typically measured in terms of PH's functional mission, or the cost-benefits of health promotion and disease prevention policies and programs. While these concepts represent tangible societal and in some cases financial benefits, relating these concepts to the value of the HIE in support of PH functions has been limited. Preliminary finding from this research will illustrate how this novel, theory based

approach for evaluating HIE for PH can document value and produce policy recommendations linked to PH process.

Acknowledgements

References

[1] Public Health Informatics Institute, 2005. Towards Measuring Value: An Evaluation Framework for PH Information Systems. Accessed September, 2009 http://www.phii.org/resources/doc/FrameworkBrief.pdf..