

## Improving Population Health Through Enhanced Targeted Regional Decision Support

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<b>Organization:</b>	Regenstrief Institute
<b>Mechanism:</b>	PA: HS09-070: AHRQ Health Services Research (R01)
<b>Grant Number:</b>	R01 HS 020909
<b>Project Period:</b>	September 2011 - September 2016
<b>AHRQ Funding Amount:</b>	\$2,041,559

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**Summary:** Clinical providers often underreport population-level disease burden or their reporting is incomplete, inaccurate, or delayed. A variety of reasons cause this, including: 1) a lack of knowledge on reporting requirements and process; 2) a lack of resources to facilitate the reporting process; and 3) a perceived lack of value for reporting. Underreporting and incomplete reporting can lead to inaccurate assessments of the disease burden in a community, which hinders population health interventions and preventive care delivered to individual patients.

As clinical data is captured increasingly in electronic form, there is potential for more comprehensive assessment of disease burden and increased automation of electronic public health reporting. Health information exchanges (HIEs) are an emerging source of health care and clinical data that can be used to facilitate information-sharing and data quality. An automated electronic laboratory reporting system that leverages data from an integrated HIE can overcome some of the disease burden reporting limitations by enhancing population-based reporting with additional data such as recent laboratory results, enhanced patient and provider demographics, and medication history.

In an effort to improve clinician reporting of notifiable conditions to public health, and to improve the quality of the data collected, this project is implementing novel clinical decision support and clinical messaging tools. The research team will develop a standard pre-populated case reporting form to serve as a clinical decision support tool containing patient demographic data and pertinent case management information. The form will remind clinicians to report notifiable cases to the appropriate public health stakeholders and will provide guidance on the reporting information needed. A clinical messaging system will deliver the forms, allowing them to be integrated more seamlessly into health care providers' workflow. The clinical messaging system will build on an existing HIE known as the Indiana Network for Patient Care (INPC). When forms are flagged as reportable, they will be sent to appropriate clinical providers and public health agencies and submitted to the INPC. An interrupted time series design will be used to evaluate the effects of the standard pre-populated form reminder intervention on a variety of outcomes, including the rate of provider reporting, data quality, and timeliness of reporting to public health officials.

An enhanced pre-populated form that includes supplemental clinical case data will also be developed and deployed. A group of public health stakeholders will determine which supplemental data elements are needed for a select set of reportable conditions. The research team will evaluate the quality and feasibility of the supplemental data. The enhanced pre-populated form will be compared to both pre-intervention data and the standard pre-populated form on various outcomes.

Lastly, the research team will administer a series of interviews throughout the research project to collect qualitative data from clinicians and public health stakeholders to identify factors that influence the impact of the tools on workflow, provider awareness, and user satisfaction.

The implementation of automated data capture and information enhancements will streamline the reporting workflow for notifiable conditions, lower barriers to reporting and case followup, increase data completeness, and capture a greater portion of communicable disease burden.

### **Specific Aims:**

- Evaluate the process and operational outcomes of deploying an advanced technical framework and methodology in the context of a long-standing operational HIE that enhances management of population-level notifiable condition reporting and bidirectional communication among providers and population health stakeholders using decision support tools. **(Ongoing)**
- Evaluate the quality of existing health care data and the capacity of an advanced technical framework to enhance data quality by measuring baseline, pre-implementation and post-implementation data quality statistics including accuracy, completeness, and timeliness for provider and patient demographic information, and additional relevant clinical data. **(Upcoming)**
- Identify and assess facilitators and barriers – including social, behavioral, and environmental – that are associated with the implementation and utilization of an advanced technical framework both within single organizations and across multiple organizations within an HIE. **(Ongoing)**

**2011 Activities:** This project was initiated in the fourth quarter of 2011 and activities primarily involved project start-up. Institutional review board applications were submitted and are pending approval. Development of data collection and analysis plans is in process, along with clinic recruitment strategies, including outreach to clinic directors and coordinating clinic site visits. Planning for the project kick-off meeting occurred and the meeting for all co-investigators and research staff will be held in early 2012. Lastly, a technical project plan to activate the prototype electronic forms generation process was developed and will be validated in early 2012.

As last self-reported in the AHRQ Research Reporting System, project progress and activities are on track and the project budget funds are somewhat underspent. Once subcontracts are executed, project budget spending will be on track.

**Preliminary Impact and Findings:** This project has no findings to date.

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**Target Population:** General

**Strategic Goal:** Develop and disseminate health IT evidence and evidence-based tools to support patient-centered care, the coordination of care across transitions in care settings, and the use of electronic exchange of health information to improve quality of care.

**Business Goal:** Knowledge Creation

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