Using HIEs to measure clinical preventive services

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Introduction

- HIEs may provide low cost monitoring of clinical preventive services
- May also provide an opportunity to monitor quality improvement efforts
- States, Communities and HIEs for Prevention and Public Health (SCHIEPPH)
  - A continuation of the work of the Demonstrating the Preventive Care Value of Health Information Exchanges (DPCVHIE) project
Background

- DPCVHIE initiated in 2010
  - Wanted to explore the possibility that HIEs might be a good source for efficient and low cost monitoring of the delivery of clinical preventive services
  - Also wondered if HIEs could be used to conduct surveillance efforts to improve quality of health
  - This work wrapped up in October of 2012 but was continued starting August 2011 as the SCHIEPPH project
Goals

- Determine the viability of using information routinely transmitted by or through HIEs in the evaluation of clinical preventive services for chronic disease.
- Investigate whether preventive care services for a given population can be estimated from the information shared by organizations participating in an HIE.
Objectives

- Develop a demonstration project using real world HIE data to monitor clinical preventive services
  - Collect information on lessons learned
  - Provide feedback from real world experiences to standards bodies
  - Begin to establish a preventive care community of providers, HIEs and public health organizations
Methods

- Identify candidate HIEs to work with
  - Enterprise, community

- Develop a set of candidate measures to investigate
  - ABCS of the CDC Million Hearts program

- Select an open source tool or set of tools to facilitate data extraction and quality measure calculation

- Begin longitudinal evaluation
Methods – Challenges

- HIE recruitment was complicated by the following
  - Lack of a unified governance structure
  - Dependency on EHR vendors
  - Data use agreements were unclear
  - Insufficient technical understanding of [their own] infrastructure

- Result was to modify approach
  - Add a semi-structured interview component
  - Extend prior survey research by speaking with HIEs
  - Develop an in-depth understanding of what limits HIEs in computing clinical quality measures
# Measures: ABCDS

<table>
<thead>
<tr>
<th>Description</th>
<th>NQF Measure(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aspirin therapy for secondary prevention</td>
<td>0068</td>
</tr>
<tr>
<td>Blood pressure control</td>
<td>0013, 0018, 0061</td>
</tr>
<tr>
<td>Cholesterol control</td>
<td>0064, 0075</td>
</tr>
<tr>
<td>Diabetic glycemic control</td>
<td>0059</td>
</tr>
<tr>
<td>Smoking cessation counseling</td>
<td>0027, 0028a</td>
</tr>
<tr>
<td>BMI</td>
<td>0024, 0421</td>
</tr>
</tbody>
</table>
Transmission of the measures

xml --> Mirth --> CONNECT --> NwHIN --> CONNECT
(local) (remote)

An underlying goal was to develop a process for data extraction, measure calculation and transmission to the health department that utilized open source tools and could be reused elsewhere.
Partners

- Two state Health Departments
- Community HIE (HealthInfoNet)
  - private not for profit HIE in Maine
  - 376 ambulatory providers and 35 of 38 hospitals
- Enterprise HIE (Midwest US)
  - comprises 750 physicians, 45 clinic locations
### Community HIE - Measures

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Community HIE - Results

- Use of popHealth for measure calculation (MITRE assisted)
- Transmission of the measures to state health department via email
- C32/CCD documents remain a challenge
  - 30 seconds per document, 300K documents per each of 3 measurement periods
## Enterprise HIE - Measures

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Enterprise - Results

- Initial challenge was calculation of the measures
- Next issue was transmission to the CONNECT gateway
- Transmission of the measures to state health department fully automated with continuous reporting for a year
Results - Overall

- Working with 2 different types of HIEs (community and enterprise) to examine longitudinal data for the ABCDS measures
- Found great variability in HIE capabilities in effort to report on ABCDS
Approach the health department (HD) first when trying to coordinate the HD and the HIE

A well documented technical approach facilitates understanding HIE maturity

As HIEs and MU mature, clinical quality measures can increasingly be used to monitor clinical preventive services
Results - Technical

- HL7 messages commonly used
- CCDs pose challenges with some HIEs reporting that they are in .pdf-like format
- EHR interfaces tend to be unique, even for the same vendor
- Early HIE involvement in EHR selection and implementation can reduce cost to the practice
Discussion - Overall

- ABCDS data not always present
- Sometimes challenging to match HIE patient level data to MU measures
- No single HIE governance structure
- HIEs functionally dependent on EHR vendors
- CCD formatting issues
Assure patient confidentiality with automated summary reporting

Need to address the value versus risk perception by a given institution associated with sharing quality metrics

Data use agreements may not typically cover aggregate quality reporting

CMS requires provider to report
Conclusions

- Data use agreements should address sharing with public health agencies
- Effort should be made to encourage the sharing of quality reporting information and to help reduce the cost of transmission
- Interface development costs should be mitigated
- HIE infrastructure costs should be covered with sustainable funds to ensure stability
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Questions?

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