CHeQ Informational Webinar Series

Innovations in HIE

January 28, 2014

For Audio: 1-866-740-1260

Access Code: 9375739
California Health eQuality Program (CHeQ)

- Implementing California’s Health Information Exchange (HIE) programs with California Health and Human Services Agency (CHHS), under state’s Cooperative Grant Agreement with federal Office of the National Coordinator for Health Information Technology (ONC)

- CHeQ promotes coordinated health care for Californians by catalyzing the adoption and implementation of Health Information Exchange by:
  - Building a trusted exchange environment that enables inter-organizational and interstate exchange while respecting and protecting patient privacy
  - Supporting uniform standards for exchanging health information
  - Improving public health capacity
  - Accelerating HIE implementation by supporting regional HIE initiatives
Innovations in HIE Series
http://www.ucdmc.ucdavis.edu/iphiconf/Programs/cheq/cheqinnovations.html

- Session 1: Innovations in Data Analytics
  - National Rural ACO – Lynn Barr
  - Tuesday, January 7th at 10am

- Session 2: Innovations in HIE for Special Populations (Foster Children)
  - The Children’s Partnership – Beth Morrow and Kiki Nocella
  - Tuesday, January 14th at 10am

- Session 3: Innovations in Patient Access (Blue Button)
  - LA Care – Ali Modaressi
  - Tuesday, January 21st at 10am

- Session 4: Findings from CHeQ’s HIE Survey of CA Community Clinics
  - Kathy Kim
  - Tuesday, January 28th at 10am

- Session 5: Innovations in HIE for Behavioral Health **NEW DATE**
  - OCPRHIO – Paul Budilo
  - Wednesday, January 29th at 10am
Health Information Exchange Among California Clinics: Results of a Statewide Survey

Katherine Kim
San Francisco State University
January 2014
Background

• HIE important for community clinics
• Little known about HIE/HIO for community clinics.
  – Facilitators and barriers published in small qualitative community clinic studies
• California Health eQuality interested in HIE adoption in safety net
Purpose

• Conduct a statewide survey of community clinics
  – Sites
  – Corporate offices
• To better understand whether and how clinics are
  – Adopting HIE
  – Participating in HIOs
  – Facilitators and Barriers
Methods

• Summer-Fall 2013
• Community Clinic Sites
  – Telephone survey
  – OSHPD list of primary care clinic sites confirmed by phone
• Clinic Corporations
  – Online survey
  – Distributed by CPCA to members
  – Distributed to other OSPHD list of corporate offices by SFSU
• Urban/rural determined by zip code
• Webinar focus groups to review findings for each group separately
## Community Clinic Results

<table>
<thead>
<tr>
<th>Clinic Type</th>
<th>Urban</th>
<th>Rural</th>
<th>Don’t Know</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban</td>
<td>159</td>
<td>33</td>
<td>2</td>
<td>194</td>
</tr>
<tr>
<td>Rural</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Don’t Know</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td>194</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Clinic with Parent Organization</th>
<th>Clinic without Parent Organization</th>
<th>Don’t Know</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>116</td>
<td>75</td>
<td>3</td>
<td>194</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

8 participants in follow-up focus groups (4 rural, 4 urban)
Focus Group respondents agreed EHR and HIE go hand-in-hand
EHR is necessary to have pertinent and up to date data in order to exchange
Health Information Exchange Adoption

Overall and by Clinic Category

Percent

Overall: 47%
Urban Clinic: 43%
Rural Clinic: 73%
Corporate Site: 53%
Solo Site: 40%
Types of Data Being Exchanged
Focus Group Finding:
• HIE needs to be in place for 18 months to 3 years to understand impacts on cost or revenue
### Importance of Strategic Factors in Implementing HIE

Not at all important (1) to Extremely important (7)

<table>
<thead>
<tr>
<th>Factor</th>
<th>Overall</th>
<th>Urban Clinics</th>
<th>Rural Clinics</th>
<th>Corporate Sites</th>
<th>Solo Sites</th>
</tr>
</thead>
<tbody>
<tr>
<td>Priority of HIE vs. other initiatives</td>
<td>5.1</td>
<td>5.1</td>
<td>5.2</td>
<td>5.3</td>
<td>4.9</td>
</tr>
<tr>
<td>Importance of HIE to clinic mission</td>
<td>5.5</td>
<td>5.5</td>
<td>5.8</td>
<td>5.8</td>
<td>5.1</td>
</tr>
<tr>
<td>Importance of HIE to daily operations</td>
<td>5.5</td>
<td>5.4</td>
<td>5.8</td>
<td>5.7</td>
<td>5.1</td>
</tr>
<tr>
<td>Importance of HIE to clinical care coordination</td>
<td>5.8</td>
<td>5.8</td>
<td>6.1</td>
<td>6.1</td>
<td>5.4</td>
</tr>
<tr>
<td>Importance of HIE to quality of care</td>
<td>5.7</td>
<td>5.7</td>
<td>5.9</td>
<td>6.0</td>
<td>5.4</td>
</tr>
</tbody>
</table>

**Focus Group Findings:**
- Efficiency and effectiveness becomes priority
- “It is a strategic priority but been working so hard that everyone’s a little burned out.”
Importance of Technical Factors in Implementing HIE
Not at all important (1) to Extremely important (7)

<table>
<thead>
<tr>
<th>Factor</th>
<th>Overall</th>
<th>Urban Clinics</th>
<th>Rural Clinics</th>
<th>Corporate Sites</th>
<th>Solo Sites</th>
</tr>
</thead>
<tbody>
<tr>
<td>Availability of HIO in area</td>
<td>5.7</td>
<td>5.7</td>
<td>6.1</td>
<td>5.8</td>
<td>5.6</td>
</tr>
<tr>
<td>Availability of technical assistance</td>
<td>6.1</td>
<td>6.1</td>
<td>6.3</td>
<td>6.1</td>
<td>6.2</td>
</tr>
<tr>
<td>Data standards</td>
<td>6.1</td>
<td>6.1</td>
<td>6.5</td>
<td>6.1</td>
<td>6.1</td>
</tr>
<tr>
<td>Technical expertise</td>
<td>6.2</td>
<td>6.2</td>
<td>6.4</td>
<td>6.2</td>
<td>6.2</td>
</tr>
<tr>
<td>Adequacy of internet connection</td>
<td>6.4</td>
<td>6.3</td>
<td>6.7</td>
<td>6.5</td>
<td>6.2</td>
</tr>
<tr>
<td>Privacy</td>
<td>6.5</td>
<td>6.5</td>
<td>6.5</td>
<td>6.5</td>
<td>6.5</td>
</tr>
<tr>
<td>Security</td>
<td>6.7</td>
<td>6.7</td>
<td>6.7</td>
<td>6.7</td>
<td>6.7</td>
</tr>
</tbody>
</table>

Focus Group Findings:
- HIOs not available in some areas, performance concerns in others
- “Becoming more dependent on technology can scare when you don’t have expertise to keep you stable or fix it if something goes down.”
- Privacy and Security are important due to reliance on partners in exchange
### Importance of Leadership Factors in Implementing HIE

Not at all important (1) to Extremely important (7)

<table>
<thead>
<tr>
<th>Factor</th>
<th>Overall</th>
<th>Urban Clinics</th>
<th>Rural Clinics</th>
<th>Corporate Sites</th>
<th>Solo Sites</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual HIE leader in community</td>
<td>5.4</td>
<td>5.4</td>
<td>5.6</td>
<td>5.5</td>
<td>5.4</td>
</tr>
<tr>
<td>Knowledge about HIE</td>
<td>5.8</td>
<td>5.9</td>
<td>5.8</td>
<td>5.8</td>
<td>6.0</td>
</tr>
<tr>
<td>Clinic leadership understanding of HIE</td>
<td>5.8</td>
<td>5.7</td>
<td>6.1</td>
<td>5.7</td>
<td>6.0</td>
</tr>
<tr>
<td>Level of interest in HIE among clinicians</td>
<td>5.8</td>
<td>5.7</td>
<td>5.9</td>
<td>5.8</td>
<td>5.8</td>
</tr>
<tr>
<td>Level of interest in HIE of clinic leadership</td>
<td>6.0</td>
<td>6.0</td>
<td>6.0</td>
<td>6.0</td>
<td>6.0</td>
</tr>
<tr>
<td>Willingness of local health organizations to collaborate</td>
<td>6.0</td>
<td>6.0</td>
<td>5.8</td>
<td>6.2</td>
<td>5.8</td>
</tr>
<tr>
<td>Willingness of partners to share data</td>
<td>6.1</td>
<td>6.0</td>
<td>6.3</td>
<td>6.2</td>
<td>5.9</td>
</tr>
</tbody>
</table>

Focus Group Findings:

- Lack of interest among clinicians
- It needs to be a priority among all partners to be successful
- Resources are needed. "I hope that in the upcoming years there will be a way to feel more comfortable and competent with what we’re doing with HIE and streamline it a bit. It feels a bit like creating the wheel and haven’t been able to steal something from someone and adapt it, I hope it gets easier in the future."
Conclusion

• EHR adoption among community clinics is substantial at almost 80%.
• Almost half are conducting HIE
• Lab orders and results are the most frequently exchanged type of data and are about twice as frequent as referrals, the next most frequent type of data exchanged.
• Diverse array of exchange partners
Conclusion, cont.

• HIE is important to clinics and their missions, operations, care coordination, and quality of care but competes with many others.

• Technical factors were most important to HIE implementation:
  – Privacy and Security among all clinic
  – Connectivity among rural

• Urban clinics and solo sites are lagging their rural and corporate counterparts. Need resources to catch up.

• Sustainability plan is necessary and financial impact needs to be better understood.
Clinic Corporation Results

<table>
<thead>
<tr>
<th>Number of clinic sites</th>
<th>N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>41 (33)</td>
</tr>
<tr>
<td>2-4</td>
<td>36 (29)</td>
</tr>
<tr>
<td>5-9</td>
<td>30 (24)</td>
</tr>
<tr>
<td>10 or more</td>
<td>19 (15)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Role of Respondents</th>
<th>N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administrative</td>
<td>51 (48)</td>
</tr>
<tr>
<td>Clinical</td>
<td>9 (8)</td>
</tr>
<tr>
<td>Technical</td>
<td>44 (40)</td>
</tr>
<tr>
<td>Financial</td>
<td>4 (4)</td>
</tr>
<tr>
<td>Other</td>
<td>2 (2)</td>
</tr>
</tbody>
</table>

126 Survey respondents
12 Participants in clinic corporation focus groups
Electronic Health Record Adoption

86% EHR Adoption
Almost all are Meaningful Use Certified

Overall and by Corporation Category

Percent among EHR Adopters

Overall: 96%
Urban: 95%
Rural Corporations: 100%

Not certified for MU
Certified for MU
# Health Information Exchange Adoption

56% HIE adoption

<table>
<thead>
<tr>
<th>Among HIE Adopters</th>
<th>Overall N (%)</th>
<th>Urban N (%)</th>
<th>Rural N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Share patient electronic data internally</td>
<td>45 (67)</td>
<td>32 (67)</td>
<td>12 (67)</td>
</tr>
<tr>
<td>Mean number of internal exchange locations</td>
<td>1.97</td>
<td>1.97</td>
<td>1.67</td>
</tr>
<tr>
<td>Share patient electronic data externally</td>
<td>34 (52)</td>
<td>23 (48)</td>
<td>11 (65)</td>
</tr>
<tr>
<td>Mean number of external exchange locations</td>
<td>2.11</td>
<td>2.09</td>
<td>2.17</td>
</tr>
<tr>
<td>Access to external data:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>View it via a website or portal</td>
<td>11 (32)</td>
<td>6 (27)</td>
<td>5 (42)</td>
</tr>
<tr>
<td>Receive it into the EHR</td>
<td>9 (27)</td>
<td>7 (32)</td>
<td>2 (17)</td>
</tr>
<tr>
<td>Both portal and into EHR</td>
<td>14 (41)</td>
<td>9 (41)</td>
<td>5 (42)</td>
</tr>
</tbody>
</table>
Focus Group Findings:
“For the vast majority of patients they are not educated and to tell you the truth the providers are not educated about nor do they want to spend time educating patients on the benefits…”
Types of Data being Exchanged

Data Types

- lab orders
- lab results
- radiology orders
- radiology results
- summary care records
- inpatient notes
- inpatient problem lists
- discharge summaries
- ambulatory notes
- ambulatory problem lists
- referrals
- clinical summaries
- other

Percent

internal exchange
external exchange
Data Standards

- PDF, TIFF: Send 49%, Receive 47%
- HL7 V2: Send 51%, Receive 51%
- CCR, CCD: Send 20%, Receive 20%
- Word, Excel: Send 20%, Receive 25%
- Plain text: Send 9%, Receive 16%
- Non-standard: Send 21%, Receive 20%
- Direct: Send 9%, Receive 8%
HIE Services and Management

53% manage HIE technology internally

47% outsource

Percent of Outsourcers

- Hospital or health system: 15%
- Community clinic consortium: 30%
- HCCN: 8%
- Other HIT provider: 43%

HIE Technology Provider
HIE Services and Management

Focus Group Findings:

• Technical: Using outside vendors are helpful but when there are glitches in the system, it can cause large delays and big issues when the vendors aren’t knowledgeable:

  “...the consultant basically crashed the interface for about two weeks and you can imagine how many personnel hours were put into retrieving all the data and getting it inputted and stuff.”

• Resources: Difficulty in recruiting and keeping experienced IT resources in house.

• Financial: Costs for outsourcing to a vendor and can be higher than having an internal resource.

  “It’s not pretty, it’s like the plumbing underneath your house, the pipes in your wall you don’t see it but it makes everything go where it needs to go.”
Financial Impact of HIE

Focus Group Findings:

- Decrease costs from manual processes and workflows, timeliness, improved readmission rates
- Increased costs due to capital costs and ongoing maintenance expenses
- Could be a wash for clinics

“If you had asked me that question two different ways and say you know does HIE affect costs in the short run, of course the slam dunk answer is of course, yes, but long term I think it’ll decrease it by virtue of reduction and duplication of efforts.”

<table>
<thead>
<tr>
<th></th>
<th>Number (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIE decreases cost</td>
<td>12 (11)</td>
</tr>
<tr>
<td>HIE increases cost</td>
<td>61 (68)</td>
</tr>
<tr>
<td>No change to cost</td>
<td>32 (29)</td>
</tr>
<tr>
<td>HIE decreases revenue</td>
<td>14 (12)</td>
</tr>
<tr>
<td>HIE increases revenue</td>
<td>28 (25)</td>
</tr>
<tr>
<td>No change to revenue</td>
<td>71 (63)</td>
</tr>
</tbody>
</table>
Priority of HIE

Focus Group Findings:

- Mandates and deadlines trump other priorities

“Most healthcare operations/organizations these days are besieged on all sides by so many different initiatives everything from meaningfully use and patient centered medical home, trying to manage healthcare reform, expansion of MediCal coverage…priority scoring lower is a byproduct of all the balls that are in the air right now with no time to juggle.”

“And the people who might be exchanging information don’t necessarily see a business value in it. They may recognize that it is good for patients, it is a good overall idea but are hesitant to invest funding in it without any realized benefit to themselves…”

<table>
<thead>
<tr>
<th></th>
<th>Overall</th>
<th>Urban</th>
<th>Rural</th>
</tr>
</thead>
<tbody>
<tr>
<td>Priority compared to other initiatives</td>
<td>4.40</td>
<td>4.45</td>
<td>4.22</td>
</tr>
<tr>
<td>Importance to daily operations</td>
<td>4.70</td>
<td>5.69</td>
<td>4.73</td>
</tr>
<tr>
<td>Importance to quality of care</td>
<td>5.28</td>
<td>5.25</td>
<td>5.39</td>
</tr>
</tbody>
</table>
Importance of Technical Factors in Implementing HIE

Scale of 1 (not important) to 7 (extremely important)

<table>
<thead>
<tr>
<th></th>
<th>Overall</th>
<th>Urban</th>
<th>Rural</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Challenge</td>
<td>5.16</td>
<td>5.15</td>
<td>5.22</td>
</tr>
<tr>
<td>Adequacy of internet connection</td>
<td>5.39</td>
<td>5.40</td>
<td>5.35</td>
</tr>
<tr>
<td>Availability of HIO in area</td>
<td>5.61</td>
<td>5.59</td>
<td>5.68</td>
</tr>
<tr>
<td>Availability of technical assistance</td>
<td>5.65</td>
<td>5.69</td>
<td>5.45</td>
</tr>
<tr>
<td>Technical expertise</td>
<td>5.75</td>
<td>5.81</td>
<td>5.55</td>
</tr>
<tr>
<td>Privacy</td>
<td>5.88</td>
<td>5.83</td>
<td>6.09</td>
</tr>
<tr>
<td>Security</td>
<td>5.90</td>
<td>5.83</td>
<td>6.17</td>
</tr>
<tr>
<td>Data Standards</td>
<td>5.99</td>
<td>6.03</td>
<td>5.83</td>
</tr>
</tbody>
</table>

Focus Group Findings:

- HIE consent, both technical and policy aspects, are not clearly developed yet.
- A forum that brings together people who are ready to start working on HIE
- Guide from successful HIEs
Importance of Leadership Factors Implementing HIE

Not at all important (1) to Extremely important (7)

<table>
<thead>
<tr>
<th>Factor</th>
<th>Overall</th>
<th>Urban</th>
<th>Rural</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinic leadership understanding of HIE</td>
<td>5.35</td>
<td>5.43</td>
<td>5.05</td>
</tr>
<tr>
<td>Knowledge about HIE</td>
<td>5.38</td>
<td>5.43</td>
<td>5.17</td>
</tr>
<tr>
<td>Level of interest of clinic leadership in HIE</td>
<td>5.41</td>
<td>5.48</td>
<td>5.17</td>
</tr>
<tr>
<td>Level of interest in HIE among clinicians</td>
<td>5.55</td>
<td>5.51</td>
<td>5.73</td>
</tr>
<tr>
<td>Clinician understanding of HIE</td>
<td>5.64</td>
<td>5.67</td>
<td>5.50</td>
</tr>
<tr>
<td>Individual HIE leader in the community</td>
<td>5.67</td>
<td>5.75</td>
<td>5.35</td>
</tr>
<tr>
<td>Willingness of local health organizations to collaborate</td>
<td>5.95</td>
<td>5.97</td>
<td>5.86</td>
</tr>
<tr>
<td>Willingness of partners to share data electronically</td>
<td>6.01</td>
<td>6.06</td>
<td>5.82</td>
</tr>
</tbody>
</table>

Focus Group Findings:
- Important that external orgs are ready to exchange
- Clinic Leadership and Clinicians are important to be successful
  “I don’t know how we’re going to do it and maybe HIE can help but we need to go from need to know to need to share if this is going to work“
Financial Factors

<table>
<thead>
<tr>
<th></th>
<th>Overall</th>
<th>Urban Corporations</th>
<th>Rural Corporations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital expense</td>
<td>5.48</td>
<td>5.58</td>
<td>5.09</td>
</tr>
<tr>
<td>Availability of funds</td>
<td>6.18</td>
<td>6.26</td>
<td>5.86</td>
</tr>
</tbody>
</table>

Financing HIE

- 36% have HIE included in their budgets for the next 12 months
- Organizations use general operating funds (37%) or grants made to the clinic (33%) to cover their HIE costs.
- Sustainability plan for HIE is needed
Percent of budget allocated to HIT, overall and by corporation category
Conclusion

• 96% adoption of EHRs by clinic corporations
• 56% adoption of HIE
• On average, less than two external exchange partners
• Lab orders and results are the most frequently exchanged type of data followed by referrals.
• Data standards adoption is low
• Standards, privacy and security, and willingness of partners to share data are barriers
• Managing HIE systems is challenging, whether insourced or outsourced
Conclusion

• Financial issues must be addressed for adoption and sustainability:
  – Value proposition: the majority of clinic corporations think HIE increases cost and has no impact on revenue
  – Financing: HIE is not budgeted in most clinic corporations.

• Attention must be paid to the prioritization of HIE given the competing initiatives and mandates facing clinic corporations.
Acknowledgements

SFSU Team
Danielle Gordon
Holly Logan
Dennis Browe
Lori Hack
Jason Chang

CPCA Team
Andie Patterson
Christine Kelly
Clinic Consortia

CHeQ, UC Davis
Rayna caplan
Questions

Thank you

kathykim@sfsu.edu
Join us for our final session

TOMORROW!

Wednesday, January 29th  at 10am

Innovations in HIE for Behavioral Health

Paul Budilo
Thank You!

For more information, please contact:

Kathy Kim – kathykim@sfsu.edu

http://www.ucdmc.ucdavis.edu/iph/Programs/cheq/cheqinnovations.html