Population Health Information Exchange Over a Digital Bridge

Session #242, March 8, 2018
Jim Jellison, Director of Practice Support, Public Health Informatics Institute
Jeff Livesay, Sr. Executive Vice President, Michigan Health Information Network
Shared Services (MiHIN)

www.himssconference.org

DISCLAIMER: The views and opinions expressed in this presentation are those of the author and do not necessarily represent official policy or position of HIMSS.
Conflict of Interest

Jim Jellison, M.P.H.

Has no real or apparent conflicts of interest to report.

Jeff Livesay, B.S. Engineering

Has no real or apparent conflicts of interest to report.
Agenda

• Overview of Digital Bridge
• Introduction to electronic case reporting (eCR)
• Current legal approach for eCR
• About MiHIN: Network of Networks
• Current state of reporting
• MiHIN’s Digital Bridge pilot
• Scalability and next steps
Learning Objectives

• Define a collaborative between health care providers, public health and information technology developers to improve information exchange and health outcomes.

• Appraise progress toward automating public health case reporting of infectious disease cases.

• Outline future work to improve chronic disease management and deliver social and environmental risk data to clinical settings.
What is Digital Bridge?

• A partnership of health care, health IT and public health organizations
  ➢ Goal is to ensure our nation’s health through a bidirectional information flow between health care and public health
  ➢ A forum for sharing ideas
  ➢ An incubator for growing projects that meet this vision

• Funded by the Robert Wood Johnson Foundation and the de Beaumont Foundation. Program management provided by Deloitte Consulting and the Public Health Informatics Institute

• Initial focus: electronic case reporting (eCR)
Governance Organizations
Electronic case reporting (eCR) is the automated transmission of case reports using information from the EHR to public health for review and action.

01 Provider Enters Information
Health care provider documents patient visit information into electronic health record as part of regular workflow.

02 Health Technology Sends Information
Criteria in electronic health record or health information exchange triggers an electronic case report (eCR) to automatically send.

03 Determine Reportability
Case report is validated and if reportable, is forwarded to the appropriate agency. Health care provider is notified if disease case is submitted.

04 Analysis and Evaluation
Public health professionals receive the disease case for analysis and evaluation.

05 Additional Feedback to Provider
In the future, the provider can choose to receive guidance on patient care and outbreak response from public health.
### eCR Site Participation

<table>
<thead>
<tr>
<th>Public Health Agency</th>
<th>Health Care Provider</th>
<th>EHR Vendor</th>
</tr>
</thead>
<tbody>
<tr>
<td>California</td>
<td>UC Davis</td>
<td>Epic</td>
</tr>
<tr>
<td>Kansas</td>
<td>Lawrence Memorial Hospital</td>
<td>Cerner</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>Partners HealthCare</td>
<td>Epic</td>
</tr>
<tr>
<td>Michigan</td>
<td>Local Public Health Clinics</td>
<td>NetSmart/HIE-MiHIN</td>
</tr>
<tr>
<td>New York City</td>
<td>Institute of Family Health</td>
<td>Epic</td>
</tr>
<tr>
<td>Utah</td>
<td>Intermountain Healthcare</td>
<td>Cerner</td>
</tr>
</tbody>
</table>
Poll: Question 1
Which best describes your organization?
1. Health care
2. Health IT
3. Public health
4. Other
Poll: Question 2

Is your organization participating in eCR efforts?

1. No
2. Yes – somewhat
3. Yes – very involved
4. Not sure
Poll: Question 3

Which best describes your organization’s eCR efforts to date?

1. Standards development
2. Software/technical development
3. Implementation/evaluation
4. Legal/policy/other
Short-term Legal Approach

Agreement between Public Health Agency and Decision Support Intermediary includes terms of MOU & TPA

Decision Support Intermediary acts as a Business Associate of the Health Care Provider

Public Health Agency ➔ MOU & TPA ➔ Decision Support Intermediary ➔ BAA & DUA ➔ Health Care Provider

BAA = business associate agreement
DUA = data use agreement
MOU = memorandum of understanding
TPA = trading partner agreement
Michigan Health Information Network
Shared Services

Jeff Livesay, Senior Executive Vice President
About MiHIN:

Network of Networks

This work made possible by funding from the Michigan Department of Health and Human Services

Copyright 2015-2018 Michigan Health Information Network Shared Services
What’s the problem?

• Reportable conditions are those considered to be of great public health importance that health care providers are required to report to public health agencies when diagnosed.

• Reporting allows collection of statistics that can help:
  – show how often disease occurs.
  – identify disease trends.
  – track/manage disease outbreaks.

• There are more than 90 reportable conditions in total.
Reportable Conditions Include:

- Gonorrhea
- Chlamydia
- Pertussis (Whooping Cough)
- Zika Virus
- Salmonellosis
Current State?

• Providers have a poor record of reporting to public health agencies.
  – Not aware of requirement to submit
  – Unsure of which conditions are reportable
  – Do not know how to submit, or too cumbersome
  – Don’t feel they have the time to go through the process

• Today’s reporting is not electronic and is not scalable.
Other Challenges

• Electronic Lab Reports (ELRs) are good start, but data are limited and don’t capture all possible cases.

• Some EHRs are not ready to send electronic initial case reports (eICRs).

• Need a mechanism to share eICRs that includes:
  – all data to support timely, accurate decision-making
  – contact information necessary for taking fast action (i.e., preventing spread of disease)
  – scalable legal framework for trusted data sharing
  – scalable technology approach – not “one-off” point-to-point solutions
Digital Bridge eCR Pilot: Michigan Site

Electronic Case Report Catcher

Referral

MDHHS (Public Health Agency)
Digital Bridge eCR Pilot: Non-Reportable

NetSmart EICR → Electronic Case Report Catcher → MiHIN

Referral → MDHHS (Public Health Agency)

This work made possible by funding from the Michigan Department of Health and Human Services.
Digital Bridge Pilot Results

• Michigan team completed pilot.
• Michigan met or exceeded pilot timelines.
• Michigan used health information exchange (HIE)/health information network (HIN) variation on eCR approach:
  – Supported ease of participation by EHR vendor (Netsmart) which already had relationship HIN and public health agency (Michigan Department of Health and Human Services [MDHHS]).
  – State of Michigan already recognized MiHIN as state-designated entity (SDE) for sending electronic public health data to state agencies.
  – Due to existing legal relationships (including business associate agreements already in place), organizations only had to sign brief one to two page pilot activity exhibit to participate with HIN.
  – No additional technical onboarding/connectivity – just new data.
An Alternative Approach
Expanding on Digital Bridge Pilot

• Michigan determined:
  – EHR adoption of eCR standard may limit provider ability to participate quickly.
  – **Mechanism needed to support providers whose EHRs do not yet produce eICRs.**
  – Electronic Initial Case Report (eICR) template is partial subset of Continuity of Care Document (CCD).
  – Majority of CCDs already flowing via HIN contain majority of eICR content.
  – Using CCDs to create eICRs at HIN is viable addition to eICR creation at EHR level.
  – Decided to use CCDs (from EHR) for eCR generation at HIN.
    • In addition to eICRs created by EHR at later date

• Other states, jurisdictions investigating similar alternative(s)
Unified eCR Approach

• **Unified approach** allows EHRs in process of adopting eCR standard to participate **now** because they can already create/send CCDs.

• EHRs unprepared to create eCRs can immediately rely on CCDs as mechanism for participation – *accelerating adoption*.

• Mechanism for using CCDs:
  
  • CCDs sent after every patient interaction are matched against Reportable Condition Trigger Codes (RCTCs) built into HIN environment to determine if eICR is needed.

  • If RCTC indicates eICR needed, eICR is created by extracting data from CCD.

  • eICR then follows same work flow as in pilot.
Phased Implementation

• Phase 1- simple
  – Work with MDHHS to identify subset of reportable condition trigger codes (RCTCs) known to be reportable.
  – Skip verification process and route all eICRs, with Reportability Response attached, to public health agency and back to EHR.

• Phase 2- more complex
  – For RCTCs that are not sufficient to verify reportability.
  – Use rules engine, Micro Verification Service™ (MVS), to assess whether it is a reportable condition or not.
  – Route message to participants accordingly.
Goals for Unified Approach

• Simplify technical ability for providers to participate.
  – If EHR has incorporated eCR standard and can send eICRs, or
  – May participate if EHR is producing and sending CCDs

• Reduce legal burdens to participate and scale rapidly.
  – Unlike basic approach to eCR participation, no separate legal agreement (BAA) needed with participants; rather, utilize statewide legal agreements already in place between providers, HIN and public health agency.

• Enable “connect once” capability and scalability.
  – Once connected to HIN (which is already connected to public health agency), there is no need for additional connections for different use cases.
  – Existing connection to statewide HIN is all that is needed. (!!)
Goals for Unified Approach (cont’d)

• Enable “report once” capability.
  – Once participants send CCD for one use case, they may participate in other use cases that use CCDs.
  – No duplication of effort or messaging

• Leverage best-in-class expertise.
  – HIN is available via Software-as-a-Service (SaaS) / web services with robust APIs making it easy to interoperate with external vendors.

• Accelerate time to market.
  – While awaiting EHR adoption of eCR standard, all Meaningful Use-certified EHRs can send CCDs on day one without months of new development required.
  – Allows public health agencies to begin receiving data immediately.
eICR Submission w/ Simple RCTC Match
CCD Submission w/ Simple RCTC Match

UNIFIED Case Report Catcher

Apply simple rules and add RR tag

Simple

Referral

Public Health Agency

This work made possible by funding from the Michigan Department of Health and Human Services
Copyright 2015-2018 Michigan Health Information Network Shared Services
CCD or eICR w/ Complex RCTC Match
Participation Value of Unified Approach

• Physicians can participate immediately in eCR if:
  – Already participating in statewide HIN or HIE (99 percent of physicians) and
    • EHR already producing eICRs, and/or
    • EHR already producing CCDs
  – Physicians use CCDs already required by MU, MACRA/MIPS.
  – Vendors not required to implement custom document standard.

• Simplifies adoption for physicians and vendors.
Technology Value of Unified Approach

• CCDs for other use cases can be leveraged for eCR.
  – No additional integration or export/import

• CCD re-use allows rapid solution deployment.

• SaaS model allows ‘Best in Class’ technology to support solution.
Scalability
TEFCA: Trusted Exchange Framework and Common Agreement

• What is it?
  – Trusted exchange framework refers to a set of policies, procedures, and technical standards to engender trust among entities, allowing for interstate exchange of electronic information.

• How is it structured? Two parts:
  – Part A: General principles that provide guardrails to engender trust between Health Information Networks (HINs)
  – Part B: Minimum set of terms and conditions to ensure common practices are in place for HINs

Before TEFCA: Duplication...
Before TEFCA: It’s worse...
After TEFCA (projected)

Qualified Health Information Network

Common Agreement

HIN Agreement
Minimum Terms & Conditions

Health Plan
Hospital
Provider Organization
Health Information Organization

CommonWell  HISP  Carequality

Copyright 2015-2018 Michigan Health Information Network Shared Services
Next Steps

• Engage stakeholders to increase participation.
• Collaborate with other jurisdictions to assist in achieving capability.
• Refine rules engine following state and national guidelines.
• Incorporate additional reportable conditions for state of Michigan and for other jurisdictions as needed.
• Evaluate other opportunities for leveraging infrastructure.
• Provide “lessons learned” insight on how to quickly and effectively participate in this valuable use case.
• Adapt TEFCA to Michigan legal and trust fabric operating since 2011.
Questions?

• Digital Bridge
  • info@digitalbridge.us
  • www.digitalbridge.us

• Jim Jellison, Public Health Informatics Institute
  • jjellison@phii.org
  • www.phii.org

• Jeff Livesay, Michigan Health Information Network
  • jeff.livesay@mihin.org
  • www.mihin.org

• **REMinDeR:** Please complete online session evaluation