Implementing eCR Through a Digital Bridge: The Public Health Experience

CSTE Annual Conference
June 5, 2017
What is the 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)
Organizational Structure

Governance Body

Governance Chair (John Lumpkin – Initial)

Health Care
- HealthPartners
- Kaiser Permanente
- Partners Healthcare

Public Health
- APHL
- ASTHO
- CSTE
- NACCHO
- CDC

Vendor
- Epic
- Meditech
- Allscripts
- Cerner
- eClinical Works

Program Management Office
- PHII
- Deloitte
- Ishikawa Associates

Ex Officio Members
- CDC
- ONC
- Deloitte
- PHII

Workgroups
Members of the governance body are divided into four small groups that each work on particular topics related to the Digital Bridge, including oversight of eCR implementations, evaluation of resources to expand the project nationwide, guidance on legal and regulatory issues, and counsel on the future of the Digital Bridge.
Digital Bridge Approach for eCR

• An interoperable, scalable, and multi-jurisdictional approach to eCR.

• Not a new technology product. The Digital Bridge approach is based on existing eCR tools and standards, and seeks to support their development and adoption.

• eCR is incorporated into the EHR as a background operation requiring little or no effort on the part of the clinical end user.

• The approach will be tested through seven implementation sites in 2017.

• The implementation sites’ technical solution will remain EHR vendor-agnostic so that any vendor can adopt the solution and pass on this functionality to their clients.
# eCR Site Participation

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<tr>
<th>Public Health Agency</th>
<th>Health Care Provider</th>
<th>EHR Vendor</th>
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<tbody>
<tr>
<td><strong>Wave 1</strong></td>
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<tr>
<td>Kansas</td>
<td>Lawrence Memorial Hospital</td>
<td>Cerner</td>
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| Michigan             | a) Local Public Health Clinics  
                        | b) McLaren Health Center     | a) NetSmart  
                        |                                      | b) HIE-MiHIN |
| Utah                 | Intermountain Healthcare | Cerner     |
| **Wave 2**            |                       |            |
| California           | UC Davis              | Epic       |
| Houston              | Houston Methodist     | Epic       |
| Massachusetts        | Partners HealthCare   | Epic       |
| New York City        | Institute of Family Health | Epic     |
eCR Process

Health Care:
- Import Trigger Codes
  - RCTC

Decision Support:
- Provide Trigger Codes
- Compare to Reporting Criteria
- Determine Reportability
- Validate Case Report
- Send Case Report

(RCTC)

Public Health:
- Define Reporting Criteria
- Process Case Report
- Process Response
- Send Case Report

(AIMS)

Validate Case Report

Electronic Lab Reporting

HL7 eICR

Follow-Up Activity

HL7 RR

STLT-specific reporting criteria
eCR Implementation Taskforce

Chairs:
Laura Conn (CDC)
Kirsten Hagemann (Cerner)
# Digital Bridge Implementation Timeline – Wave 1

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<th>Phase</th>
<th>March</th>
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<td>RCKMS Criteria Testing (Internal, Jurisdictional Criteria)</td>
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<td>Functional Testing (AIMS &amp; RCKMS Separate)</td>
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<td>Engagement With Implementation Sites</td>
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<td>RCKMS Training Complete</td>
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<td>AIMS Transport Onboarding (Transport &amp; Connection Setup)</td>
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<td>End-to-End Testing with Technical Architecture</td>
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<td>*Establish Post Production Technical Support Help</td>
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*Assumes correct legal and data sharing agreements are in place
Anticipated products

• Digital Bridge eCR implementation plan
• eCR onboarding documents for health care providers and public health agencies
• eCR implementation/configuration guide for EHR vendors
• Implementation site communications plan
• Test management plan
• Updated Digital Bridge requirements (as required)
• Updated Digital Bridge Technical Architecture Diagram (as required)
• Implementation Architecture Diagram
Evaluation Committee

Chair:
Jeff Engel (CSTE)

Facilitation Support:
MITRE Corporation
Evaluation Committee Deliverables

Deliverable 1 is the Evaluation Plan which, according to the charge, should include:

“...an evaluation purpose, goal, and objectives; description and justification for the selected evaluation approach; description of all data collection and analysis methods and tools; roles and responsibilities of all parties involved in collecting and providing evaluation data; estimates of the time and resources that implementation sites will be expected to dedicate to evaluation; and a timeline for evaluation activities—that shall include a milestone events for committee consultations and the delivery of a final report to the governance body by early-January 2018.”

• Deliverable 2 consists of the evaluation tools and will be delivered after the plan has been approved. Deliverable 2 should include:
  “Surveys, guides, and protocols that will be used to collect evaluation data.”

• Deliverables 3 and 4 are interim evaluation results (at least one verbal report) and final evaluation report, respectively.
What indicators can be used to assess eCR?

- **Completeness** – of RCTC mapping, case identification, eICR and RR content
- **Accuracy** – of RCTC mapping, RCKMS rules logic, case identification, and output (i.e. data quality)
- **Timeliness** – Degree and consistency with which electronic case reports and reportability responses are received when needed
- **Burden** – labor and cost
- Degree to which **output meets user needs**
- Degree to which **output is used**
- **Variation** across implementation sites in how the core elements are initiated and implemented
Legal and Regulatory Workgroup

Chair:
Walter Suarez (Kaiser Permanente)
eCR Overview

1. Public health agency loads its case reporting criteria into Decision Support Intermediary.

Public Health Agency

2. Decision Support Intermediary provides Health Care Providers with nationally consistent criteria for triggering potential case reports.

Decision Support Intermediary

3. Potential cases detected using nationally consistent trigger criteria optimized for sensitivity.

Health Care Provider

4. False positive cases filtered out by jurisdiction-specific public health reporting criteria optimized for specificity.

Public health case reports (true positives)

Jurisdiction-specific reporting criteria (input)

Nationally consistent trigger criteria (input)

Public health case reports (true positives & false positives)
Recommended Agreements Framework – Short term for initial implementation sites

- **BAA** = business associate agreement
- **DUA** = data use agreement
- **MOU** = memorandum of understanding
- **TPA** = trading partner agreement

**Public Health Agency**

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

**Decision Support Intermediary**

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

**Health Care Provider**

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

BAA & DUA - Decision Support Intermediary acts as a Business Associate of the Health Care Provider
Long-Term Strategy

During initial eCR implementations (aka “short-term”), Digital Bridge will also plan longer term strategy for legal and regulatory compliance:

- Increase acceptability among health care, governmental partners
- Increase scalability through reduction of point-to-point agreements
- Inform evolution of eCR technical architecture
- Will likely entail examining “trust networks”, e.g.:
  - Sequoia/eHealth Exchange (http://sequoiaproject.org/ehealth-exchange/)
  - DirectTrust (https://www.directtrust.org/)
Strategy Workgroup

Chairs:
Mary Ann Cooney (ASTHO)
Rich Paskach (HealthPartners)
Anticipated products

• Digital Bridge Roadmap
  • Showcases the “big picture” plan
  • Defines use cases beyond eCR

• Digital Bridge Sustainability Plan
  • Digital Bridge 2-5 year operating model, governance structure, and funding model

• eCR Sustainability Plan
  • Addressing the future sustainability of eCR to inform public and private decisions regarding policy, strategic planning, infrastructure and technology investments
Digital Bridge Strategy Meeting Update

• Reaffirmed the spirit and commitment to the Digital Bridge vision statement

• Worked to celebrate the progress made so far and began to think through how we can leverage that progress into long-term sustainability and success

• Identified the desire for Digital Bridge to continue beyond eCR and thus the need to develop long-term by-laws for the governance body
Stakeholder Participation and Communications

• We value the input of a diverse audience. Dialogue is encouraged with governance body representatives. Feedback and questions can also be sent to info@digitalbridge.us

• The Digital Bridge intends to be transparent. See www.digitalbridge.us for:
  • Workgroup updates, completed products and resources
  • Governance meeting notes and slides
  • Upcoming events and news
  • Mail list sign-up

• Upcoming presentation: NACCHO Annual Conference July 11-13
Parting Thoughts

- One Public Health
- Meaningful Use Stage 3 Readiness
- Meet the providers, vendors where they are at
  - Clinical data repositories
  - Clinical decision support platforms
Thank you!

For updates: www.digitalbridge.us

For questions and input: info@digitalbridge.us
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<tr>
<th>Digital Bridge Baseline</th>
<th>Utah</th>
<th>Kansas</th>
<th>Michigan – Traditional</th>
<th>Michigan - Alternative</th>
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<tr>
<td><strong>HCP → AIMS</strong></td>
<td>• EHR system sends eICR to AIMS through Secure Transport</td>
<td>• iCentra sends the eICR to AIMS using XDR</td>
<td>• Cerner Millennium sends the eICR to AIMS using XDR</td>
<td>• Transport mechanism VPN</td>
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<td>• MiHIN validates eICR before sending to AIMS</td>
<td>• Transport mechanism VPN</td>
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<td>• MiHIN applies RCTC for reportability before sending to AIMS</td>
<td>• MiHIN creates eICR from a Care Summary CCD</td>
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<td>• MiHIN creates eICR before sending to AIMS</td>
<td>• MiHIN validates eICR before sending to AIMS</td>
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<td><strong>AIMS → PH</strong></td>
<td>• AIMS returns the validated eICR and Reportability Response to PH</td>
<td>• EMSA interfaces between AIMS and PH for eICR via PHINMS and routing information</td>
<td>• The transport flow is: AIMS to PHINMS stand alone server to Rhapsody to Mirth to EMSA</td>
<td>• Transport mechanism VPN</td>
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<td>• EpiTrax creates a case and connects to EMSA through RESTful webservices</td>
<td>• EMSA interfaces to EpiTrax for eICR and routing information</td>
<td>• AIMS directs all responses to PH through MiHIN</td>
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<td>• EMSA, based on configuration, sends to EpiTrax for case creation</td>
<td>• EMSA, based on configuration, sends to EpiTrax for case creation</td>
<td>• MiHIN routes any Reportability Responses to HCP</td>
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