Transforming Health through a Digital Bridge

Date
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

• Governance funded by the Robert Wood Johnson Foundation and the de Beaumont Foundation. Project management provided by Deloitte Consulting and the Public Health Informatics Institute.

• Initial focus: electronic case reporting (eCR), leveraging investments made by APHL, CSTE and CDC.
Organizational Structure

DIGITAL BRIDGE GOVERNANCE BODY

Governance Chair
John E. Camplese, M.D.

Health Care Delivery Networks
- HealthPartners (Richard Roszkowski)
- Kaiser Permanente (Melvin Groessig)
- Partners Healthcare (Andy Karonse)

Health IT Vendors
- Epic (James Donley)
- Meditech (Van Murl)
- Allscripts (Richard Melling)
- Cerner (Bob Harrison)
eClinical Works (Tatiana Melkova)

Public Health
- APHL (Jill Kier)
- ASTHO (Marc H. Leven)
- CSTE (Cathy Lunce)
- NACCHO (Omar Alleyne)
- CDC (Bil McKinnon)

Ex Officio
- RWJF
- de Beaumont Foundation (Brian Castelli)
- PHI (Mark English)
- Deloitte (Andy Wenszell)
- ONC (Don Chadwick)
- CDC (Cherri Bichowsky)

PROGRAM MANAGEMENT OFFICE
- PHI
- Deloitte
- Ishikawa Assoc.

DIGITAL BRIDGE WORKGROUPS*

*Workgroups are chaired by the governance body, led by primary or alternate governance body representatives, and constituted of members that are appointed by governance body participants.
Benefits to the Digital Bridge Approach

• A unified approach to information exchange eases the burden and costs for all stakeholder groups.

• Lays the foundation for greater bidirectional exchange. Clinicians will be easily informed about population health, environmental risks and outbreaks.

• Bidirectional data exchange can eventually encompass non-communicable diseases.
Electronic Case Reporting (eCR)
The automated generation and transmission of case reports from the electronic health record (EHR) to public health agencies for review and action.
How eCR Works

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 records trigger an electronic initial 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
The provider can choose to receive guidance on patient care and outbreak response from public health.
Digital Bridge is implementing electronic case reporting across states and cities.
Value of Electronic Case Reporting (eCR)

• More complete, accurate data in real time for action
• Early detection of cases allows
  • Earlier intervention
  • Diminished transmission of disease
• Improves detection of outbreaks
• Responds directly to local and state partner needs
• Diminishes burden on health care provider to report
• Directly links health care to population health
Digital Bridge eCR Approach
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 with six implementation sites through 2018.
- 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 Implementation Sites
## eCR Site Participation

<table>
<thead>
<tr>
<th>Public Health Agency</th>
<th>Health Care Provider</th>
<th>EHR Vendor</th>
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<tbody>
<tr>
<td>California</td>
<td>UC Davis</td>
<td>Epic</td>
</tr>
<tr>
<td>Houston</td>
<td>Houston Methodist</td>
<td>Epic</td>
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<tr>
<td>Kansas</td>
<td>Lawrence Memorial Hospital</td>
<td>Cerner</td>
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<tr>
<td>Massachusetts</td>
<td>TBD</td>
<td>Epic</td>
</tr>
<tr>
<td>Michigan</td>
<td>Barry Eaton LHD</td>
<td>NetSmart/HIE-MiHIN</td>
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<tr>
<td>New York City</td>
<td>Institute of Family Health</td>
<td>Epic</td>
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<tr>
<td>New York State</td>
<td>SUNY Health Science Center at Syracuse (Upstate)</td>
<td>Epic</td>
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<tr>
<td>Utah</td>
<td>Intermountain Healthcare</td>
<td>Cerner</td>
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</table>
Site Participation

• Sites will support five conditions initially: chlamydia, gonorrhea, pertussis, salmonellosis, and Zika virus infection.

• Participating sites will participate in eCR evaluations.

• Any public health agency participating in eCR outside of Digital Bridge is encouraged to continue to do so.
# Current Site Status

<table>
<thead>
<tr>
<th>Activities</th>
<th>MI</th>
<th>UT</th>
<th>CA</th>
<th>KS</th>
<th>NYC</th>
<th>MA</th>
<th>NYS</th>
<th>HOU</th>
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<tbody>
<tr>
<td>Site Development Activities</td>
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<td>Onboarding</td>
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<td>End to End Testing</td>
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<tr>
<td>Legal Readiness</td>
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- **Completed**
- **In Progress**
- **Not Started**
- **Not Currently Applicable**

*FOR DISCUSSION USE ONLY – June 28, 2018*
Legal and Regulatory Activities
Legal Approach

• In 2017, Digital Bridge engaged Davis Wright Tremaine (DWT) LLP with support from the Robert Wood Johnson Foundation.
  • Collective clients include
    • Association of Public Health Laboratories (APHL)
    • Robert Wood Johnson Foundation (RWJF)
    • Task Force for Global Health (TFGH) /Public Health Informatics Institute (PHII)
• DWT and their clients reached consensus that the DSI* acting as a business associate of the health care provider (or HIE) is appropriate for short- and medium-term eCR rollout (as of Jan. 4, 2018).

DSI* - decision support intermediary (AIMS platform hosted by APHL with RCKMS application supported by CSTE)
The Decision Support Intermediary consists of the APHL Informatics Messaging Services (AIMS) platform, supported by the Association of Public Health Laboratories, and the Reportable Conditions Knowledge Management System (RCKMS), supported by the Council of State and Territorial Epidemiologists.
Draft Legal Agreements

• Pilot participation agreement
  • Agreement between pilot health care provider or HIE (a participant) and APHL
  • Provides legal framework for pilot sites to enable transmission of protected health information to APHL, and, if elected, for APHL to transmit those data to public health authorities in accordance with applicable law on participant’s behalf
  • Makes explicit that pilot project only includes a subset of all reportable conditions

• Business associate agreement
  • Also an agreement between participant and APHL
  • Accounts for requirements as defined by HIPAA (e.g., permitted uses and disclosures, additional obligations of APHL, breach reporting, ownership of information)
Long-Term Strategy

During initial eCR implementations (aka “short-term”), Digital Bridge will also plan long-term strategies 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/)
Evaluation Committee
Implementation Evaluation Goals

• Identify and describe the overall processes by which the sites initiated and implemented eCR and the various influencing factors

• Determine eCR functioning and performance in terms of:
  • System/core component functionality and performance
  • Case reporting quality and performance (completeness, accuracy, timeliness)

• Identify the resources needed to initiate and implement an eCR system

• Identify the potential value and benefits of eCR to stakeholders
Evaluation Highlights

• Mixed methods approach to data collection that includes key informant interviews and quantitative analysis

• Evaluation committee consists of members of the governance body or their appointees

• Evaluation committee participates in a collaborative process to:
  • Interpret findings and develop answers to the evaluation questions and reach overall conclusions about the value of the Digital Bridge eCR approach.
  • Identify and report on unintended or unexpected processes, outcomes and side effects of the eCR approach.

• Final deliverable to the Digital Bridge governance body is an evaluation report
Strategy and Sustainability
Strategy and Sustainability

• Developed Digital Bridge roadmap that outlines major milestones and plans for upcoming phases.

• Developed a Digital Bridge sustainability plan that includes recommendations for robust business and financial models to support long-term sustainment.

• Developed a framework to determine the next use case for Digital Bridge.

• Finalizing a Digital Bridge ROI model.
Stakeholder Participation and Resources

• 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
Thank you!

For updates: www.digitalbridge.us

For questions and input: info@digitalbridge.us
Additional Slides for Reference
Workgroup Activities (2018)

- **eCR implementation workgroup**: oversees eCR implementation and determines if sites have met the reportable conditions business requirements.

- **Evaluation committee**: assesses resources needed for nationwide expansion and measures outcomes of the project to recommend improvements.

- **Legal workgroup**: identifies and defines alternative legal approaches to eCR and advises the legal SMEs.

- **Pilot participation workgroup**: provides oversight, facilitation and support for the participants who transmit electronic initial case reports as part of the Digital Bridge pilot.

- **Strategy workgroup**: devises strategic goals and objectives on the future of Digital Bridge and its services and recommends strategies.
Additional Info on eCR Process

- Current model: Reportable Conditions Trigger Codes (RCTC), Reportable Conditions Knowledge Management System (RCKMS) work in tandem to identify potentially reportable cases

<table>
<thead>
<tr>
<th>Function</th>
<th>RCTC (&quot;trigger codes&quot;)</th>
<th>RCKMS (&quot;decision support&quot;)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preliminary event identification; Set of codes to determine subset of patient encounters that require further evaluation</td>
<td>Secondary event assessment; Determines if the eICR data represent a reportable event and to which jurisdiction(s)</td>
<td></td>
</tr>
<tr>
<td>Location implemented</td>
<td>Within local EHR environment</td>
<td>Centrally hosted as an application on the AIMS platform (i.e., a component of the decision support intermediary)</td>
</tr>
<tr>
<td>Input</td>
<td>Patient data (e.g., diagnoses, lab orders) in EHR</td>
<td>eICR; case reporting criteria authored by public health jurisdictions</td>
</tr>
<tr>
<td>Output</td>
<td>If patient data matches any code within the RCTC list, EHR creates an eICR (electronic initial case report) and sends to RCKMS</td>
<td>If eICR meets a jurisdiction’s reporting criteria, eICR routed to public health</td>
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</table>
## Digital Bridge Accomplishments and Forecast

<table>
<thead>
<tr>
<th>2016</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
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<tbody>
<tr>
<td>• Established vision</td>
<td>• Formed initial workgroups</td>
<td>• Established additional workgroups</td>
<td>• Continue coordinating eCR implementations</td>
</tr>
<tr>
<td>• Created project charter</td>
<td>• Developed functional requirements and technical architecture</td>
<td>• Began coordinating eCR implementations to launch beginning late 2018</td>
<td>• Complete evaluations of initial implementation sites</td>
</tr>
<tr>
<td>• Formed governance body</td>
<td>• Created initial sustainability plan and communications plan</td>
<td>• Developed legal agreements for initial pilot sites</td>
<td>• Develop recommendations to scale eCR nationally</td>
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<tr>
<td></td>
<td>• Shared preliminary legal recommendations</td>
<td>• Held second successful in-person governance body meeting</td>
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<tr>
<td></td>
<td>• Selected eCR implementation sites</td>
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<tr>
<td></td>
<td>• Held first successful in-person governance body meeting</td>
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