EHR Design for Promoting Population Health Management

What Can Health Care Learn from Other Industries?
144 Billion Non-Cash Financial Transactions per year
Financial Industry has made the leap from paper to high tech automation

• Over 274,000 transactions per minute
  • Machine to Machine transactions
  • Machine to Person
  • Person to Person
• Standardized
• Interoperable
• Secure
• Highly reliable
Population Health Has to Take a Similar Journey

- Paper Records
- Fax Machines
- E-Portals
- ELR’s
- Automated, Interoperable & secure transfers
digital bridge

Transforming Health through a Digital Bridge
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)
Participating Organizations

- Allscripts
- APHL
- astho
- CDC
- Cerner
- CSTE
- eClinicalWorks
- Epic
- HealthPartners Park Nicollet
- Kaiser Permanente
- MEDITECH
- NACCHO
- Partners HealthCare

Funders

- Robert Wood Johnson Foundation
- de Beaumont Foundation
- Deloitte
- Public Health Informatics Institute

Project Management Office
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.
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 Electronic Case Reporting 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 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.
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 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.
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.
eCR Project Timeline

**Governance** Coordinate Workgroups (WGs) and Engage Stakeholders

- **2017 Q1**: 2nd Use Case Ideas
- **2017 Q2**: Transition Plan
- **2017 Q3**: 1. In-Person Mtg. 2. Approve 2nd Use Case

**Sustainability WG** Strategy Working Group

- **2017 Q1**: Digital Bridge Roadmap
- **2017 Q2**: Submit Digital Bridge and eCR Sustainability Plans to Gov. Body

**Legal WG** Legal and Regulatory Workgroup

- **2017 Q1**: Template Agreements
- **2017 Q2**: Sites Execute Agreements
- **2017 Q3**: eCR Legal Framework
- **2017 Q4**: Document Lessons Learned

**Technical Arch WG** Implementation Task Force

- **2017 Q1**: Wave 1 AIMS Onboarding
- **2017 Q2**: Wave 1 eCR Production Exchange
- **2017 Q3**: Wave 1 eCR Framework Template Agreements

**Evaluation Committee**

- **2017 Q4**: Evaluation Plan
- **2018 Q1**: Preliminary Wave 1 Evaluation

**Requirements WG**

- **2017 Q1**: Ongoing Curation of Functional Requirements
- **2017 Q2**: Functional Requirements Refined

**Notes**

- REV 8/28/17
Thank you!

For updates: www.digitalbridge.us
For questions and input: info@digitalbridge.us
Additional Slides for Reference
Workgroup Activities
Workgroup Activities (2017)

• **Implementation task force**: 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 and regulatory workgroup**: identifies and defines alternative technical and legal approaches to eCR and advises the legal SME in work.

• **Strategy workgroup**: devises strategic goals and objectives on the future of Digital Bridge and its services and recommends strategies.
Legal and Regulatory Workgroup
eCR Overview

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

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

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

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

Public Health Agency

Decision Support Intermediary

Health Care Provider

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 (will evolve)

BAA = business associate agreement
DUA = data use agreement
MOU = memorandum of understanding
TPA = trading partner agreement
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
Strategy Workgroup Activities

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

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

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

• Finalizing a Digital Bridge ROI model.
eCR Implementation Sites
# 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>Kansas</td>
<td>Lawrence Memorial Hospital</td>
<td>Cerner</td>
</tr>
<tr>
<td>Michigan</td>
<td>Local Public Health Clinics</td>
<td>NetSmart/HIE-MiHIN</td>
</tr>
<tr>
<td>Utah</td>
<td>Intermountain Healthcare</td>
<td>Cerner</td>
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<tr>
<td>California</td>
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<td>Epic</td>
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<td>Houston</td>
<td>Houston Methodist</td>
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<tr>
<td>Massachusetts</td>
<td>Partners HealthCare</td>
<td>Epic</td>
</tr>
<tr>
<td>New York City</td>
<td>Institute of Family Health</td>
<td>Epic</td>
</tr>
</tbody>
</table>
Site Participation

- Sites will support five conditions initially: pertussis, gonorrhea, chlamydia, salmonellosis, and Zika.
- 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.
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
Additional Slides for Reference
### Digital Bridge Accomplishments

<table>
<thead>
<tr>
<th>Phase I</th>
<th>Phase II</th>
<th>Phase III</th>
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<tbody>
<tr>
<td>• Established vision</td>
<td>• Formed distinct workgroups</td>
<td>• Established new workgroups (implementation taskforce, evaluation committee, strategy workgroup and legal and regulatory)</td>
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<tr>
<td>• Created project charter</td>
<td>• Developed functional requirements and a technical architecture diagram</td>
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<tr>
<td>• Formed governance body</td>
<td>• Created initial sustainability plan and communications plan</td>
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<td></td>
<td>• Shared preliminary legal recommendations</td>
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<tr>
<td></td>
<td>• Selected seven eCR implementation sites</td>
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<td></td>
<td>• Held first successful in-person governance body meeting</td>
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