



# Transforming Health through a Digital Bridge

Date

# What is Digital Bridge?

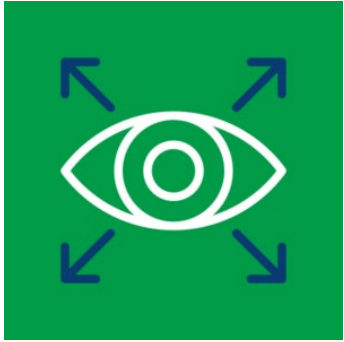
- A partnership of health care experts, industry partners and public health professionals
  - Goal is to ensure our nation's health through a bidirectional information flow between health care and public health
  - A forum for sharing ideas
  - An incubator for growing projects that meet this vision
- Governance funded by the Robert Wood Johnson Foundation and the de Beaumont Foundation. Project management provided by Deloitte Consulting, Kahuina Consulting and the Public Health Informatics Institute.
- Initial focus: electronic case reporting (eCR), leveraging investments made by APHL, CSTE and CDC.

# 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.



# Governance Principles



*Transparency*



*Respect for  
Process*



*Outreach*



*Utility*



*Representativeness*



*Trust*

# Governing Organizations

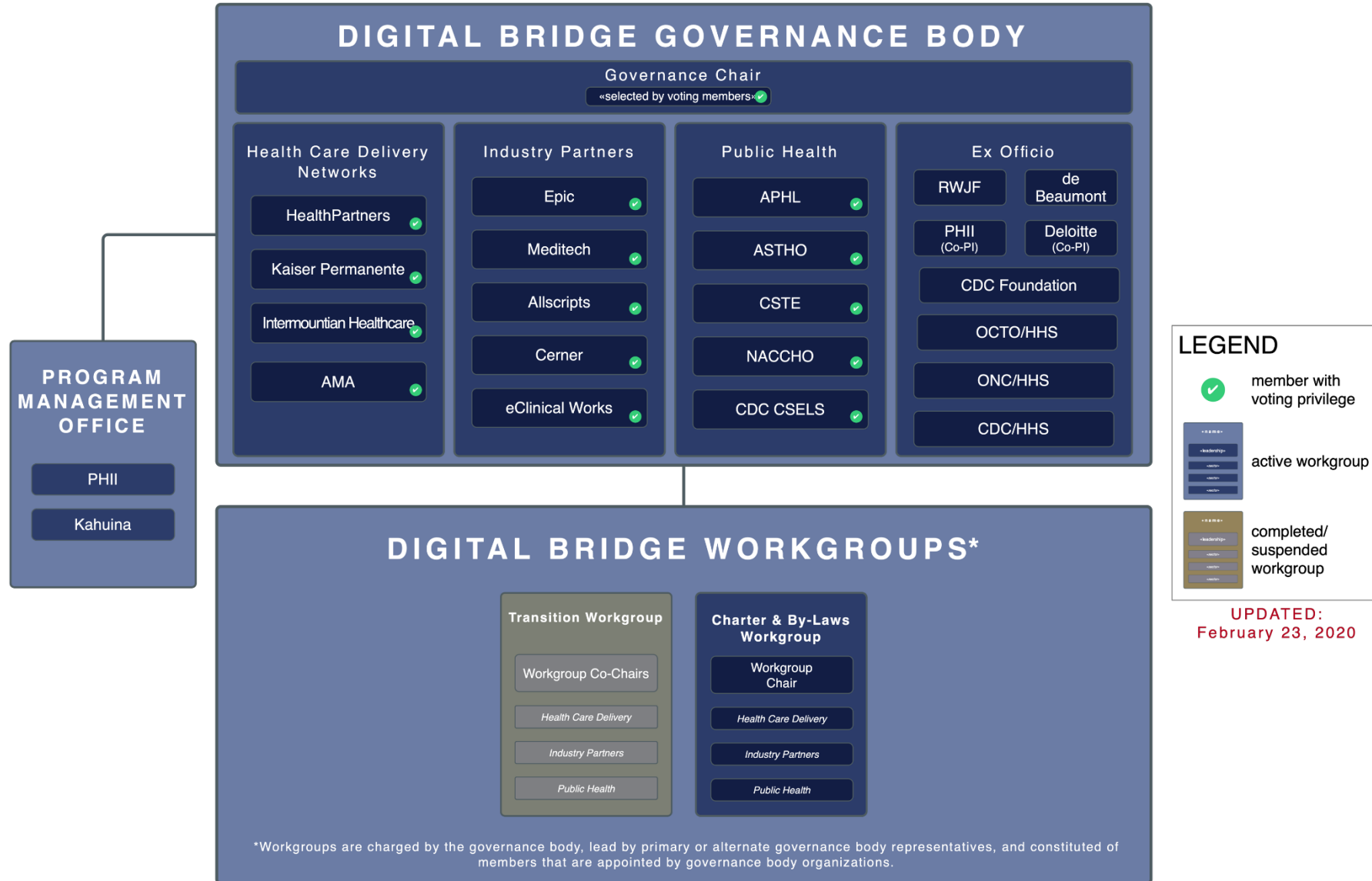


# Funders



# Project Management Office





# Digital Bridge eCR Approach

## **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.



## 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 initial demonstration sites through 2019.
- 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.

# 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

# 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 (eICR) 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.

# eCR Implementation Sites



# eCR Site Participation

Public Health Agency	Health Care Provider	EHR Vendor
California	UC Davis	Epic
Houston	Houston Methodist	Epic
Kansas	Lawrence Memorial Hospital	Cerner
Massachusetts	TBD	Epic
Michigan	Calhoun County LHD	NetSmart/HIE-MiHIN
New York City	Institute of Family Health	Epic
New York State	SUNY Health Science Center at Syracuse (Upstate)	Epic
Utah	Intermountain Healthcare	Cerner

## Site Participation

- Sites can support six conditions: chlamydia, gonorrhea, pertussis, salmonellosis, the Zika virus infection and hepatitis C.
- Sites will participate in eCR evaluations.
- Any public health agency participating in eCR outside of Digital Bridge is encouraged to continue to do so.

# Legal Frameworks for eCR Services

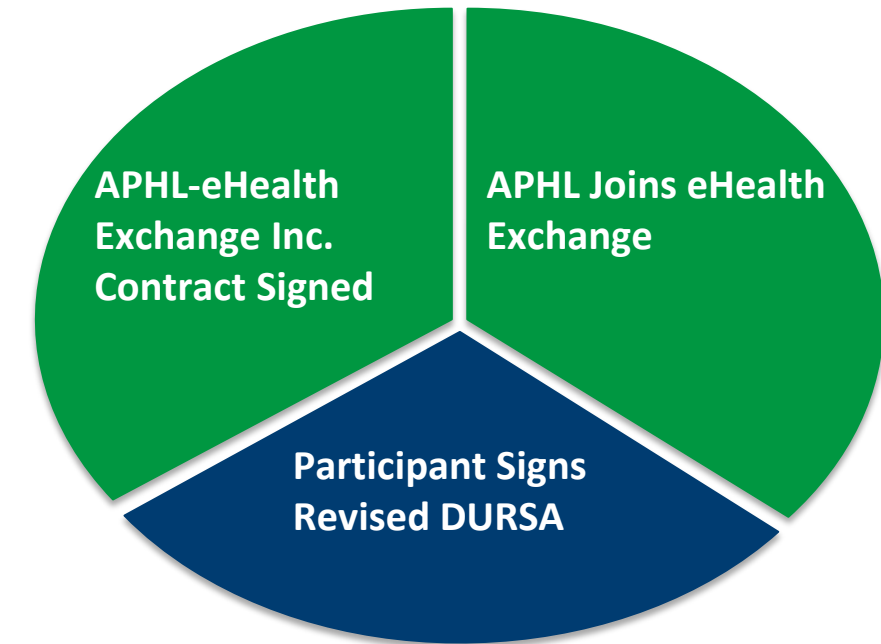


# Legal Approach Background

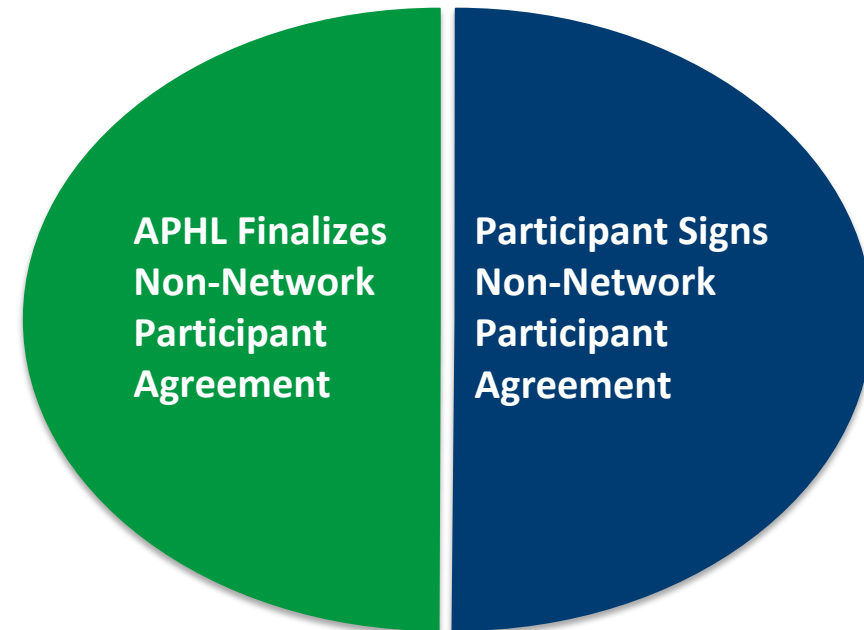
- Existing jurisdictional laws, policies and regulations stipulate the entities that must report conditions of public health concern to appropriate authorities
  - Requires health care providers to share certain protected health information with public health authorities
  - eCR approach leverages a centralized, decision support intermediary (DSI\*) that is neither a health care provider nor a public health authority, but facilitates data exchange between the two
    - Creates need for a legal framework that allows DSI to obtain and use PHI
- In 2018, stakeholders agreed that the DSI acting as a business associate of health care providers or health information exchanges was most appropriate for eCR rollout, given available technologies

# Options for eCR Legal Onboarding

**Option 1. Access eCR Services via eHealth Exchange (“Network Approach”)**



**Option 2. Access eCR Services via Non-Network Participant Agreement with APHL (“Non-Network Approach”)**



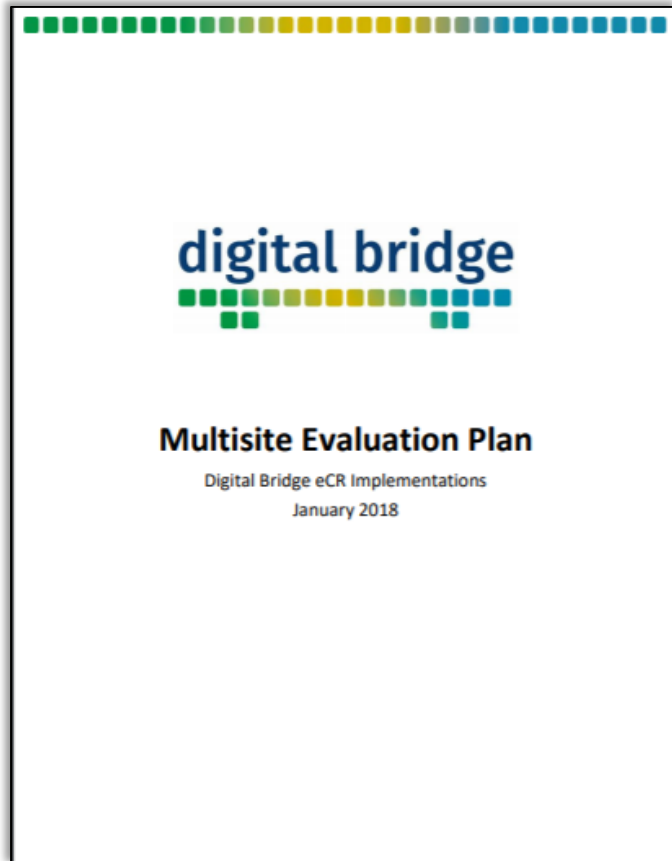
# Evaluation Committee



## Evaluation Highlights

- Evaluation committee completed key informant interviews with the Houston and Utah site partners for insight on the implementation process. Common feedback included:
  - **Communication** via regular workgroup calls is valuable
  - Potential for **more secure** data entry compared to ELRs
  - Challenges with **knowledge acquisition** due to staff turnover
  - Automation could **improve overall back-end efficiency** and timeliness
  - **Gathering key partners** to troubleshoot infrastructure was helpful

# Evaluation Resources



**Multisite Evaluation Plan:**  
<https://bit.ly/2O8WbHo>

**Evaluation Accountability: Why Share Early Artifacts of an Evaluation** by Goldie MacDonald and Jeff Engel

1 Comment / Health Evaluation / By Sheila Robinson / January 18, 2019

Hello, we're **Goldie MacDonald**, Associate Director for Evaluation in the Center for Surveillance, Epidemiology, and Laboratory Services at the Centers for Disease Control and Prevention and **Jeff Engel**, Executive Director of the Council of State and Territorial Epidemiologists. We co-chair the Digital Bridge Evaluation Committee comprised of professionals from state and local health departments, federal and non-governmental organizations, and the private sector.

*Better a diamond with a flaw than a pebble without.*

—Proverb

In many organizations, it's easier to access evaluation reports than evaluation plans, especially as personnel or priorities change. Evaluation plans are usually shared with primary stakeholders, but not always disseminated widely. For example, some plans are not available because the content is sensitive or not user-friendly. Nonetheless, sharing an evaluation plan widely can contribute to transparency and richer discussions about evaluation quality earlier in the evaluation process.

One example of sharing an evaluation plan well-beyond primary stakeholders is the Digital Bridge (DB) multisite evaluation led by the Public Health Informatics Institute. DB convenes decision makers in health care, public health, and health information technology to address shared information exchange challenges. DB stakeholders developed a multi-jurisdictional approach to **electronic case reporting (eCR)** in demonstration sites nationwide. These sites aim to automate transmission of case reports from electronic health records to public health agencies. eCR can result in earlier detection of health-related conditions or events of public concern, more timely intervention, and lowered disease transmission.

**AEA 365 Blog:**  
<https://bit.ly/2UUXr35>

**Get Involved**

# 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](mailto:info@digitalbridge.us)
- Digital Bridge intends to be transparent. See [www.digitalbridge.us](https://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](http://www.digitalbridge.us)

For questions and input: [info@digitalbridge.us](mailto: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.
- **Pilot participation workgroup:** provides oversight, facilitation and support for the participants who transmit electronic initial case reports as part of the Digital Bridge demonstration.
- **Legal workgroup:** identifies and prepares responses to proposed rules from federal agencies relevant to multi-sector health data exchange.
- **Strategy workgroup:** devises strategic goals and objectives on the future of Digital Bridge and its services and recommends strategies.
- **Technical architecture workgroup:** defines technical requirements for electronic case reporting and develops a technical framework to receive electronic case reports.



# 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

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

# Digital Bridge Accomplishments and Forecast

2016	2017	2018	2019
<ul style="list-style-type: none"> <li>Established vision</li> <li>Created project charter</li> <li>Formed governance body</li> </ul>	<ul style="list-style-type: none"> <li>Formed initial workgroups</li> <li>Developed functional requirements and technical architecture</li> <li>Created initial sustainability plan and communications plan</li> <li>Shared preliminary legal recommendations</li> <li>Selected eCR implementation sites</li> <li>Held first successful in-person governance body meeting</li> </ul>	<ul style="list-style-type: none"> <li>Established additional workgroups</li> <li>Began coordinating eCR implementations to launch beginning late 2018</li> <li>Developed legal agreements for initial pilot sites</li> <li>Held second successful in-person governance body meeting</li> <li>Houston and Utah become the first two demonstration sites to go live</li> </ul>	<ul style="list-style-type: none"> <li>Continue coordinating eCR implementations</li> <li>Complete evaluations of initial implementation sites</li> <li>Develop recommendations to scale eCR nationally</li> </ul>