digital bridge

Transforming Health through a Digital Bridge

Presentation to the International Society for Disease Surveillance

Friday, July 20th, 2018

12:00-1:30 PM ET

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)

Governing Organizations

Allscripts

APHL

astho™

CDC
Centers for Disease Control and Prevention

Cerner

CSTE
Council of State and Territorial Epidemiologists

eClinicalWorks

Epic

HealthPartners
Park Nicollet

KAISER PERMANENTE®

MEDITECH

NACCHO
National Association of County & City Health Officials
The National Connection for Local Public Health

Connecting America for Better Health
The Office of the National Coordinator for Health Information Technology

PARTNERS HEALTHCARE

Funders

Robert Wood Johnson Foundation

de Beaumont FOUNDATION

Project Management Office

Deloitte.

Public Health Informatics Institute

Organizational Structure

Sharing data to improve clinical care and public health. digitalbridge.us

DIGITAL BRIDGE GOVERNANCE BODY

Governance Chair
John Lumpkin, RWJF ✔

Health Care Delivery Networks	Health IT Vendors	Public Health	Ex Officio
HealthPartners (Richard Paskach) ✔	Epic (James Doyle) ✔	APHL (Scott Becker) ✔	RWJF
Kaiser Permanente (Walter Suarez) ✔	Meditech (Joe Wall) ✔	ASTHO (Mary Ann Cooney) ✔	de Beaumont Foundation (Brian Castrucci)
Partners Healthcare (Michael Klompas) ✔	Allscripts (Richard Hornaday) ✔	CSTE (Kathy Turner) ✔	PHII (Vivian Singletary)
	Cerner (Bob Harmon) ✔	NACCHO (Oscar Alleyne) ✔	Deloitte (Andy Wiesenthal)
	eClinical Works (Tushar Malhotra) ✔	CDC (Bill Mac Kenzie) ✔	ONC (Dan Chaput)
			CDC (Chesley Richards)

PROGRAM MANAGEMENT OFFICE

- PHII
- Deloitte
- Kahuina Consulting

DIGITAL BRIDGE WORKGROUPS*

eCR Implementation Workgroup	Evaluation Committee	Pilot Participation Workgroup	Legal & Regulatory Workgroup	Strategy Workgroup
Workgroup Co-Chairs	Workgroup Chair	Workgroup Chair	Workgroup Chair	Workgroup Co-Chairs
Health Care Delivery	*Health Care Delivery*	*Health Care Delivery*	*Health Care Delivery*	*Health Care Delivery*
Health IT Vendors	*Health IT Vendors*	*Health IT Vendors*	*Health IT Vendors*	*Health IT Vendors*
Public Health	*Public Health*	*Public Health*	*Public Health*	*Public Health*

*Workgroups are charged by the governance body, lead by primary or alternate governance body representatives, with members that are appointed by governance body organizations.

LEGEND

- ✔ member with voting privilege
- active workgroup
- completed/inactive workgroup

UPDATED: July 19, 2018

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 (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.

Value of Electronic Case Reporting (eCR)

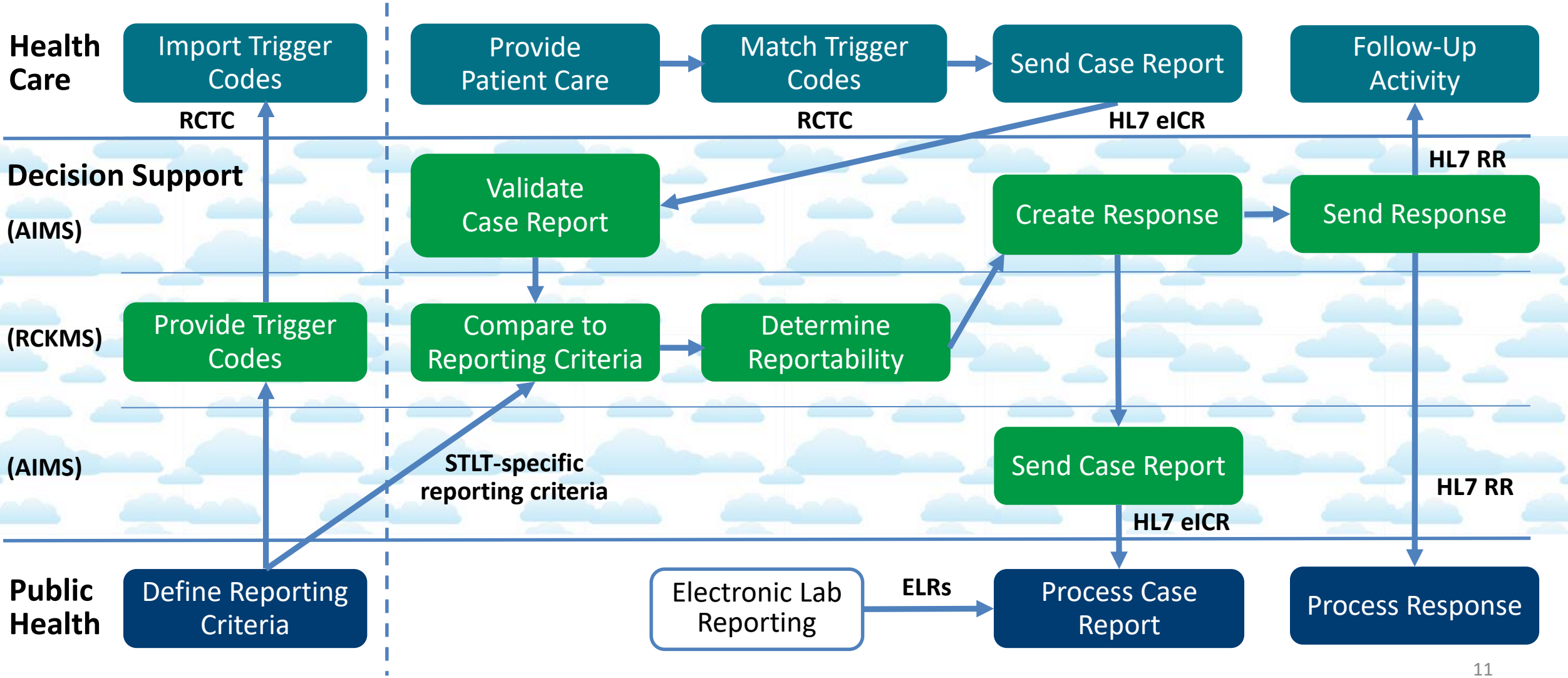
- More complete, accurate data in real time for action
- Early detection of cases allows
  - Earlier intervention
  - Diminished transmission of disease
- Improves detection of outbreaks
- Responds directly to local and state partner needs
- Diminishes burden on health care provider to report
- Directly links health care to population health

Digital Bridge 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 pilot 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.

Technical and Legal Approach

eCR Process

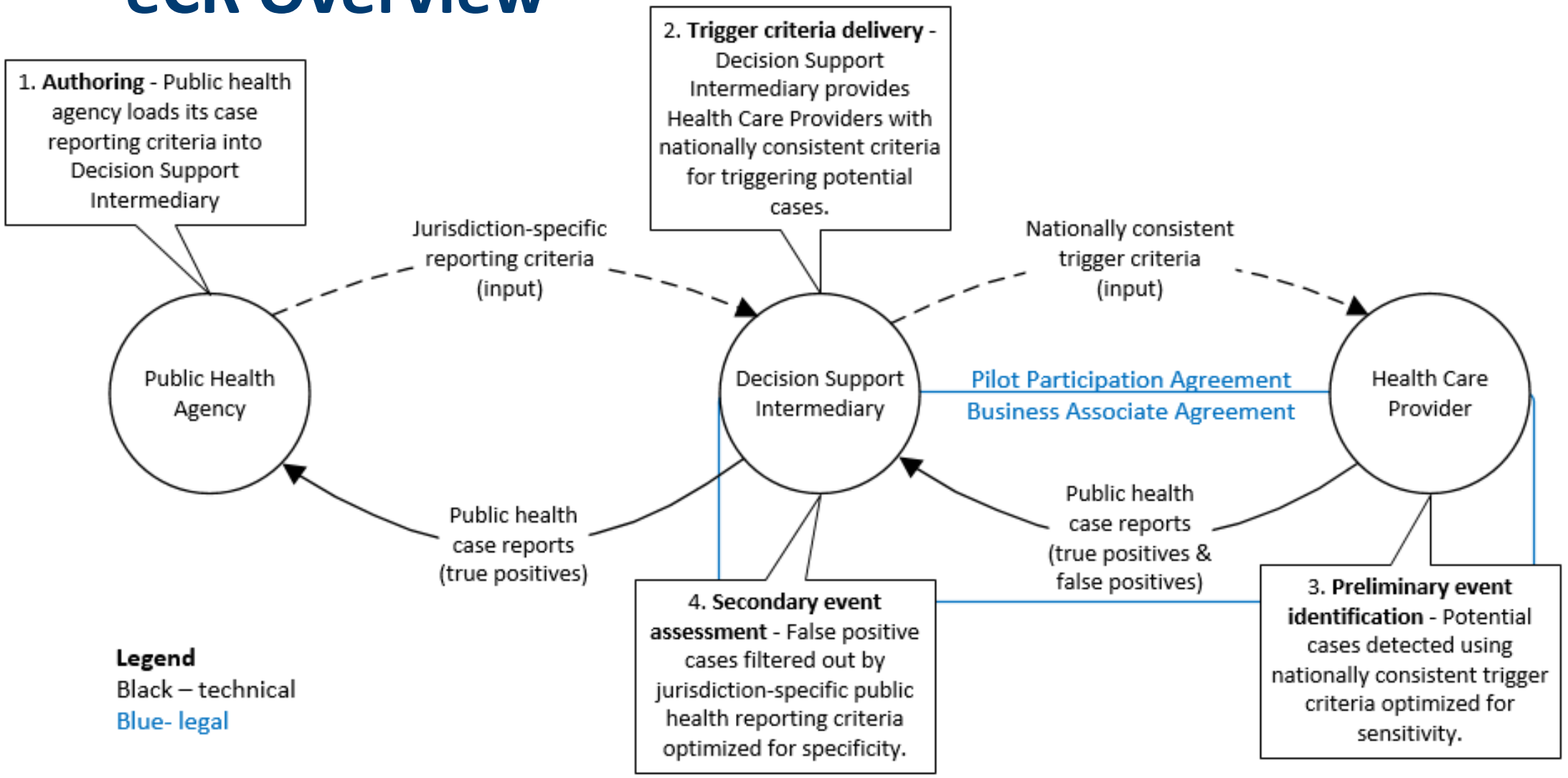

Health Care
Import Trigger Codes
Provide Patient Care
Match Trigger Codes
Send Case Report
Follow-Up Activity
RCTC
RCTC
HL7 eICR
HL7 RR
Decision Support
(AIMS)
Validate Case Report
Create Response
Send Response
(RCKMS)
Provide Trigger Codes
Compare to Reporting Criteria
Determine Reportability
(AIMS)
STLT-specific reporting criteria
Send Case Report
HL7 RR
HL7 eICR
Public Health
Define Reporting Criteria
Electronic Lab Reporting
ELRs
Process Case Report
Process Response

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)

eCR Overview



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/)

Implementation and Evaluation

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	Partners HealthCare	Epic
Michigan	Local Public Health Clinic	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

Digital Bridge is implementing electronic case reporting across states and cities.

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

Activities	MI	UT	CA	KS	NYC	MA	NYS	HOU
Site Development Activities								
Onboarding								
End to End Testing								
Legal Readiness								

Completed
In Progress
Not Started
Not Currently Applicable

FOR DISCUSSION USE ONLY – June 28, 2018

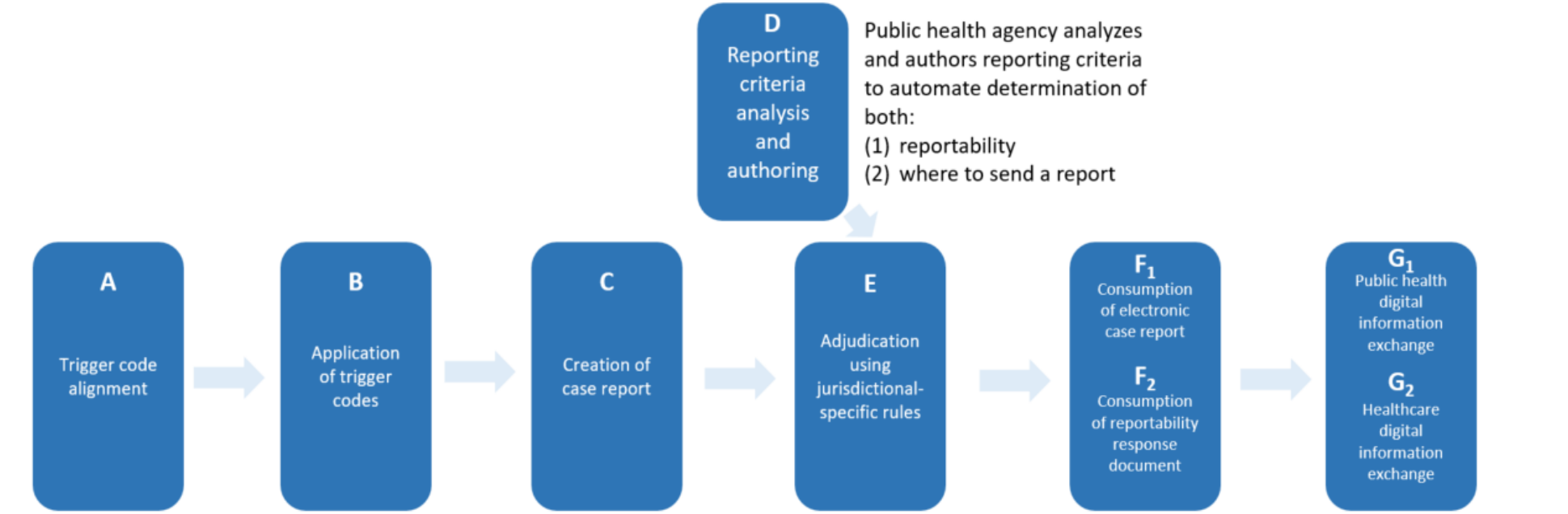
Evaluation Highlights

- 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
  - 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

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
- Identify the resources needed to initiate and implement an eCR system
- Identify the potential value and benefits of eCR to stakeholders

Evaluation of Core Component of Digital Bridge eCR Approach



Digital Bridge at the Public Health Informatics Conference

- Atlanta, GA
- Reportable Conditions Knowledge Management System: Developing Quality Decision Support in the Data Supply Chain for Public Health Surveillance
  - Tuesday, August 21 10:30-12:00PM ET
- Digital Bridge in Action: Perspectives from eCR Pilot Sites
  - Tuesday, August 21 3:00-4:00PM ET
- Making the Electronic Case Reporting Connection: Implications for Data Quality
  - Wednesday, August 22 10:30-12:00PM ET

- Full agenda available at phiconference.org/

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!

Additional Slides for Reference

Acronyms Used in this Presentation

AIMS	APHL Informatics Messaging Services Platform	**HL7**	Health Level 7
APHL	Association of Public Health Laboratories	**MiHIN**	Michigan Health Information Network Shared Services
CSTE	Council of State and Territorial Epidemiologists	**PHII**	Public Health Informatics Institute
DSI	Decision Support Intermediary	**RCKMS**	Reportable Conditions Knowledge Management System
DWT	Davis Wright Tremaine, LLP	**RCTC**	Reportable Conditions Trigger Codes
EHR	Electronic Health Record	**RR**	HL7 Reportability Response
eICR	HL7 Electronic Initial Case Report	**RWJF**	Robert Wood Johnson Foundation
ELR	Electronic Lab Report	**SME**	Subject Matter Expert
HIE	Health Information Exchange	**STLT**	State, Territorial, Local and Tribal
HIPAA	Health Insurance Portability and Accountability Act	**TFGH**	Task Force for Global Health

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

	RCTC ("trigger codes")	RCKMS ("decision support")
Function	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)
Location Implemented	Within local EHR environment	Centrally hosted as an application on the AIMS platform (i.e., a component of the decision support intermediary)
Input	Patient data (e.g., diagnoses, lab orders) in EHR	eICR; case reporting criteria authored by public health jurisdictions
Output	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

2016	2017	2017-2018
• Established vision • Created project charter • Formed governance body	• Formed distinct workgroups • Developed functional requirements and a technical architecture diagram • Created initial sustainability plan and communications plan • Shared preliminary legal recommendations • Selected seven eCR implementation sites • Held first successful in-person governance body meeting	• Established new workgroups (implementation taskforce, evaluation committee, strategy workgroup and legal and regulatory) • Began coordinating eCR implementations to launch in 2018 • Selected a legal approach for initial implementation sites • Held second successful in-person governance body meeting