EHR Design for Promoting Population Health Management

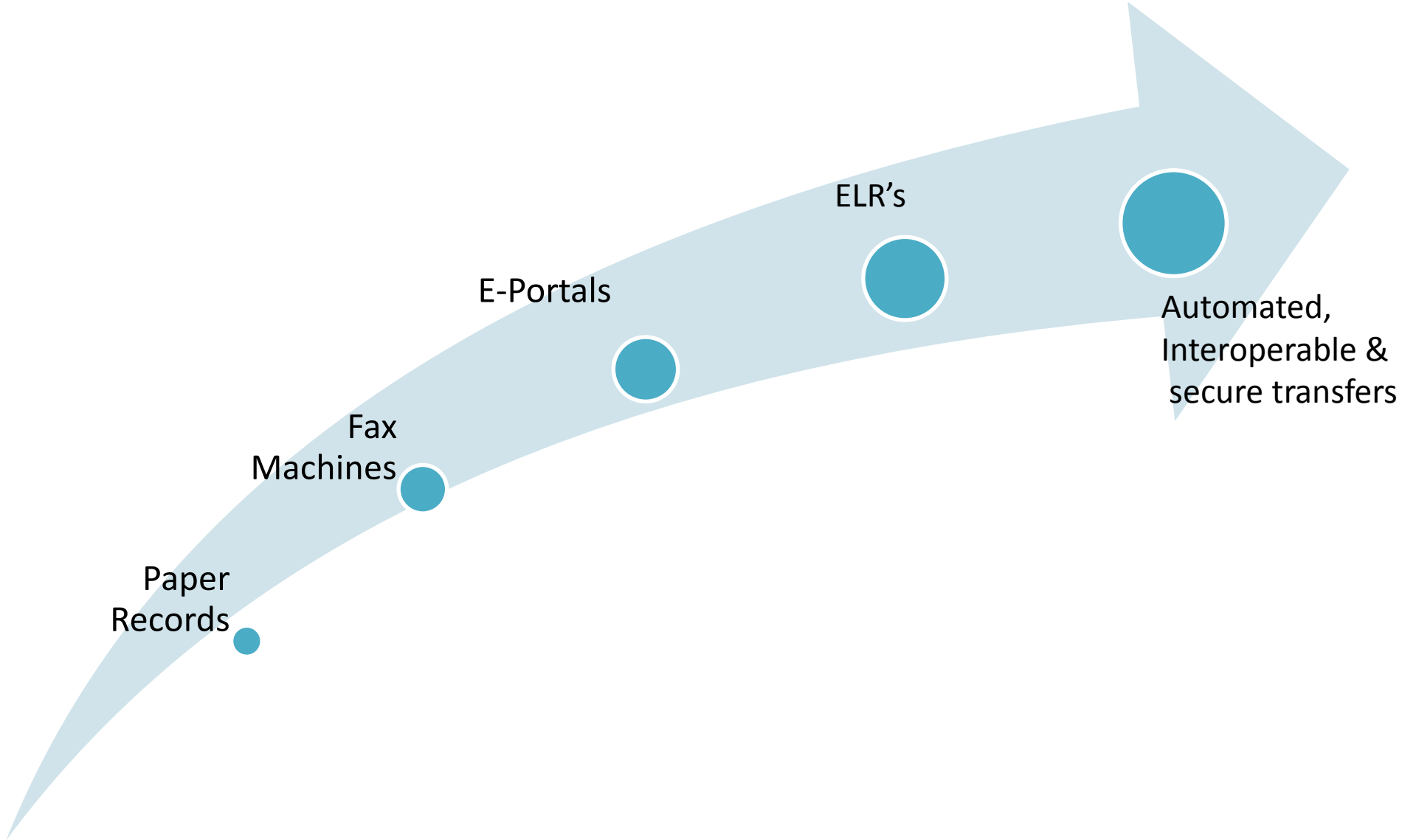
What Can Health Care Learn from Other Industries?

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



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
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

Governance Body

Governance Chair (John Lumpkin – Initial)

Health Care	Public Health	Vendor
HealthPartners	APHL	Epic
Kaiser Permanente	ASTHO	Meditech
Partners Healthcare	CSTE	Allscripts
	NACCHO	Cerner
	CDC	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.

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.

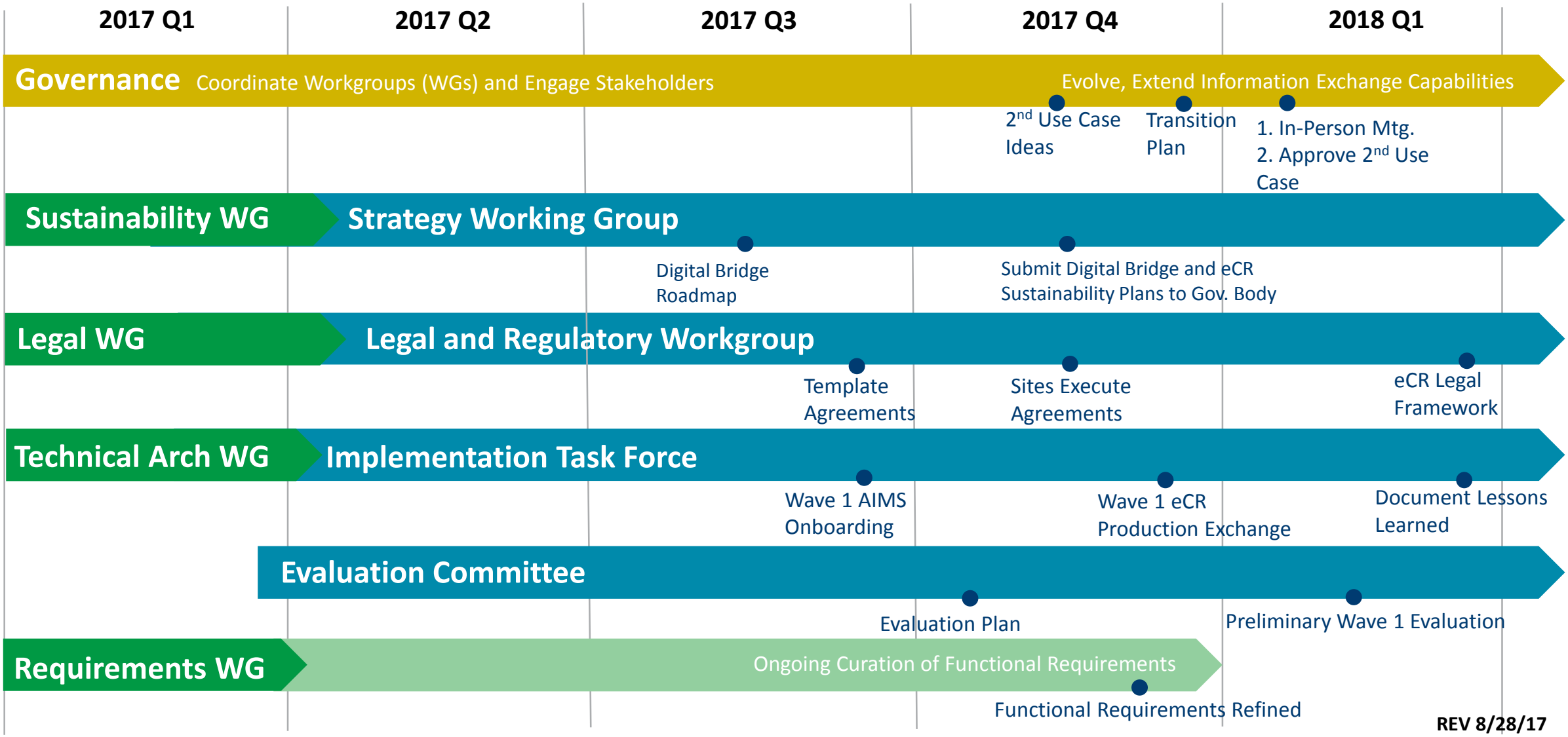
Benefits to the Digital Bridge Approach

- 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.

digital bridge

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

eCR Project Timeline



REV 8/28/17

Thank you!

For updates: www.digitalbridge.us

For questions and input: info@digitalbridge.us

Additional Slides for Reference

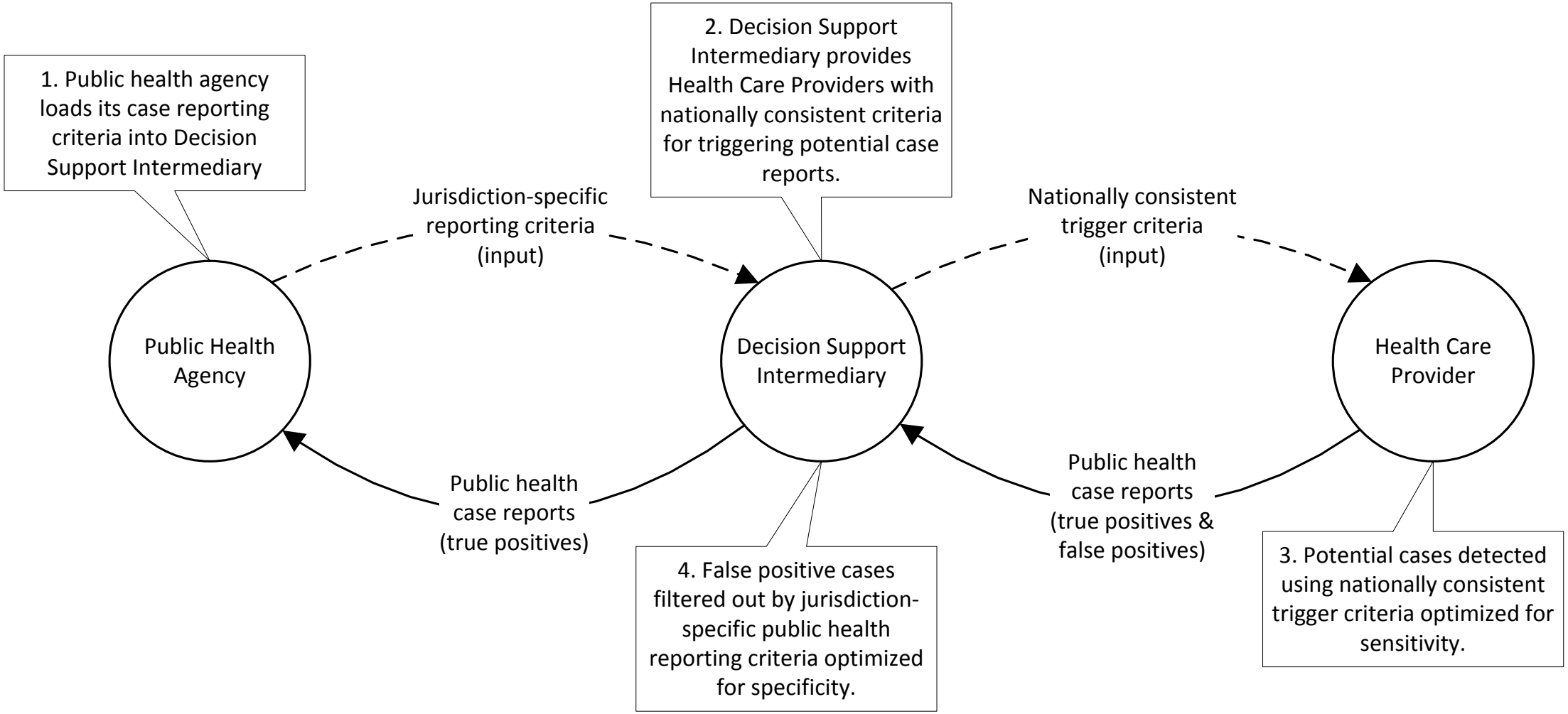
Workgroup Activities

Workgroup Activities (2017)

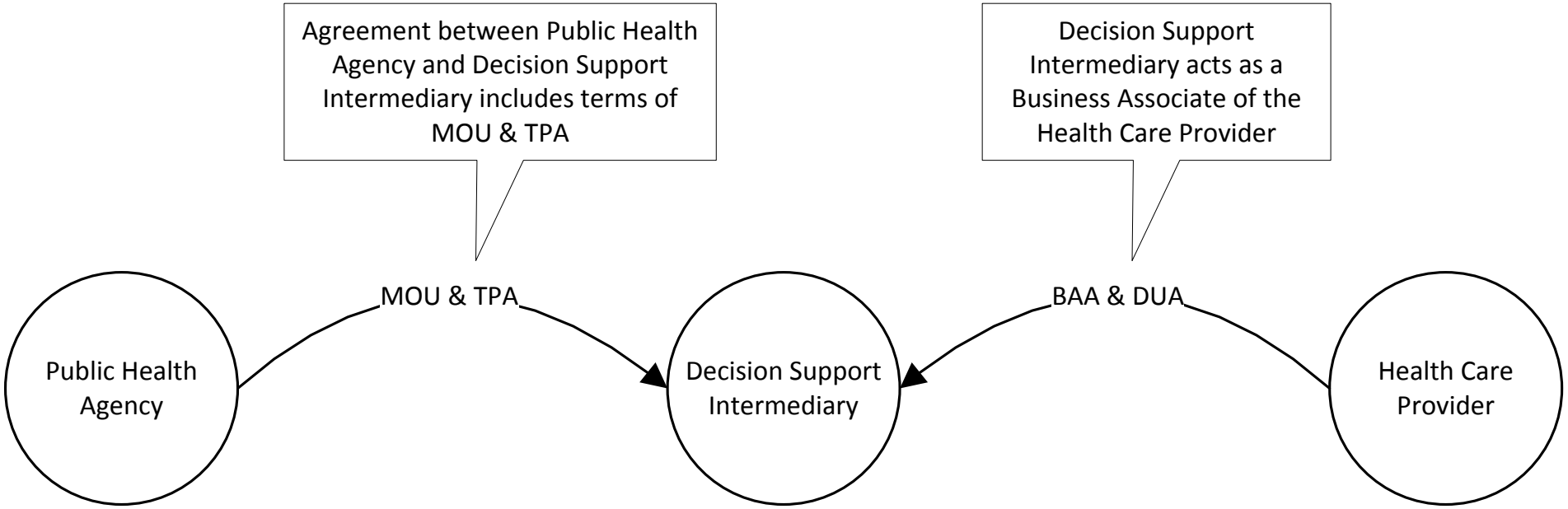
- **Implementation task force**: oversees eCR implementation and determines if sites have met the reportable conditions business requirements.
- **Evaluation committee:** assesses resources needed for nationwide expansion and measures outcomes of the project to recommend improvements.
- **Legal and regulatory 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



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

Public Health Agency	Health Care Provider	EHR Vendor
Kansas	Lawrence Memorial Hospital	Cerner
Michigan	Local Public Health Clinics	NetSmart/HIE-MiHIN
Utah	Intermountain Healthcare	Cerner
California	UC Davis	Epic
Houston	Houston Methodist	Epic
Massachusetts	Partners HealthCare	Epic
New York City	Institute of Family Health	Epic

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.

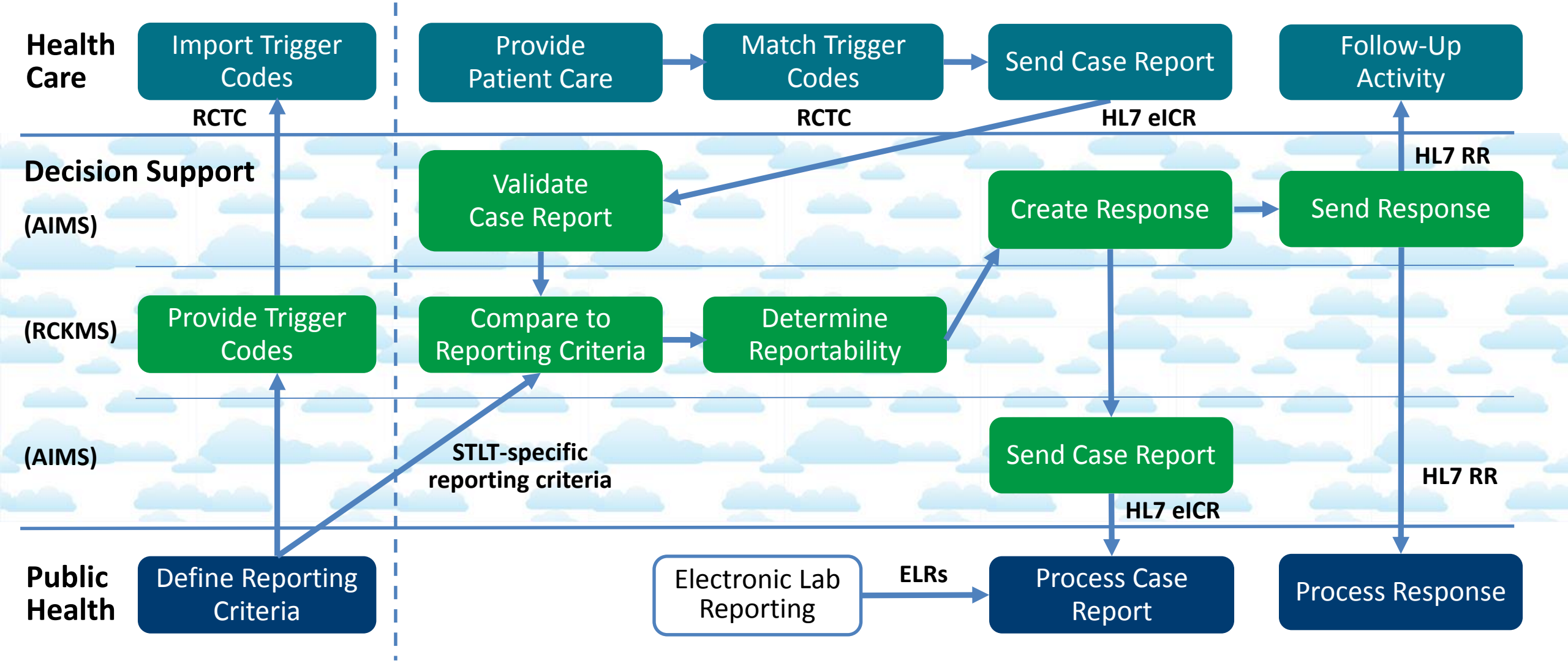
Stakeholder Participation and Resources

- 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

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

Digital Bridge Accomplishments

Phase I	Phase II	Phase III
• 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)