

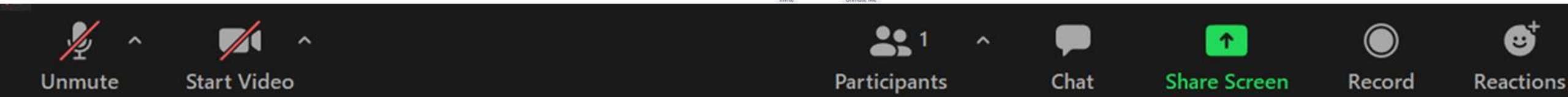
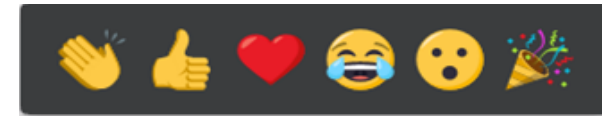
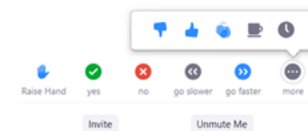
Tending the FHIR

Karrie Schwencer, Consultant, Public Health Informatics Institute | May 26, 2022

Better data. Better decisions. Better health.

Finding your way around Zoom

- The audience is muted, type your questions into the chat or use reactions to communicate with panelists.



Public Health's Trailblazing Initiatives on FHIR

Justin Irving, MITRE
Forrest White, Helios

Thursday, May 26, 2022

Learning Objectives

- Understand how FHIR[®] is related to CDC's Data Modernization Initiative
- Describe two Public Health FHIR[®] initiatives and their approach
 - Helios, HL7[®]'s FHIR[®] Accelerator for Public Health
 - Public Health FHIR[®] Implementation Collaborative's (PHFIC) purpose
- Distinguish between the two initiatives
- Identify where you can participate

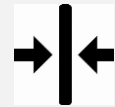
Specific, Significant Shifts Are Occurring Which Can Benefit Public Health

Current State: High Processing Burden

DATA USE AGREEMENTS
NEGOTIATED ONE AT A
TIME

DATA SENT MULTIPLE TIMES,
IN MULTIPLE FORMATS TO
MULTIPLE ENDPOINTS

PUBLIC HEALTH
NEEDS ARE NOT
WELL UNDERSTOOD



ALIGNMENT WITHIN AND
BEYOND PUBLIC HEALTH



Emerging State: Greater Connectivity & Flexibility

COMMON AGREEMENTS &
RULES OF THE ROAD ARE PRE-
NEGOTIATED IN ADVANCE

DATA STANDARDIZED
ONCE TO FILL MULTIPLE
USERS' NEEDS

PUBLIC HEALTH
NEEDS ARE VALUED
AND PRIORITIZED



Fast Healthcare Interoperability Resources (FHIR®)

Access and Share Health Information Seamlessly

Set of best practices and open standards being developed and adopted by a global community to make data sharing more flexible and effective.

https://www.cdc.gov/surveillance/pdfs/20_319521-D_DataMod-Initiative_901420.pdf



**“Plug & Play”
Interoperability**

Value to Public Health

- ✓ Access useful and actionable data needed to drive decision making and inform the public
- ✓ Add functionality to existing systems to better meet public health needs, without delays or costly integrations
- ✓ Simplify and modernize data sharing both within and across both organizational and jurisdictional boundaries

It's to Our
Advantage to
Shape It as
It's Being
Formed



Public Health FHIR[®] Implementation Collaborative (PHFIC)

The PHFIC's Core Purposes

1

Build a public health FHIR® community

2

Identify key challenges

3

Implement FHIR® solutions

4

Provide training and support for use and scalability

The Collaborative aims to build a public health FHIR® community that identifies key implementation challenges within and across public health, provides training and learning opportunities, and demonstrates small scale impact before wide adoption

PHFIC Areas of Focus in 2022

- 1. Establish the PHFIC Steering Committee**
 - Charter finalized and accepted on February 11, 2022
 - Soon to begin expansion of the Collaborative once pilots begin
- 2. Partner with a few state and local pilot sites to identify small, but key opportunities for FHIR® based solutions**
 - State and local pairing conversations are identifying use cases
 - Finalizing contracts
- 3. Build FHIR® capacity across STLTs in a learning community through activities such as workshops, office hours, and publishing a Playbook**
 - Ongoing weekly office hours
 - Workshops held on February 7 and May 11, 2022, and next workshop to be held in June
 - Playbook to be published mid-July

PHFIC's Steering Committee



Bryant Karras
At-Large State
Representative



Seth Foldy
At-Large Local
Representative



Kate Gooden
CSTE
Representative

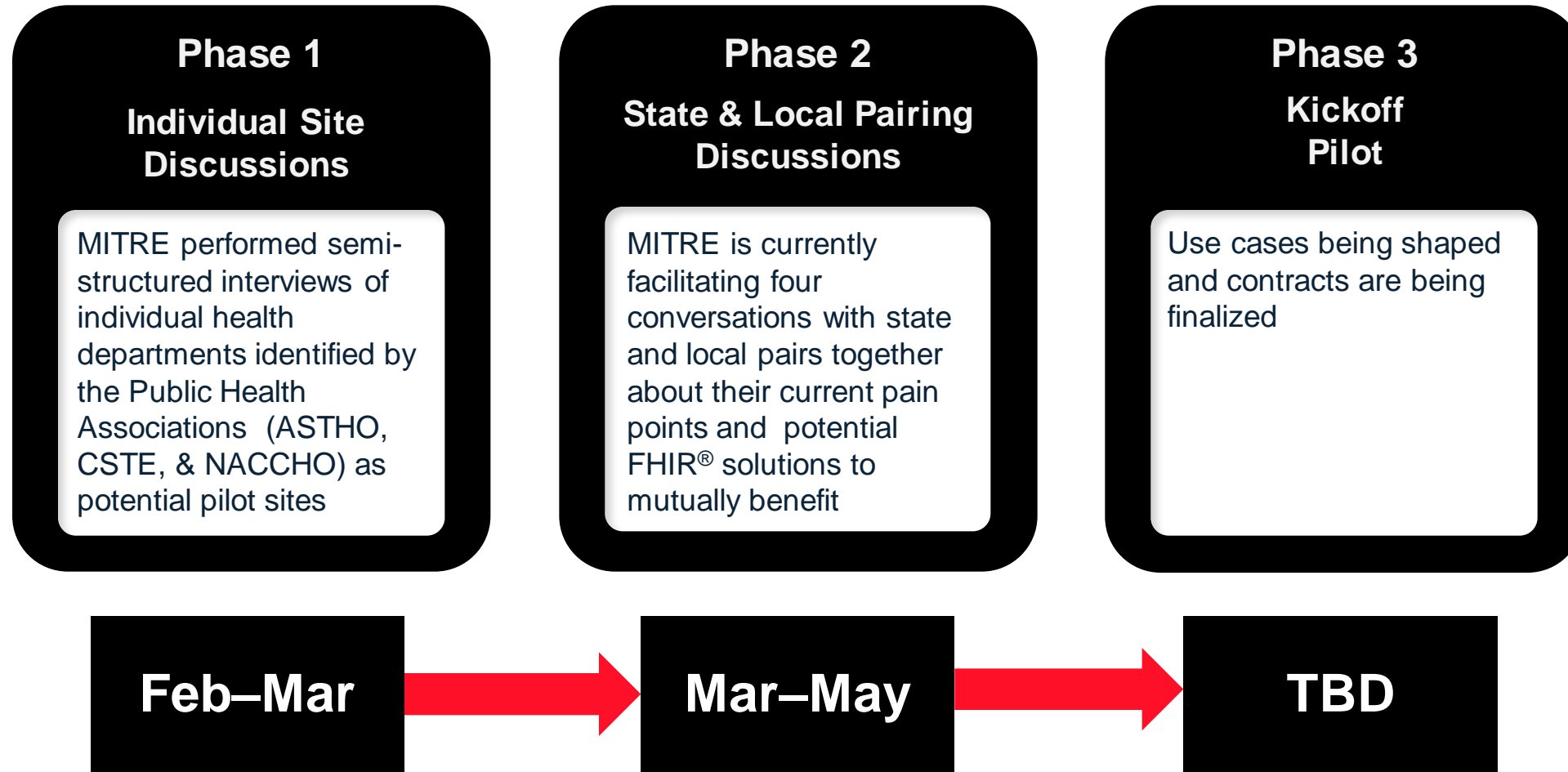


Christine Steward
NACCHO
Representative



ASTHO
Representative

Approach to Identify Use Cases



PHFIC's Pilot Site Conversations Map

DMI
@ CDC



State Health Departments

1. Texas*
2. Minnesota
3. Virginia*
4. Washington

Local Health Departments

1. Harris County (TX)
2. Minneapolis City (MN)
3. Olmstead County (MN)
4. Dakota County (MN)
5. Hennepin County (MN)
6. Fairfax County (VA)*
7. San Mateo County (CA)
8. King County (WA)

Joint Department Meetings

- Minnesota/Hennepin County
- Texas/Harris County
- Virginia/Fairfax County

*Have begun contract negotiation

Pilot Site Conversations Summary

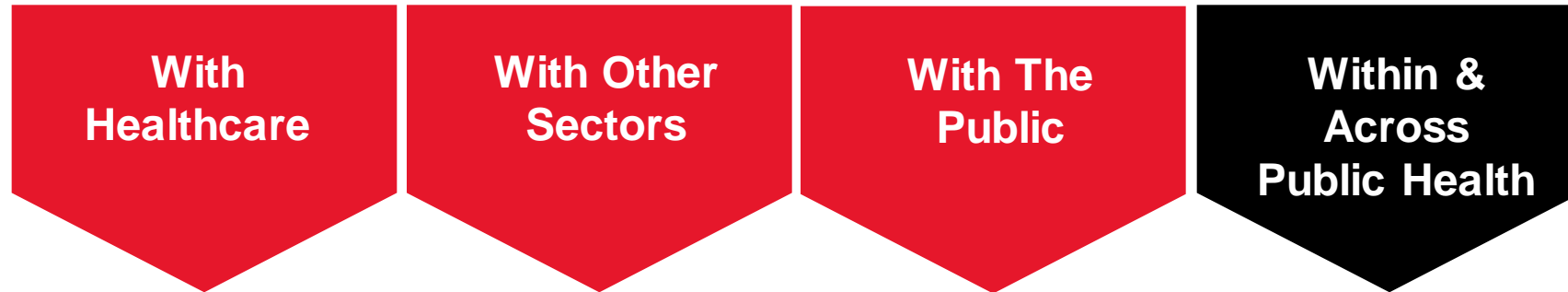
Use Case	Implementation Phase
Surveillance data pull	Specification
Immunization data pull	Screened Out (Feasibility/Policy)
MPI Enrichment use cases	Screened Out (Feasibility)
Public Health Clinic eCR	Screened Out (Feasibility)
FHIR Based eCR	Screened Out (Feasibility)
Public Health Clinic SDOH Questionnaire	Screened Out (Feasibility/Awareness)
Vital Stats	Screening
Disease Investigation Triggering/Notification	Screening
Immunization data pull	Screening
Death reporting	Screening
SANER	Screening
Expanding Immunization Smart Cards	Screening
Vital Stats	Screening
EMS/Trauma Gun Shot Injury data pull	Screening
Push Surveillance into MPI workflow	Screening
SANER sharing with local	Screening

- Local agencies need more timely and flexible access to geographically relevant surveillance data to enable responsive interventions
- Both state and local agencies want more SDOH data to better serve at risk communities and enhance prevention strategies
- FHIR® needs to be part of larger DMI efforts. Connecting to siloed databases presents significant scalability issues
- Data sharing agreements and patient consent are major concerns that may chill adoption of FHIR®
- Use cases automating existing higher volume data flows perceived as having greatest ROI and public health impact

COMPARISON AT-A-GLANCE

HELIOS AND THE PUBLIC HEALTH FHIR IMPLEMENTATION COLLABORATIVE ARE COMPLEMENTARY

Initial Areas of Focus



	With Healthcare	With Other Sectors	With The Public	Within & Across Public Health
Helios	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Collaborative	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

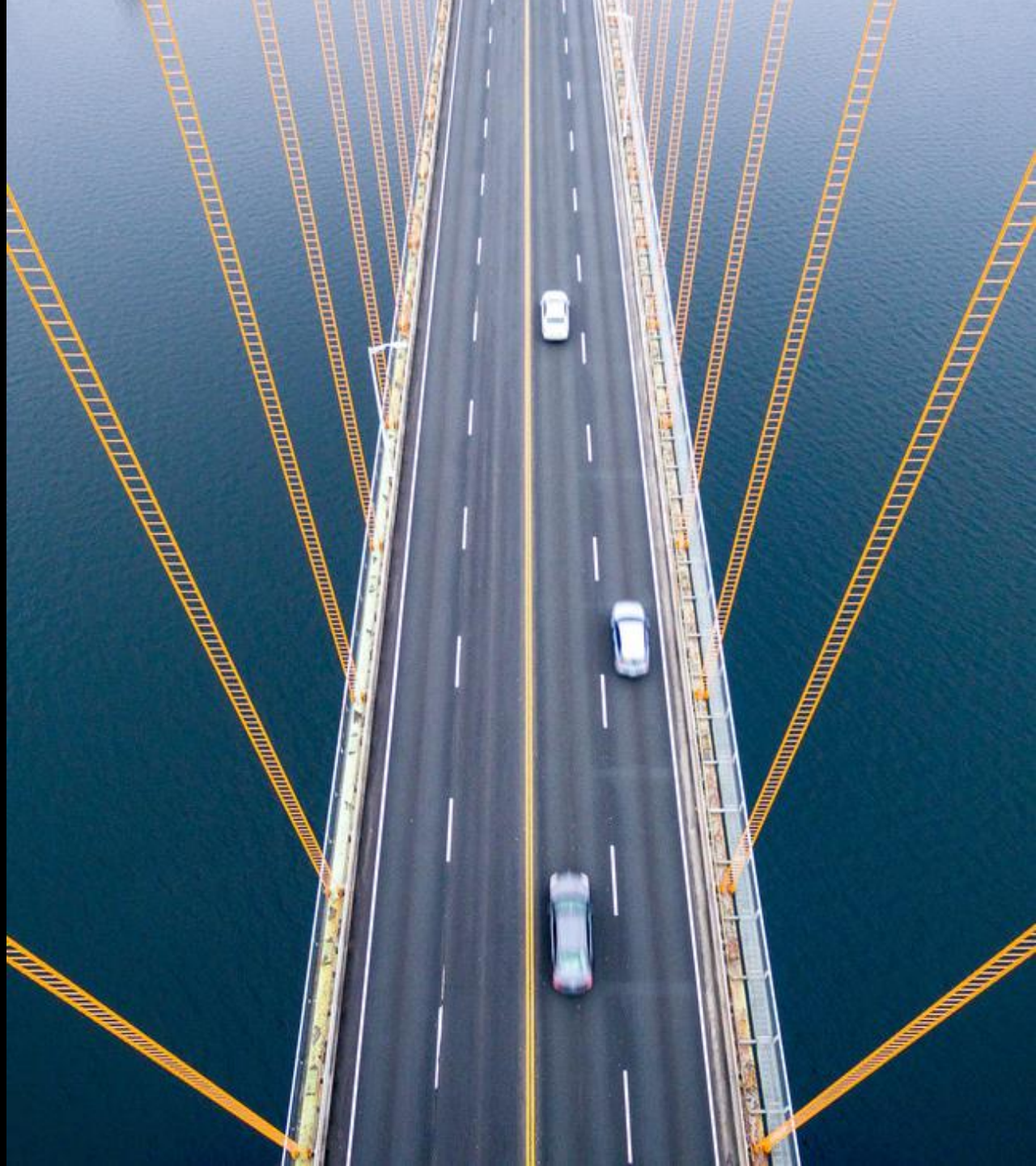
PHFIC's Technical Advisory Services

Service	Description
Office Hours (weekly)	<ul style="list-style-type: none">▪ Weekly one-hour sessions with FHIR® subject matter experts▪ Wednesdays from 12PM–1PM ET▪ No appointment or registration necessary▪ CDC & STLT participation▪ Location: https://mitre.zoomgov.com/j/1618468762▪ Meeting ID: 161 846 8762 / Passcode:34478264
Workshops	<ul style="list-style-type: none">▪ Online seminars to help STLTs conceptualize FHIR® solutions▪ First workshop held on February 7, 2022▪ Second workshop held May 11, 2022▪ Workshop materials available on https://sites.mitre.org/phfic/▪ Currently targeting April 2022 for the next workshop
FHIR® Playbook <i>Coming soon</i>	<ul style="list-style-type: none">▪ Step-by-step guidance on preparing for and implementing FHIR®▪ Specific plays to be developed for each use case▪ Currently targeting August timeframe for first draft

This is a journey, not a destination

“...if we can build systems that are automated, interconnected, and supported by a workforce that knows how to use them, we will stand far better prepared to cope with the serious threats to the health of our people and communities.”

*Annie Fine, Testimony to the Health Information
Technology Advisory Committee, ONC (2021)*



The Helios FHIR Accelerator for Public Health



WHAT IS HELIOS AND WHAT DO ITS MEMBERS SEEK TO ACCOMPLISH?

HELIOS OVERVIEW

Helping public health to align with and benefit from widespread standardization and transformation that are happening around digital health data.

01 Multi-Sector Alliance

Diverse teams—across public health, healthcare, philanthropic organizations, and the private sector—work together to tackle longstanding challenges and explore new opportunities to advance interoperability.

02 Official HL7 FHIR Accelerator

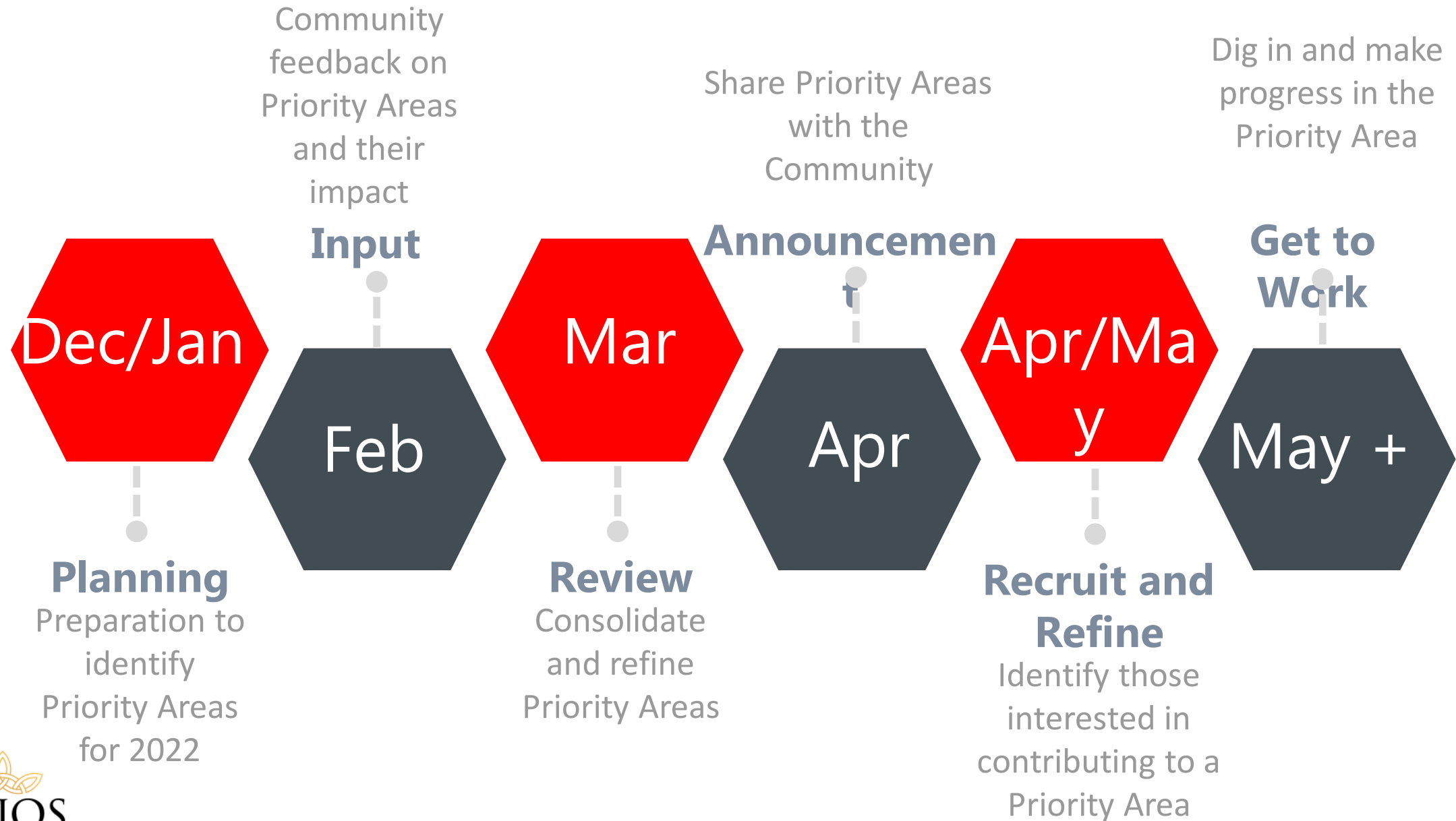
Align with and address known gaps in the FHIR® standard to help promote more flexible and effective data exchanges with healthcare, the public, and other sectors beyond public health.

03 Focused on Impact

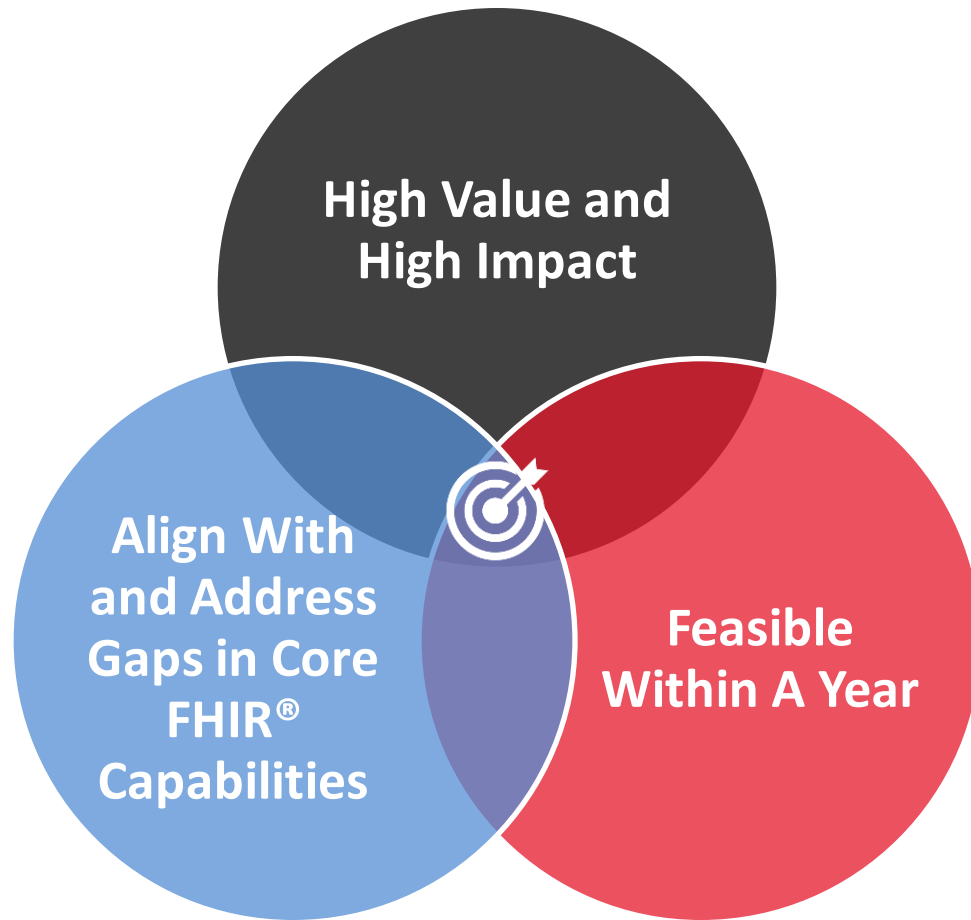
Prioritize a small set of use cases that complement what exists today and make it easier for public health officials to act swiftly, share insights effectively, and have a greater impact in their communities.



Progress to Date



Criteria to Help Prioritize, Scope, and Select Use Cases



Desirability: Serves an immediate and pressing public health need

Feasibility: Initial scope can be accomplished within a year

Compatibility: Prioritize and address deviations in public health implementations of FHIR®

Criteria to Help Prioritize, Scope, and Select Use Cases

Initial Areas of Focus



	With Healthcare	With Other Sectors	With The Public	Within & Across Public Health
Helios	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Collaborative	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Make Data in Public Health Systems Accessible in Bulk



Summary

How might we make data stored in public health information systems, such as IIS, more accessible to authorized “B2B” users beyond public health (e.g., State Medicaid programs, healthcare partners, private insurers, etc.)?

Public Health Goals That Could Be Achieved

- Ensure authorized “B2B” users of IIS data can access information (in bulk) on immunizations to help address gaps in care (or prevent redundancies) while lowering burden on state public health agencies.
- Help health providers and payers to proactively support their patient populations.
- Lower burden on state public health agencies and on data requestors.

How Helios Members Will Engage

- Create a uniform process for querying immunization data in IIS, leveraging BulkFHIR
- Develop implementation guidance and open-source code samples
- Engage “early adopters” as pilots to “work out the kinks” and develop a “readymade” standard, so that the rest of the community can come on as they're able

Project Team Objectives

- Develop guidance for bulk FHIR query from an IIS that can eventually grow into a balloted Implementation Guide (this is a longer-term goal, but unlikely to be attainable within the 12-month time period)
- Leverage current tools, guidance, and reference implementations
- Recruit a small number of IIS partners to participate in a proof-of-concept implementation

Align and Optimize Public Health Data Sharing



Summary

How might public health access and exchange patient-level data more efficiently and effectively using FHIR to deliver the greatest net benefit overall?

Public Health Goals That Could Be Achieved

- Lay the groundwork to help provide more complete and up to date data to public health that would not be available easily under existing data channels
- Provide access (via push or pull as appropriate) to specific information needed to take public health action as authorized and agreed upon

How Helios Members Will Engage

- Identify common requirements and assess various FHIR-based paradigms for accessing and exchanging patient-level data in EHRs.
- Identify building blocks and opportunities for collaboration and accelerated development with industry.
- Demonstrate ways through which FHIR can help support public health action and improve the quality and consistency of public health data shared nationwide while saving time, money, and effort
- Inform a strategic roadmap to help align and advance public health adoption of FHIR moving forward.

Project Team Objectives

- Use the existing Health Record Exchange (HRex) to explore options for sharing data with public health and returning actionable information to care providers
- Describe a process for assessing the interoperability needs of a use case and identifying optimal FHIR-based approaches for achieving data sharing

Deliver Aggregate Information to Public Health



Summary

What can we do to lessen the strain on health care and public health during times when both systems are most taxed (and configure the solution in a way so that it can also be used during “normal” operations)?

Public Health Goals That Could Be Achieved

- Provide mission-critical aggregate information (e.g., bed count, supply inventory) to public health during pandemics, natural disasters, and other preparedness events
- Use the same “building blocks” for aggregating information to help improve ongoing situational awareness and surveillance of non-reportable diseases, chronic conditions, birth defects, environmental health, and injuries during normal operations

How Helios Members will Engage

- Focus on one or two measures and demonstrate ways FHIR can help deliver mission-critical capacity information to public health partners on the front lines both during emergencies and routine operations.
- Align measures and terminology to the conventions that others are adopting via FHIR as a “north star” to help reduce (and mitigate the burden of) jurisdictional variation
- Identify opportunities to replace Excel spreadsheets and other manual forms of data capture with FHIR building blocks that can be used to address a wide range of public health preparedness and data aggregation needs

Project Team Objectives

- Establish the current landscape for aggregate data reporting
- Pilot the exchange of 1-2 measures based on priority and Project Team resources
- Explore the overlap and sharing of aggregate data and the underlying line level data
- Identify gaps and overlaps with existing projects to develop guidance on implementing aggregate reporting through a variety of exchange methods

Project Teams and Operating Committee

- Project Teams
 - One Project Team per Priority Area
 - Responsible for fulfilling the Priority Area objectives and deliverables
 - Made up of members with the skill sets necessary to carry out the work (including technical application of FHIR, workflows, data content, etc. related to the specific Priority Area)
- Operating Committee
 - Responsible for the ongoing activities being performed by the Accelerator and acts as a forum for discussion of issues and reaching understanding
 - Made up of member organizations who are actively contributing resources to Project Teams

Priority Area Next Steps

- The Project Team champions are working to discuss, refine and approve the goals and deliverables for their Priority Area
 - Scope
 - Schedule
 - Building Blocks
- The Operating Committee helps ensure that goals and deliverables are scoped appropriately and are aligned across Priority Areas
- Education will be an important aspect of all Priority Areas so that implementers will be able to better understand how to use the Helios findings and deliverables

Contributing to the Priority Areas

- No membership fee for the first round of project work
 - In-kind resource support for developing and piloting Priority Areas
- All interested groups are encouraged to participate in one or more of the areas
 - Make Data in Public Health Systems Accessible in Bulk
 - Align and Optimize Public Health Data Sharing
 - Deliver Aggregate Information to Public Health
- To join a Project Team, contact us at helios@hl7.org
- Please help us to spread the word!

How to Get Involved



- If you have a question, please submit it to us at helios@hl7.org and we will follow-up offline.
- Additional ways to connect:
 - Helios HL7 Homepage: <https://www.hl7.org/helios/>
 - Helios Zulip Chat: <https://chat.fhir.org/#narrow/stream/307807-Helios-Accelerator>
 - Helios Confluence Page: <https://confluence.hl7.org/display/PH/Helios+FHIR+Accelerator+for+Public+Health+Home>
 - Helios ListServ: helios@lists.hl7.org

PHFIC

- To stay informed, please complete this form: <https://forms.office.com/g/4MsrMCAWPP>
- Alternatively, visit our PHFIC Box site: <https://sites.mitre.org/phfic/> or join office hours every Wednesday at 12pm–1pm ET at the following Zoom location: <https://mitre.zoomgov.com/j/1618468762>
- Additional points of contact:
 - Renee Rookwood, Project Lead, rrookwood@mitre.org
 - Justin Irving, Collaborative Lead, jirving@mitre.org
 - Eric Whitebay, Technical Lead, ewhitebay@mitre.org
 - Jim Jellison, Advisory Services, jjellison@mitre.org
 - Paula J. Soper, Playbook Lead, psoper@mitre.org
 - Jocelyn C. Tafalla, Operations, jtafalla@mitre.org
 - Seth Foldy, PHFIC Co-Chair, sethfoldy@icloud.com
 - Bryant Karras, PHFIC Co-Chair, bryant.karras@doh.wa.gov



Questions?



Office of Innovation & Technology | Informatics Program

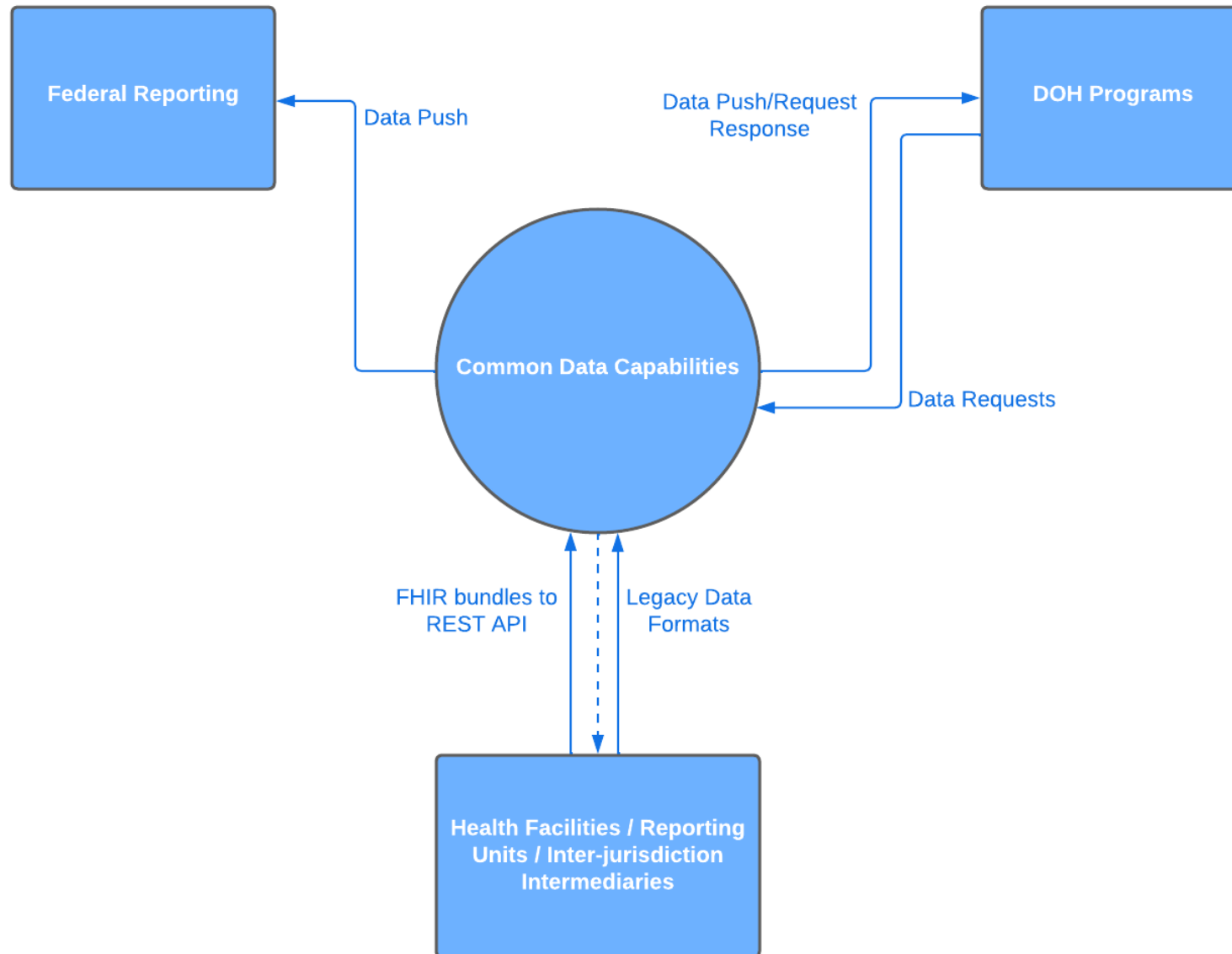
Current Status of FHIR Planning/Implementation

- A decision to plan and implement FHIR based data exchange was made by the Washington Department of Health (DOH) in 2022.
- Recommendations were made by the 'FHIR Infrastructure Roadmap' laid out by the Enterprise Architecture Team which breaks down to the four different process groups outlined:
 - Application Programming Interface (RESTful web service) with a FHIR server
 - A broker service for data transformations, as required, with an interface engine
 - Use of cloud services for deployment of the infrastructure and applications
 - FHIR Development and Implementation tools (Server, client, validator, API development, testing and documentation)

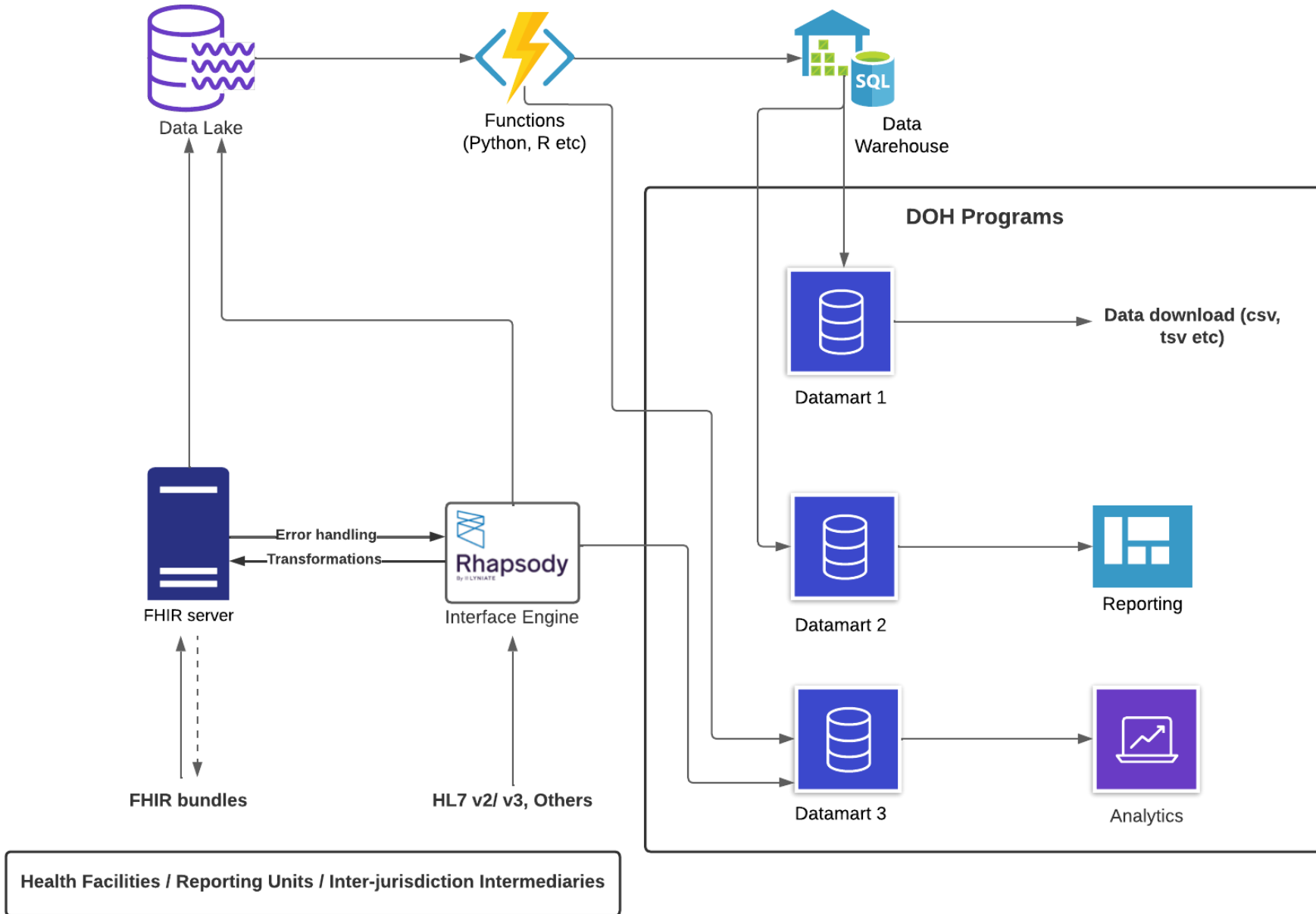
Actively considered FHIR Projects

- Pilot projects the Department is working on:
 - Hospital Capacity Aggregate Data (Situational Awareness)
 - Vital Statistics Death Reporting
 - SMART Health Cards (this is currently implemented [FHIR compliant]; Planning to 'FHIR enable' the system)
- Next set of potential use cases after successful completion of pilot:
 - Social Determinants of Health (closed loop social referral, data acquisition, merging and analysis)
 - Electronic Case Reporting (FHIR payload)
 - Case Investigation and Contact Tracing – Exchange of data with other jurisdictions

Common data capabilities - High Level



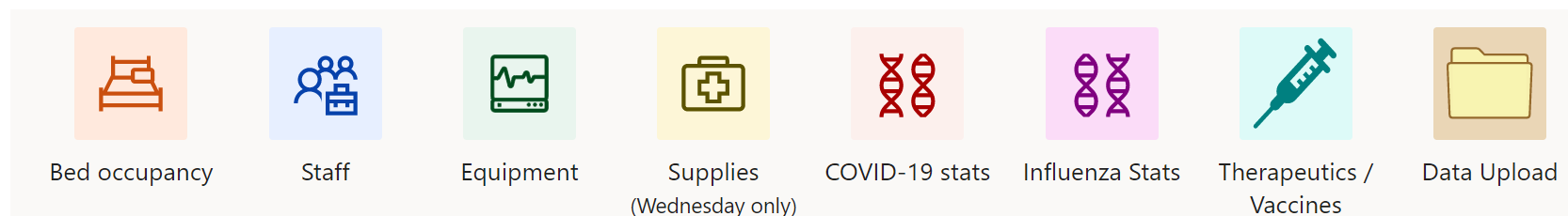
Common Data Capabilities



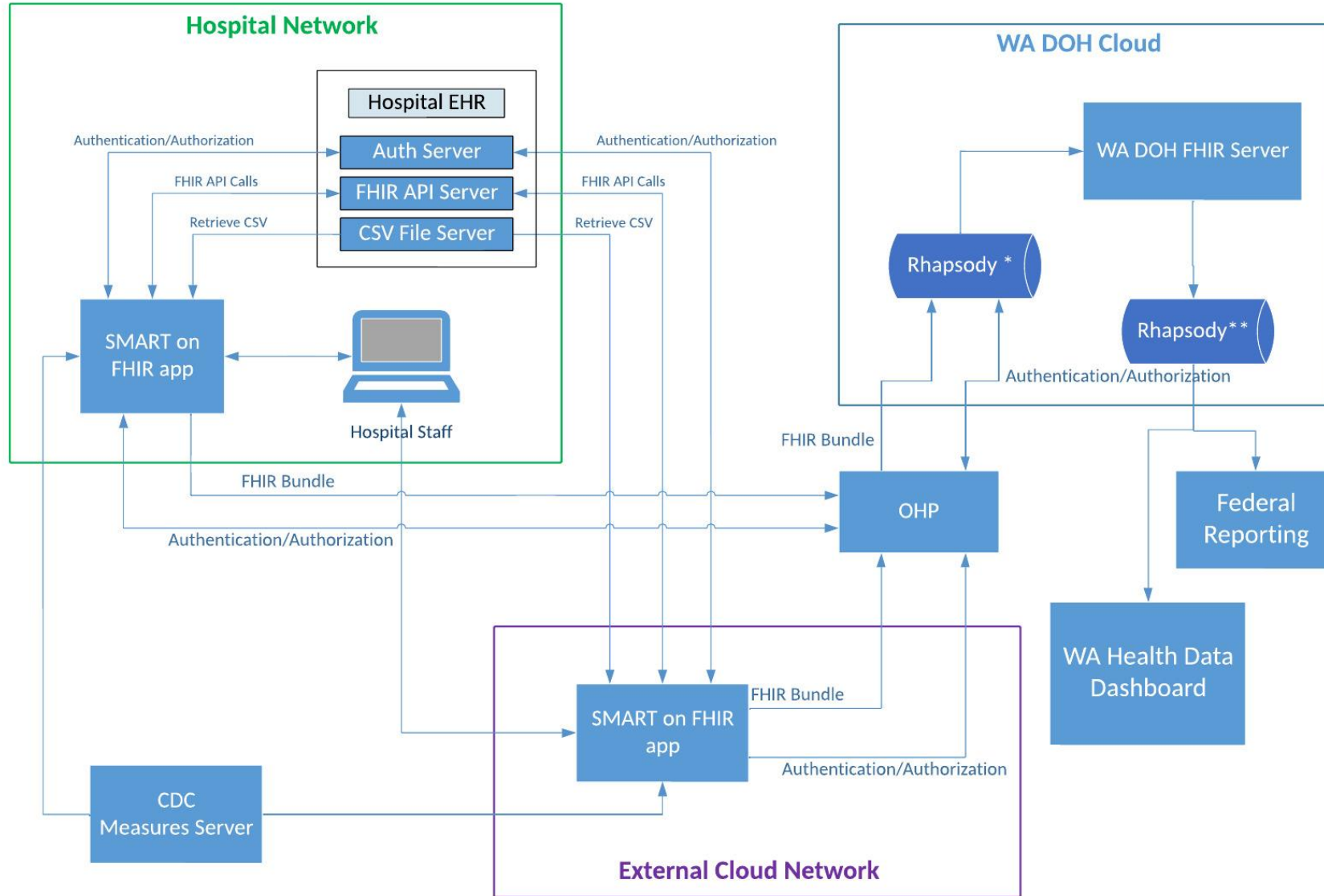
WA HEALTH (Automation with SANER IG)

WA HEALTH – A technology platform that collects key hospital and health care data and provides the data in a seamless way to support leaders across the state make timely and informed decisions in response to public health threats.

- Developed in response to the COVID-19 pandemic
- Collect data from over 90 acute care hospitals daily (manual)
 - Bed capacity
 - Disease/condition activity/spread
 - Staffing status
 - Supplies/equipment use/constraints



Situational Awareness - Data aggregation



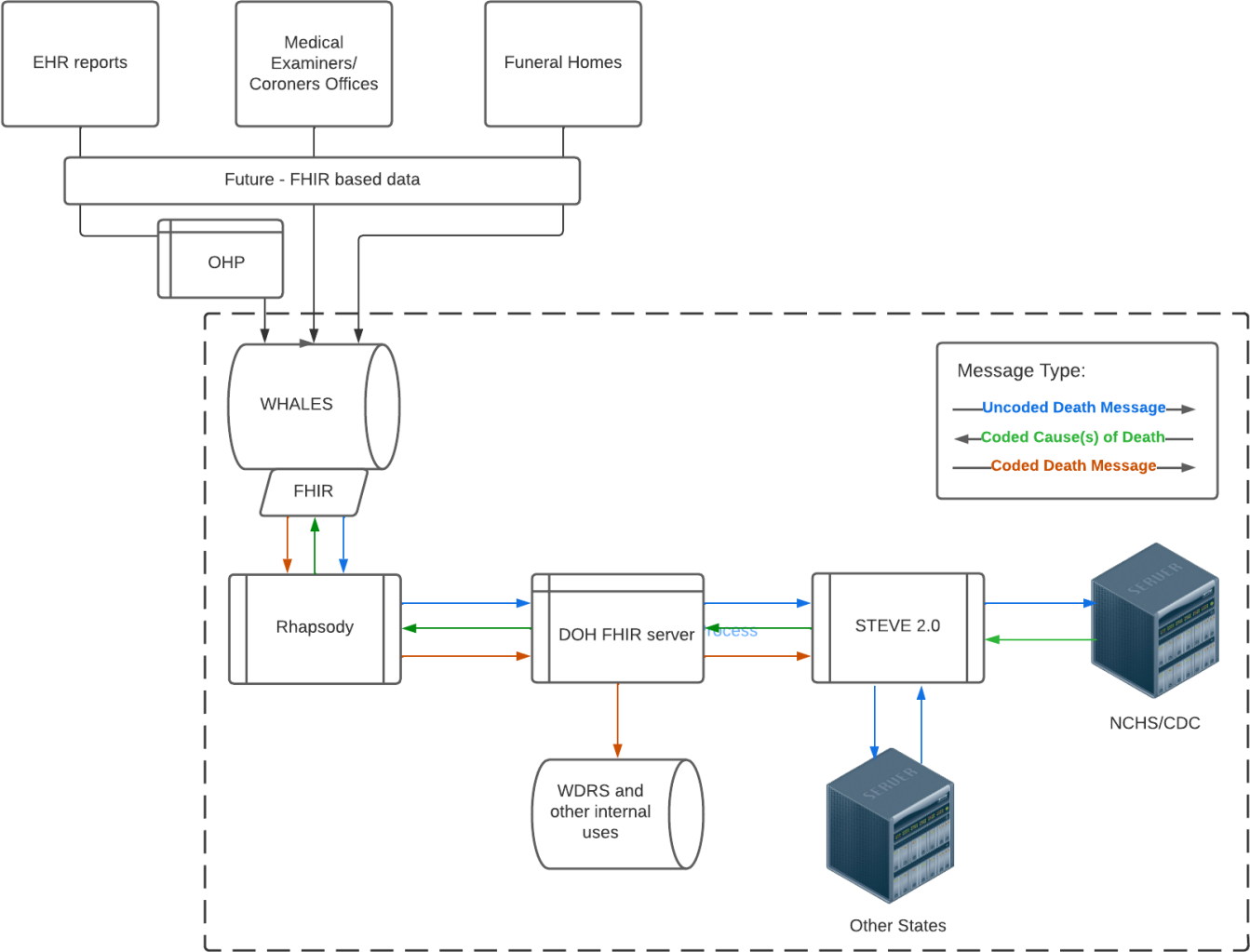
* Rhapsody Interface Engine Receives/Routes FHIR Resources/Data to WA DOH FHIR server

**Rhapsody Interface Engine transforms FHIR Resources/Data to target formats and pushes to WA DOH PH Dashboard & Federal Reporting destination(s)

Death reporting – Vital Statistics

- Electronic Death Reporting System (EDRS) is a web application for filing death records in Washington State. The system is used by those with the legal authority to complete a death certificate, including funeral directors, physicians, medical examiners, coroners, and deputy registrars.
- The Department of Health developed EDRS to replace a paper process for filing death records. Electronic filing substantially reduces the time it takes to receive death certificates and improves the quality of the data we receive on causes of death.
- EDRS is being migrated to a newer life events registry in Washington – WA Health and Life Events System (WHALES)
- FHIR enabling the system starting with reporting to NCHS (VRDR FHIR IG)

Vital Registration Death Reporting



Collaborative Partners/Teams

- University of Washington
- Altarum Institute
- Helios - Public Health FHIR Accelerator
- FHIR Implementation Collaborative and MITRE Corporation
- CDC/US Digital Service
- Microsoft Research

Questions?

Contact Information

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Senior Epidemiologist/Informatician, MBBS (MD), MSPH

OIT | Informatics Program

ravi.kafle@doh.wa.gov



@WADeptHealth



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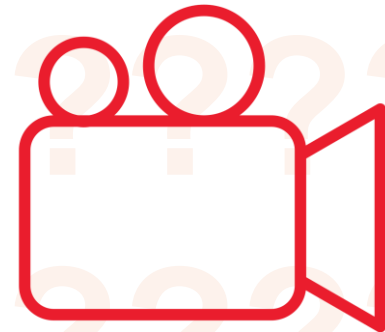
Questions and answer



Post in the chat

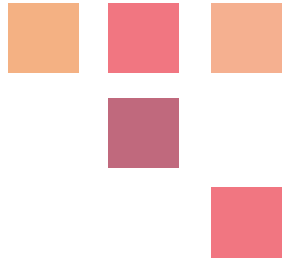


Raise your hand

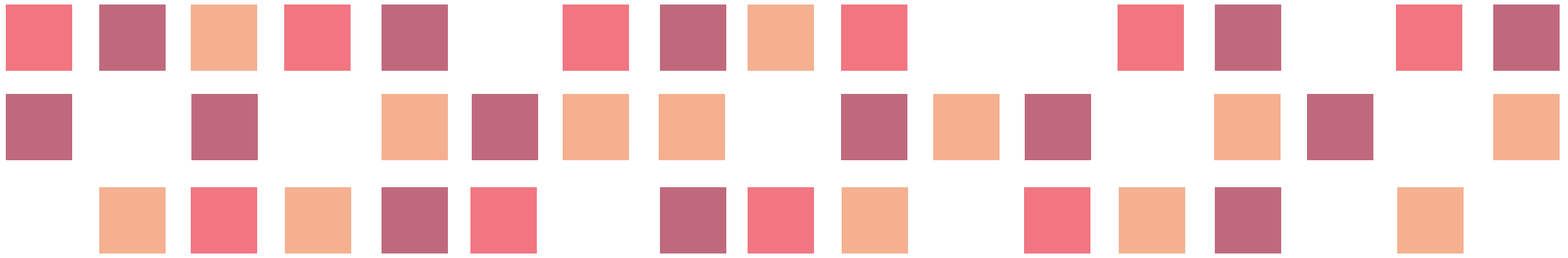


Turn on your video

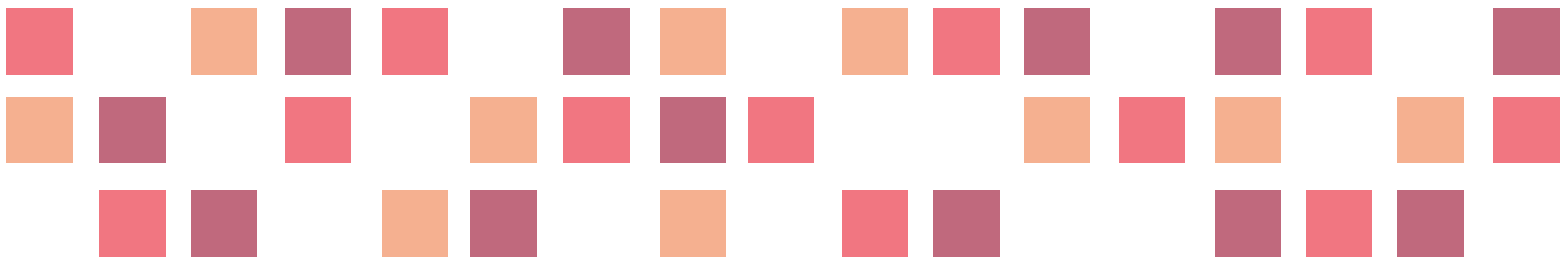
Next Steps



- Post additional questions on Circle - link provided in the chat
- Common grounds networking break 1:40-1:55 PM EST
- Next session 1:55PM ET
 - *Workshop reflections*



Thank you.



Better data. Better decisions. Better health.