eHealth Exchange™

All Participant Call

Kati Odom-Bell
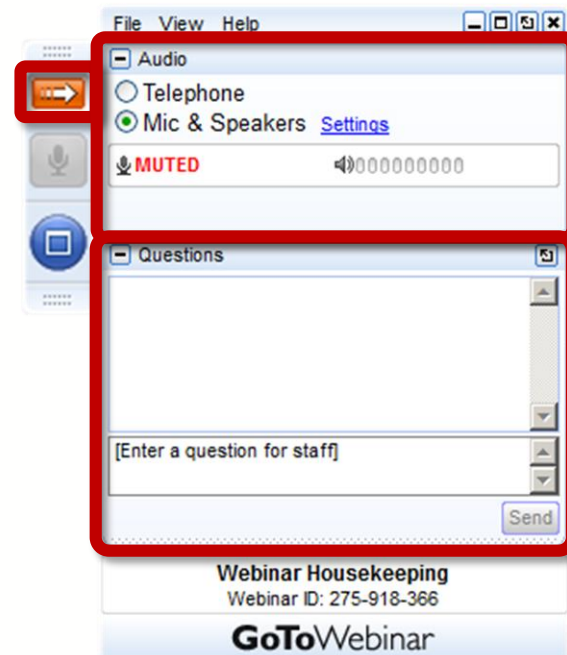
Pat Russell

Jay Johnstone

Mike Yackanich

Jay Nakashima

Debbie Condrey

Didi Davis

How Do I Participate?

Your Participation

Open and close your control panel

Join audio:
- Choose "Mic & Speakers" to use VoIP
- Choose "Telephone" and dial using the information provided

Submit questions and comments via the Questions panel

Note: Today's presentation is being recorded and will be provided within 48 hrs

Problems or Questions? Contact Dawn Van Dyke

dvandyke@ehealthexchange.org or 703.864.4062

Today's Topics

1. New Participants	Kati Odom Bell
2. Coordinating Committee Elections	Pat Russell
3. Announcements	Pat Russell
4. eHealth Exchange Innovation Grant	Jay Nakashima
5. Hub Upgrade	Mike Yackanich
6. FHIR Roadmap Highlights	Mike McCune
7. Content Validation	Didi Davis
8. FHIR R4 Update	Debbie Condrey
9. eCR Update	Kati Odom Bell
10. Certificate Authority Transition Update	Kati Odom Bell
11. Q&A	Everyone

New Participants

Congratulations to our newest Participants!

- New York Health and Hospitals Corporation, Epic

Committed to Improving Patient Care via Data Exchange

Coordinating Committee Elections

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2021 Coordinating Committee (CC) Seats

	Representative	Term Date
HIO	Mike Dittemore, RN	9/30/2022
	John Kansky	9/30/2023
	Pam Matthews	9/30/2024
IDN	Open	9/30/2023
	Matt Eisenberg, MD	9/30/2022
	Ryan Stewart	9/30/2023
Other	Paul Matthews	9/30/2022
	Dede Ainbinder	9/30/2024
	Jarrod Pearson	9/30/2024

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2021 Coordinating Committee (CC) Special Election Timeline

Nomination Applications:

- September 10– Applications Closed

Nominating Committee Submits Nominations

- September 21

Voting:

- September 27- October 1, Participants Vote

Term Begins:

- October 19- First New CC Member meeting

2021 Coordinating Committee Nominations: To be approved by Coordinating Committee 9/21/2021

- IDN/Providers – (1)

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Announcements

Announcement

Kati- Odom Bell, Program Manager

- Has been with eHealth Exchange for 7 years

- Started with 26 Participants, now the network is at 301 Participants with 24 nodes

- Announced September 9, that she will be leaving to join a new challenge leading legal software implementations.

- Transition planning is in process. No disruptions anticipated.

- Last day will be October 8, 2021.

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We're Hiring!

Program Manager – Implementations

- ▪ Guides health systems, ambulatory providers, HIEs, and other new customers join and initially connect to the eHealth Exchange network.

- ▪ Shepherd current eHealth Exchange participants as they adopt new eHealth Exchange services.

- ▪ Full-time position based in the Washington, DC area or remotely anywhere in the United States.

- ▪ Send resume to HR@ehealthexchange.org

eHealth Exchange Innovation Grant

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eHealth Exchange Innovation Grant 2021
Open to eHealth Exchange Participants and Those Eligible to be Participants

Up to three (3) awards anticipated in the form of a milestone driven grant for year 1

Up to $100,000 per awardee plus year 1 eHealth Exchange Participation fees will be credited

Annual eHealth Exchange Participant fees will be waived in year 2 as long as the awardee is in full production by end of year 1

Successful Proposals Will:

- **Provide more value** to existing participants, to attract new participants, and to provide compelling communication opportunities

- **Accelerate interoperability** across the network.

- **Increase centralized data exchange** through the eHealth Exchange Hub.

Intent to Reply Due October 1st

https://ehealthexchange.org/innovation-grant-program
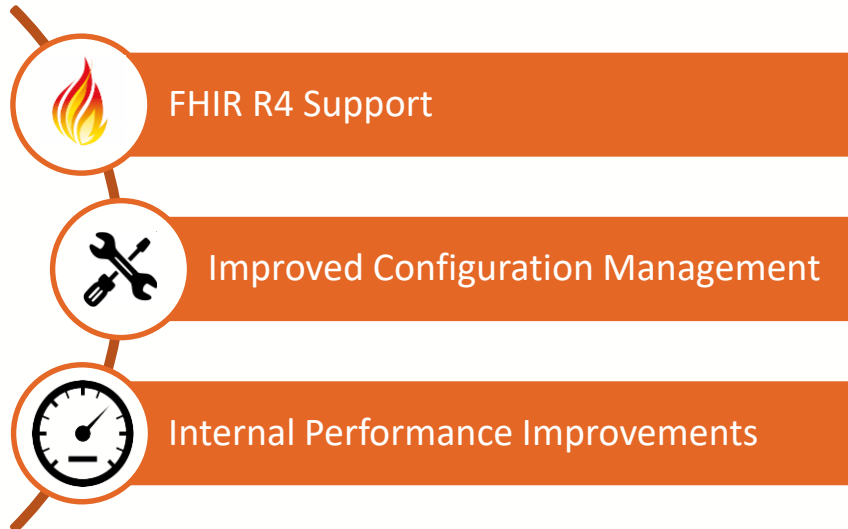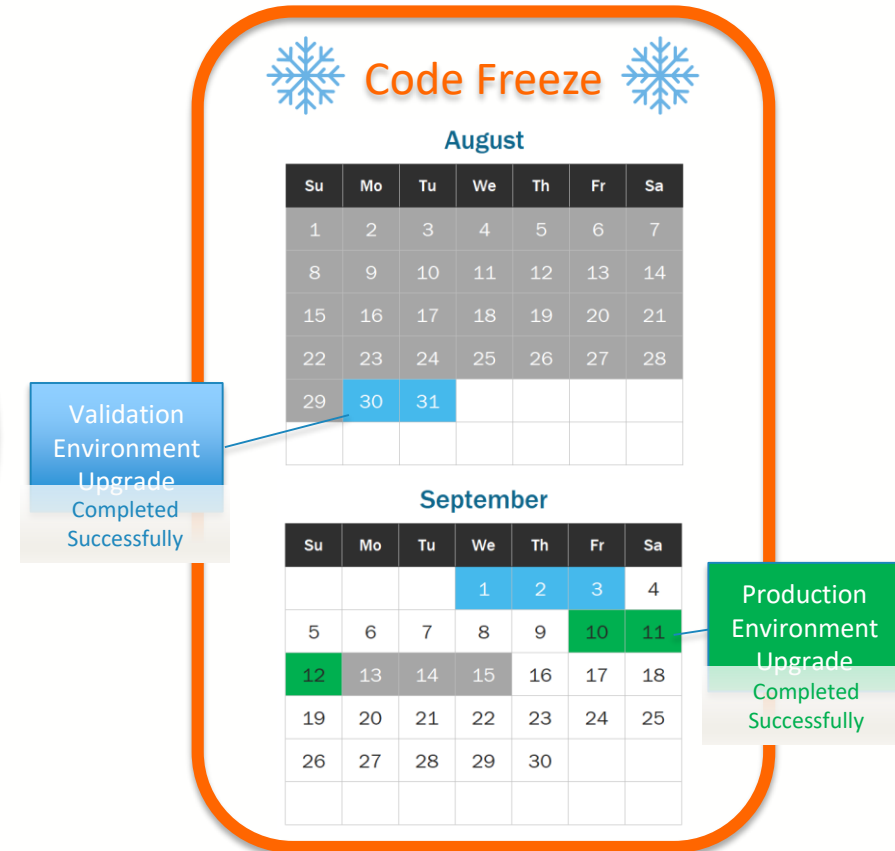
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eHealth Exchange Hub

Upgrade Project

Hub Upgrade

The upgrade project was **completed successfully as of Sep 15**, and there were no service interruptions during the upgrade events

FHIR R4 Support

Improved Configuration Management

Internal Performance Improvements

ZERO Downtime

No Service Outage

100% Availability

Code Freeze

August

Su	Mo	Tu	We	Th	Fr	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

Validation Environment Upgrade
Completed Successfully

September

Su	Mo	Tu	We	Th	Fr	Sa
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

Production Environment Upgrade
Completed Successfully

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FHIR Roadmap Highlights

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2021 Roadmap Highlights are FHIR inclusive*

FHIR Requests

Retrieve labs/meds only, USCDI fields, non-Treatment Purposes of Use

FHIR Directory

Upgrade from Argonaut Project FHIR STU 3 to FHIR R4 so EHRs and HIEs can better import participants' connectivity data
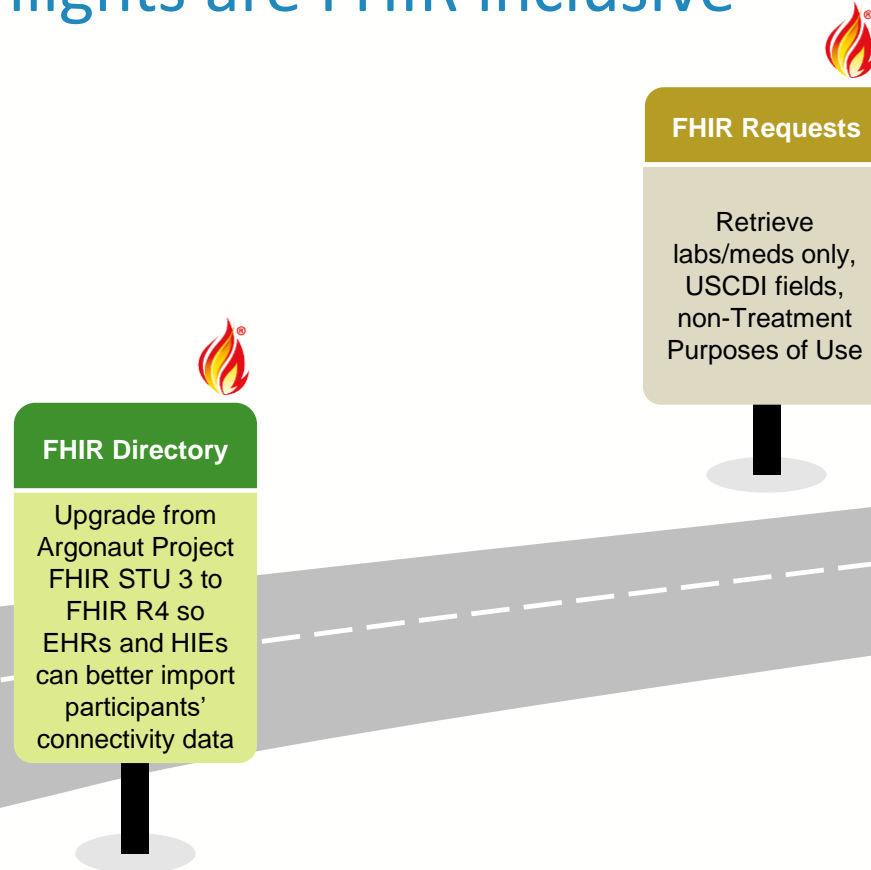
*Highlights only (not exhaustive list)
*Market disruptions may change these priorities

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FHIR Interoperability

Participants are and will continue to be at different stages in their ability to support FHIR-based data exchange. The eHealth Exchange approaches FHIR connectivity in multiple ways to enable connectivity with participants across stages

Some Participants support both FHIR Client (retrieve) and Server (provide) capabilities.

Some support FHIR Server functionality only, which includes the ability to accept FHIR writes but not consume data retrieved from a client-based request

Others may not have any FHIR support, but still want to be able to retrieve data that is made available by other Participants' FHIR Servers

Solving FHIR's Challenges

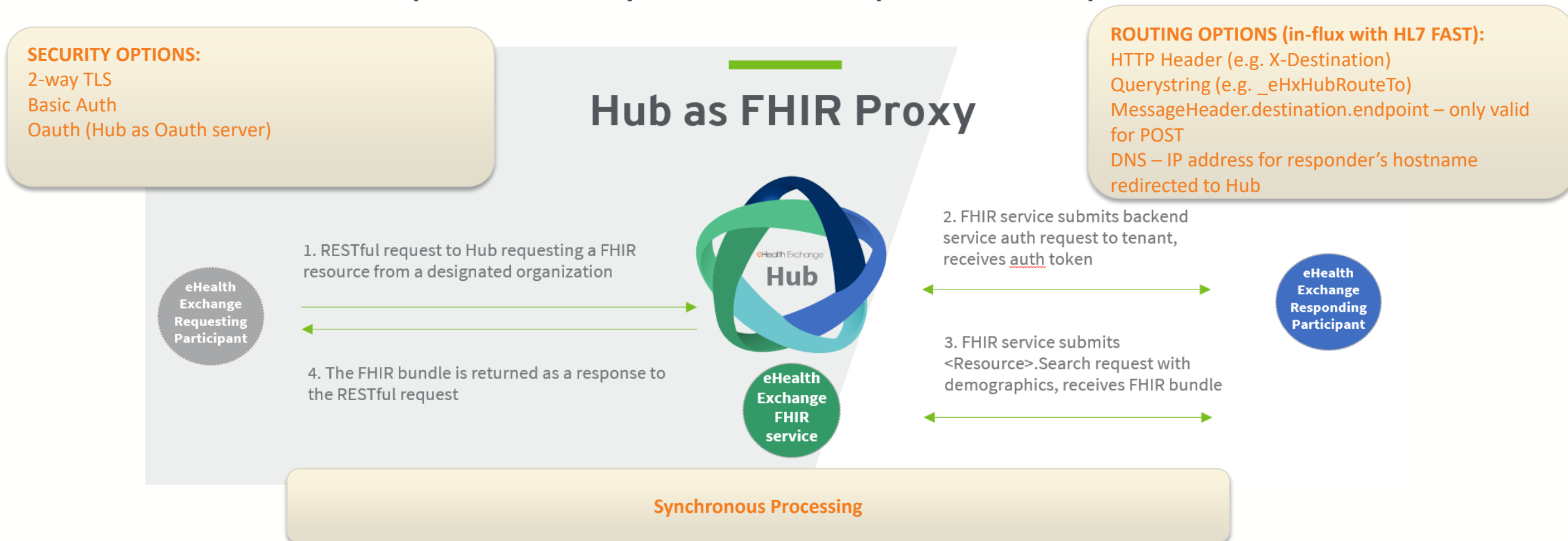| Challenge	Solution
Establishing Connectivity	eHx implements a FHIR app with each participant and manages client identity so our participants don't have to. This allows for "hub and spoke"-style connectivity rather than point-to-point; saving our participants hundreds of implementation hours
Security and Authorization	eHx authenticates with participants using OAuth2 protocols that establish a trusted relationship and validate resource authorization per-client and transaction
Data Collection and Processing	eHx enables a multi-request framework which allows requestors to receive aggregate data collected from multiple FHIR resources across multiple responders.

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FHIR Approach - Meeting Participants Where They Are

Participants are and will continue to be at different stages in their ability to support FHIR-based data exchange. Therefore we are evaluating functionality that will support a variety of patterns.

- Some Participants may support both FHIR Client and Server capabilities.
- Some may support FHIR Server functionality and the ability to accept FHIR writes - but not be able to initiate FHIR requests.
- Others may not have any FHIR support, but would still want to be able to retrieve data that is made available by other Participants' FHIR Servers.
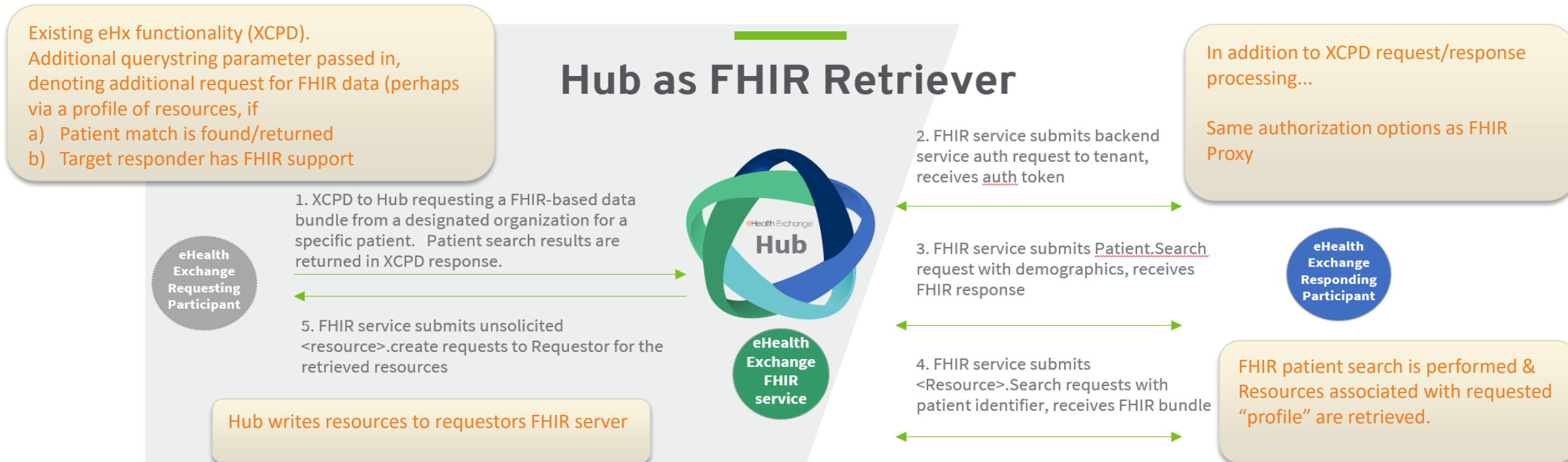
Use Case 1: Pure FHIR-based Data Exchange (passthru – on 2021 roadmap)

For Participants with ability to initiate and respond to FHIR requests

SECURITY OPTIONS:
2-way TLS
Basic Auth
Oauth (Hub as Oauth server)

ROUTING OPTIONS (in-flux with HL7 FAST):
HTTP Header (e.g. X-Destination)
Querystring (e.g. _eHxHubRouteTo)
MessageHeader.destination.endpoint – only valid for POST
DNS – IP address for responder's hostname redirected to Hub

Hub as FHIR Proxy

eHealth Exchange Requesting Participant

1. RESTful request to Hub requesting a FHIR resource from a designated organization

4. The FHIR bundle is returned as a response to the RESTful request

eHealth Exchange **Hub**

eHealth Exchange FHIR service

2. FHIR service submits backend service auth request to tenant, receives auth token

3. FHIR service submits <Resource>.Search request with demographics, receives FHIR bundle

eHealth Exchange Responding Participant

Synchronous Processing

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Use Case 2: SOAP-based Request / FHIR-based Response

For Participants with ability to allow authorized external entity to write FHIR resources

Existing eHx functionality (XCPD).
Additional querystring parameter passed in, denoting additional request for FHIR data (perhaps via a profile of resources, if
a) Patient match is found/returned
b) Target responder has FHIR support

In addition to XCPD request/response processing...

Same authorization options as FHIR Proxy

Hub as FHIR Retriever

1. XCPD to Hub requesting a FHIR-based data bundle from a designated organization for a specific patient. Patient search results are returned in XCPD response.

2. FHIR service submits backend service auth request to tenant, receives auth token

3. FHIR service submits Patient.Search request with demographics, receives FHIR response

5. FHIR service submits unsolicited <resource>.create requests to Requestor for the retrieved resources

4. FHIR service submits <Resource>.Search requests with patient identifier, receives FHIR bundle

eHealth Exchange Requesting Participant

eHealth Exchange Hub

eHealth Exchange FHIR service

eHealth Exchange Responding Participant

Hub writes resources to requestors FHIR server

FHIR patient search is performed & Resources associated with requested "profile" are retrieved.

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Use Case 3: Hub Transforms FHIR to CDA (SOAP request / SOAP response)

Participants with no native FHIR support

Existing eHx Query-Based Exchange pattern is used by the Initiator/Requestor. No change to their workflow.

"Meeting the Participant where they're at"…

XCA Query will be performed as-is.

Hub Transforms FHIR to CDA

eHealth Exchange Hub

eHealth Exchange FHIR service

eHealth Exchange Requesting Participant

eHealth Exchange Responding Participant

1. XCA Query to Hub requesting list of available documents *and* FHIR resources from a designated organization for a specific patient.

5. List of available documents is returned in XCA Query response. If applicable a document reference for any available FHIR resources is also included in the RegistryObjectList.

6. XCA Retrieve request sent to Hub, requesting document that references FHIR resources.

7. Hub transforms FHIR resources into CDA and returns to requestor

2. Hub forwards XCA Query to target and retrieves list of available documents

3. FHIR service submits Patient.Search request with demographics, and identifies FHIR resources available

4. Hub creates and adds document reference to XCA Query response — representing FHIR resource data that is available
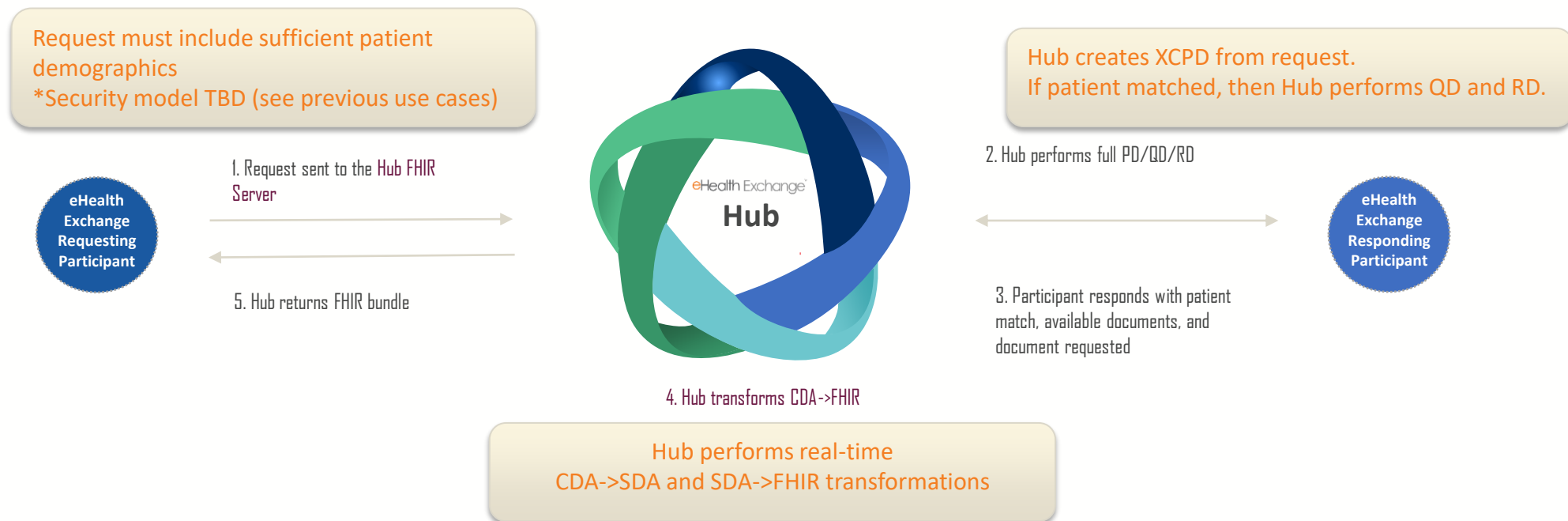
If target responder supports FHIR, Hub will initiate FHIR-related calls to identify and retrieve resources into Hub's FHIR Resource Repository

Existing XCA Retrieve, Hub will recognize if document reference is Hub-based, retrieve from Hub Resource Repository, transform FHIR->SDA->CDA, and return

Hub augments XCA Query response to include additional reference to FHIR data

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Use Case 4: Hub Transforms CDA to FHIR (FHIR request / FHIR response)

FHIR-based Initiators interacting with Responders who have no FHIR support

Request must include sufficient patient demographics
*Security model TBD (see previous use cases)

Hub creates XCPD from request.
If patient matched, then Hub performs QD and RD.

eHealth Exchange Requesting Participant

1. Request sent to the Hub FHIR Server

5. Hub returns FHIR bundle

Hub

2. Hub performs full PD/QD/RD

3. Participant responds with patient match, available documents, and document requested

eHealth Exchange Responding Participant

4. Hub transforms CDA->FHIR

Hub performs real-time
CDA->SDA and SDA->FHIR transformations

Content Validation Update

Content Validation Program Communications Update

- Out of 280 Participants required to pass Content Testing by May 1, 2021:
  - **89% or 250** Participants are @ Content Validated Status as of September 8, 2021
  - Content validated logos added in real time to Participant listing on eHealth Exchange website:
    - https://ehealthexchange.org/participants/
  - **13** technologies leveraged
    - Audacious Inquiry, Cerner CEP, CONNECT, Diameter Health, Epic, Guardian, Health Catalyst, Intersystems, Lightbeam, Mirth, Nextgen, Orion, SSI, Zen Health
  - 30 Waivers/Extensions Requested and Approved Remaining
    - Waiver Text was added to all approved Participants

  NOTES:
  Content testing waiver granted to 12/31/21

- Content Testing Value Sets were updated 8/10/21 to align with VSAC Annual Update for C-CDA R2.1 https://gazellecontent.sequoiaproject.org/EVSClient/home.sea

- United Stated Core Date for Interoperability (USCDI) version 1 Validator was added to the Sequoia Interoperability Testing Platform (ITP). This USCDI validator is provided for Participant use but testing content against it is voluntary and passing is NOT required by eHealth Exchange

Breakdown of Documents Tested by Meaningful Use Version & Standard

- 19,978 Documents Tested as of September 8, 2021
  - 86% Failing
  - 14% Passing
- Breakdown of Documents Tested by Validator Version
  - 56% or 11,259 tested against the Meaningful Use 2015 Edition/HL7 C-CDA R2.1
  - 14% or 2,673 tested against the Meaningful Use 2014 Edition/HL7 C-CDA R1.1
  - 25% or 5,067 tested against the Meaningful Use 2011 Edition/HL7 C-32
  - 5% or 979 tested against the CDA R2 validator

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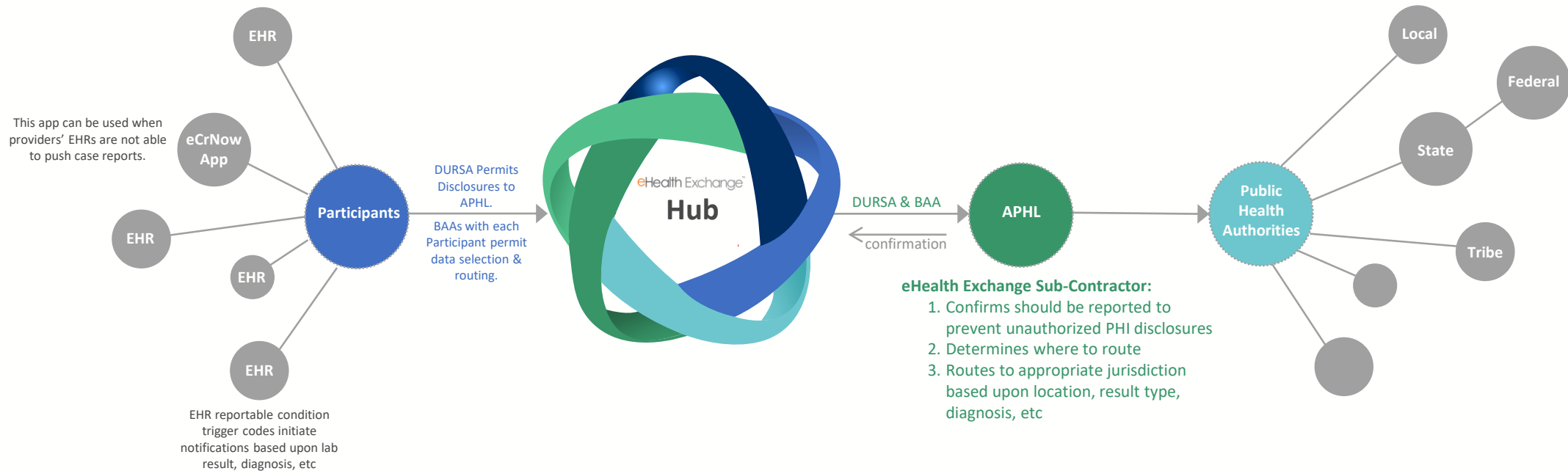
FHIR R4 Project Update

Transition to FHIR R4

- We are currently working on some changes to the FHIR R4 IG that require collaboration between eHealth Exchange and Carequality. These changes will be delivered to Lantana when complete. This will delay implementation by a few weeks

- The Directory Self-Service Portal for Participants (GUI) is in process. This will allow Participants to make changes to the Directory without eHX intervention. Currently the UI/UX vendor is working with Lantana to implement wire frames for this tool

- We continue to work on an implementation plan for the HAPI environment and FHIR R4 Directory with STU3 transforms

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eCR Update

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Pushing Electronic Case Reports (eCr) is **Live**!

This app can be used when providers' EHRs are not able to push case reports.

EHR

eCrNow App

EHR

EHR

EHR

Participants

EHR reportable condition trigger codes initiate notifications based upon lab result, diagnosis, etc

DURSA Permits Disclosures to APHL.

BAAs with each Participant permit data selection & routing.

Hub
eHealth Exchange

DURSA & BAA

confirmation

APHL

eHealth Exchange Sub-Contractor:
1. Confirms should be reported to prevent unauthorized PHI disclosures
2. Determines where to route
3. Routes to appropriate jurisdiction based upon location, result type, diagnosis, etc

Public Health Authorities

Local

Federal

State

Tribe

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eCR is LIVE!

eCR is live at no additional cost to your organization. To onboard, follow these steps:

1. Confirm your gateway supports ITI-41 & ITI-80.

2. Confirm you have completed Hub Initiator Testing.

3. Notify administrator@ehealthexchange.org your organization wants to push electronic case reports to APHL (Association of Public Health Laboratories).

4. eHealth Exchange will provide an introduction to the AIMS team, as well as an onboarding checklist of about 7 questions.

5. The checklist will ask for your Push Notification Endpoints (aka RR endpoints) for both Val and PRD, as well as your IP addresses for both VAL and PRD.

6. eCR testing is required to be conducted in a VAL environment, so we will need to confirm that your validation certificate is installed and not expired.

7. APHL/AIMS will also provide some needed documentation on their side. Your organization will be asked to join a pre-scheduled cohort call to discuss progress, troubleshooting, and timelines.

8. Once testing is complete in VAL, the functionality will be activated in PRD on a scheduled "go-live" date.

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Certificate Authority Update

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THE END IS NEAR.

- **There will be NO ENTRUST Certificates issued after October 1, 2021, even in an emergency situation.**

- **All Entrust certificates will be decommissioned as of November 1, 2021.**

- If you are currently running an Entrust certificate, please reach out to techsupport@sequoiaproject.org to start the transition process ASAP!

- We will continue to provide outreach to individual Subscribers throughout September.

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What do I need to do?

- All Participants MUST have updated their trust stores to include the new CA trust bundles. If your organization has not yet completed this step, please do so **ASAP! Failure to do so will cause connectivity issues with organizations.**

- If you have not received that outreach and your certificate is still an Entrust certificate, please send an e-mail to techsupport@sequoiaproject.org so that we can facilitate the intro as soon as possible.

- Please note that the new process will involve new Identity Proofing steps and certificate agreements. Your organization will be assigned a Certificate Authority vendor and will receive the appropriate forms once the CA vendor is assigned.

- The transition off of all Entrust certificates is scheduled to be completed November 2021.

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What does the new process look like?

- After you've received an introduction and returned the needed spreadsheet, DirectTrust will assign you to one of two CA's:
  - MaxMD
  - EMRDirect
- Your organization does not get to request a specific CA, this is assigned by DirectTrust.

- DirectTrust will provide instructions for your Sponsor to complete Identity Verification through your assigned CA.   Identity Proofing is not required for VAL certs.

- Once Identity Proofing is completed, a link will be provided for the Sponsor to retrieve the certificate.

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Please Engage!

We'd love to hear from you

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Technical Work Group

Thursdays 4-5 ET.

Typical Topics:

1. Technical Specification Creation

    a. Push notifications

    b. Populating directory with hospital locations

    c. Broadcast query

    d. FHIR Directory

    e. Consumer access

    f. Carequality harmonization

    g. Controlled Unclassified Information (CUI) Marking

2. Testing

3. Hub Updates

4. Capacity planning [Final Thursday each month]

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How might I obtain additional information?

How	When	Where
1. Visit eHealth Exchange Web Site	Any time	https://ehealthexchange.org
2. Monthly Participant Web Meetings	Typically, the 3rd Thursday of Each Month at 1 pm ET	https://ehealthexchange.org/events
3. Weekly Technical Workgroup	Thursdays 4-5 ET (April though August+)	https://ehealthexchange.org/events
3. Email	Any time if you have a specific question	administrator@ehealthexchange.org

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Questions & Answers