



Canada Health Infoway

Projectathon Day 3

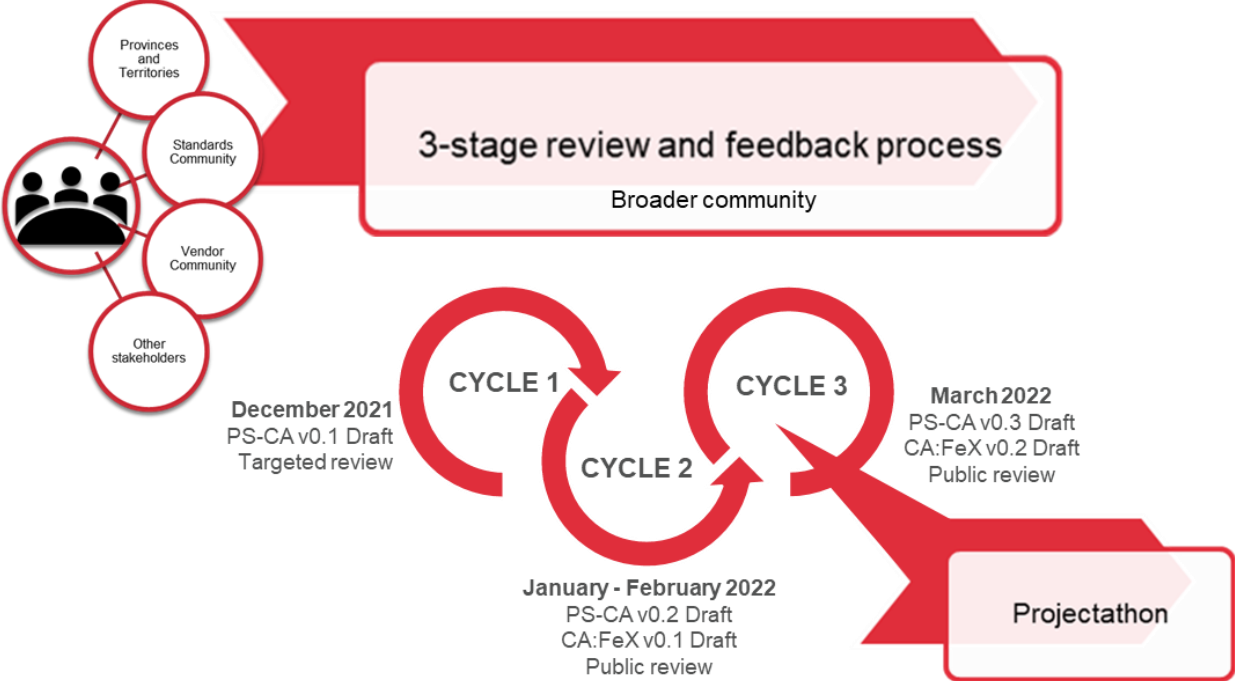
Programming Slides

March 23, 2022

Agenda

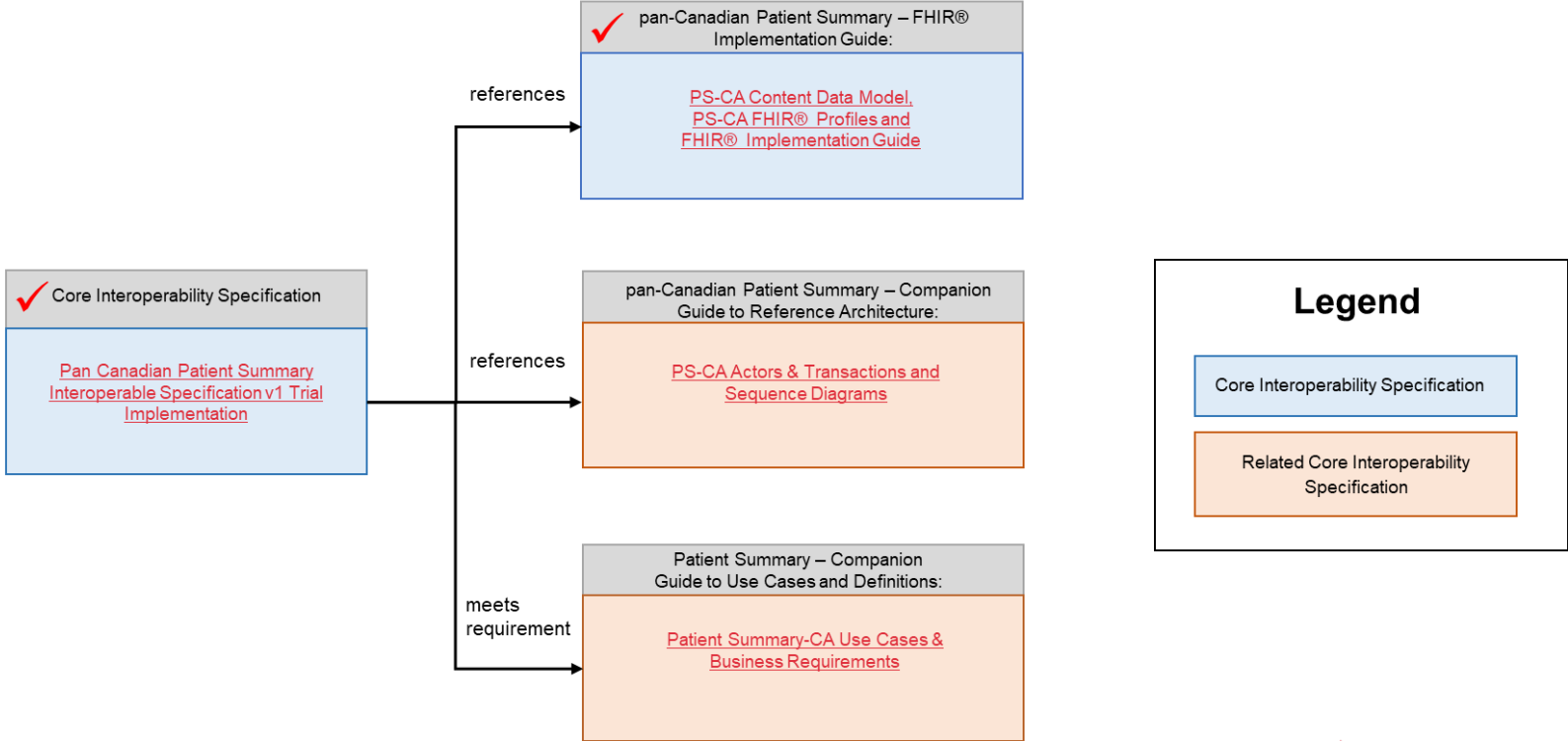
#	Activity	Objectives	Time (EST)
1	Welcome	<ul style="list-style-type: none">• Provide update on Day 1&2• Outline the day's programming	10:45 – 11:00
2	FHIR Content Data Model – Facilitated Roundtable	<ul style="list-style-type: none">• Discuss implementer experience with PS-CA and CA:FeX including mapping native application data to the new FHIR profiles	11:00 – 11:45
3	Supporting Profiles for PS-CA – Facilitated Roundtable	<ul style="list-style-type: none">• Successful exchange of Patient Summaries is likely to depend on a number of supporting services – explore some examples and learn future needs	12:00 – 12:45
Break			
4	Approaches to document management – Facilitated Roundtable	<ul style="list-style-type: none">• Discuss implementer experiences and approaches available for handling patient's longitudinal record, specifically focused on document format	1:30 – 2:15
5	Clinical Workflow – Facilitated Roundtable	<ul style="list-style-type: none">• Share outcomes of previous clinician sessions• Discuss vendor experiences with supporting clinical workflows, specifically related to Patient Summaries	2:30 – 3:15
6	Wrap-Up	<ul style="list-style-type: none">• Discuss overall key learnings from the event• Discuss next steps	3:30 – 4:00

Review Cycles



Projectathon Focus: Patient Summary PS-CA

The [pan-Canadian Patient Summary specification \(PS-CA\)](#) is a level 2 specification



Projectathon Focus – Day 1&2

Profiles that are subject to testing based on vendor registration include CA:FeX, MHD, XDS, IUA, ATNA, CT, and PIX.

	Allscripts	CERNER	Juniper	SmileCDR	EPIC	Infoway*
Allscripts		IUA		CA:FeX		
CERNER	IUA CA:FeX		IUA CA:FeX	CA:FeX	XDS	CA:FeX MHD
Juniper		CA:FeX MHD		CA:FeX		CA:FeX MHD
SmileCDR	IUA	IUA	IUA			
EPIC		XDS				
Infoway*		CA:FeX MHD	CA:FeX MHD			



Part 1: March 21 & 22: Peer to Peer Testing

In this phase of testing, participating vendors can work with partners to execute the test steps for the desired profiles

*Infoway will provide CA:FeX and MHD simulators in case vendors cannot find a partner, or want to do multiple tests



Pan-Canadian Projectathon, March 2022

Day 2 Summary



Canada Health Infoway
Inforoute Santé du Canada

Day 2 Projectathon Dashboard - Overall Test Execution Summary

	Test Instance Execution Summary			Total
	# of Tests Verified	# of Tests Partially Verified	# of Tests In Progress	
CA:FeX	8	-	3	11
MHD	4	1	10	15
XDS.b	-	-	12	12
ATNA	4	1	1	6
CT	-	-	1	1
PIXV3	1	-	-	1



FHIR Content Data Model

Facilitated Roundtable





Content Data Model: PS-CA Building Blocks

Patient Summary-CA: Data Domains of Interest by Canadian Jurisdiction and Release

	IPS-UV	PS-CA	AB	BC	MB	NL	ON	SK	Release 1	Release 2+
Header	Subject	Subject								+
	Author	Author								+
	Attester	Attester								+
	Custodian	Custodian								+
Required	Medication Summary	Medication Summary								+
	Allergies and Intolerances	Allergies and Intolerances								+
	Problem List	Problem List								+
Recommended	Immunizations	Immunizations								+
	History of Procedures	History of Procedures								+
	Medical Devices	Medical Devices								
	Diagnostic Results	Diagnostic Results								
Optional	Vital Signs	Vital Signs								+
	Past history of Illness	Past History of Illness								+
	Social History	Social History								+
	Advance Directives	Advance Directives								
	Pregnancy	Pregnancy								
	Functional Status	Functional Status								
	Plan of Care	Plan of Care								
EXT	Extension(s)									
	Family History									

Notes:
 • Coordinating table discussion for October 7th: Approval to move Medical Devices and Diagnostic Results to Release 2.
 • Release 1: Includes the highlighted data domains.
 • Release 2: Includes the data domains from Release 1, including Release 2 roadmap items, and the highlighted data domains that were not included in Release 1.



Content Data Model



- FHIR Profiles:** What challenges did you encounter with the existing data model constraints (e.g., *MS flags, codeableConcept expectations, composition sections*)?
- How and where did these show up in the rendered PS-CA/outputs of testing?



- Terminology:** What challenges & opportunities does the proposed terminology present to vendor implementers?
- How can we make pan-Canadian terminology more accessible to incorporate into test & production systems?



- Release Cadence:** How much lead time do vendors need to incorporate new specification releases into their systems?
- What are the maturity indicators that guide vendor decision to adopt a newer release of the specification?

Exchange Interface – Actors/Transactions

PS-CA Actor	Required IHE Supporting Profiles (Actors)	Optional IHE Supporting Profiles (Actors)
Option 1: Document Repository using MHD		
PS-CA Producer	MHD Document Source	IUA, SVCM PDQm (Consumer)
Document Repository	MHD Document Recipient	
Central Infrastructure		PMIR (Patient Identity Registry)
PS-CA Consumer	MHD Document Consumer	IUA, SVCM PDQm (Consumer) CA:FMT (Client)
Option 2: FHIR HIE		
PS-CA Producer	CA:FeX (Data Source)	IUA, SVCM PDQm (Consumer)
Document Repository	CA:FeX (Data Recipient, Data Responder)	
Central Infrastructure		PMIR (Patient Identity Registry)
PS-CA Consumer	CA:FeX (Data Consumer)	IUA, SVCM PDQm (Consumer) CA:FMT (Client)

Transactions by Option
Option 1 Transactions
Save PS-CA to Document Repository <ul style="list-style-type: none"> • Provide Document Bundle [ITI-65]
Retrieve PS-CA from Document Repository <ul style="list-style-type: none"> • Find Document Lists [ITI-66] • Find Document References [ITI-67] • Retrieve Document [ITI-68]
Option 2 Transactions
Save PS-CA to Document Repository <ul style="list-style-type: none"> • Submit Data [CA:FeX-1]
Retrieve PS-CA from Document Repository <ul style="list-style-type: none"> • Search Data [CA:FeX-2A] • Retrieve Data [CA:FeX-3A]

Exchange Interface – Round Table

Specification Clarity

Clear expectations for the following:

- Required and optional Profiles, Actors and Transactions
- Supported and required Query parameters
- Responses – content (e.g., search results), error codes
- Other transaction content (expected actions, semantics, etc.)

Transaction Patterns

- Specified patterns align with existing/previously planned product capabilities
- What factors driving selection of implementation options?
- Is there a need for a different pattern?

Implementation support

- Additional specification content and collateral? Supporting services? Reference architecture? Reference Implementation? Training? Other?

Open Q&A



Any Questions from the Audience?

Appendix: Screenshot of Rendered PS-CA

Patient Summary Data

Paste the Patient Summary JSON or XML here, or [Load from a file](#)

Please do not include any PI/PHI into the documents.

[View PS-CA](#)

```
1 [{"resourceType": "Bundle", "id": "Bundle-01", "meta": {"profile": ["http://fhir.infoway-i
```

Patient Summary View

Composition	Patient	Condition	Allergies	Procedure
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Condition (1)

Condition: Hypertensive disorder

Status: active

Condition Details:

Name	Code	Display	System
Clinical Status	active	Active	http://terminology.hl7.org/CodeSystem/condition-clinical
Category	problem-list-item	Problem List Item	http://terminology.hl7.org/CodeSystem/condition-category
Code	38341003	Hypertensive disorder	http://snomed.info/sct

Code Text: Hypertensive disorder, systemic arterial (disorder)

Condition (2)

Onset Period: Start: 2012-12-06T20:50:21-05:00 - End: 2021-08-22T05:15:54-04:00

Recorded Date: 2013-03-10T09:43:23-04:00

Condition: Type 2 diabetes mellitus

Severity: Moderate

Status: active

Condition Details:

Name	Code	Display	System
Clinical Status	active	Active	http://terminology.hl7.org/CodeSystem/condition-clinical
Verification Status	confirmed	Confirmed	http://terminology.hl7.org/CodeSystem/condition-ver-status
Category	problem-list-item	Problem List Item	http://terminology.hl7.org/CodeSystem/condition-category
Severity	6736007	Moderate	http://snomed.info/sct
Code	44054006	Type 2 diabetes mellitus	http://snomed.info/sct

Code Text: Diabetes mellitus type 2 (disorder)

Stage Details:

Name	Code	Display	System
Stage Summary	60333009	Clinical stage II	http://snomed.info/sct
Stage Type	60333009	Clinical stage II	http://snomed.info/sct

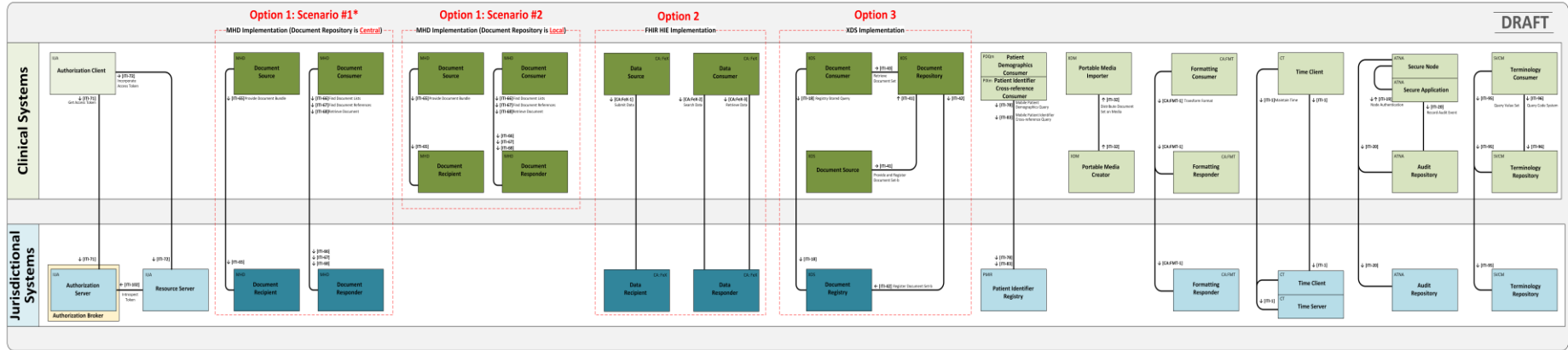
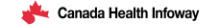
Supporting Profiles for PS-CA

Facilitated Roundtable



Reference Architecture

Patient Summary-CA Release 1
Integration Profiles (Required / Optional)



DRAFT

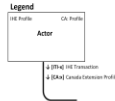
IHE Profiles

- IUA Internet User Authorization
- MHD Mobile access to Health Documents
- XDS Cross Enterprise Document Sharing
- PMIR Patient Master Identity Registry
- PDQm Patient Demographics Query for Mobile
- PIIm Patient Identifier Cross-Reference for Mobile
- XDM Cross-enterprise Document Media Interchange
- ATNA Audit Trail and Node Authentication
- CT Consistent Time
- SVMC Sharing ValueSets, Codes and Maps

Canadian National Integration Profile(s)

- CA:FeX FHIR Exchange
- CA:FMT Formatting Support Service

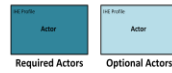
*Preferred Option



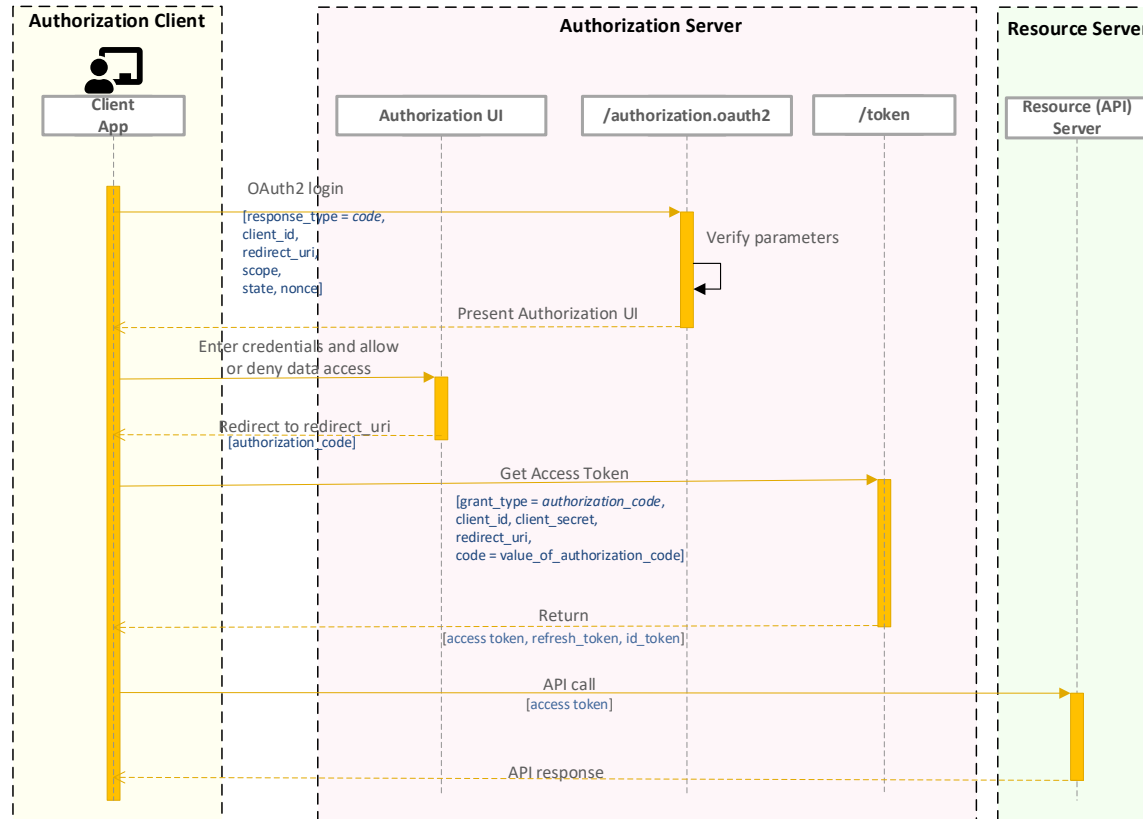
Clinical System Actors



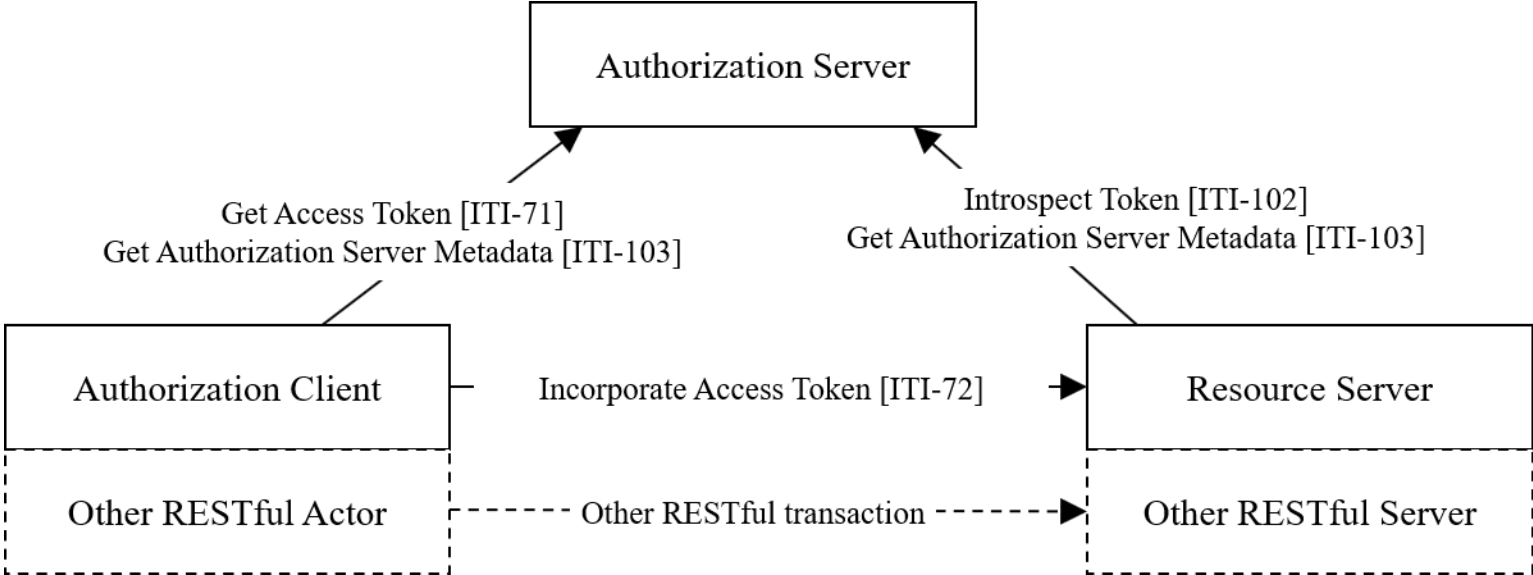
Jurisdictional System Actors



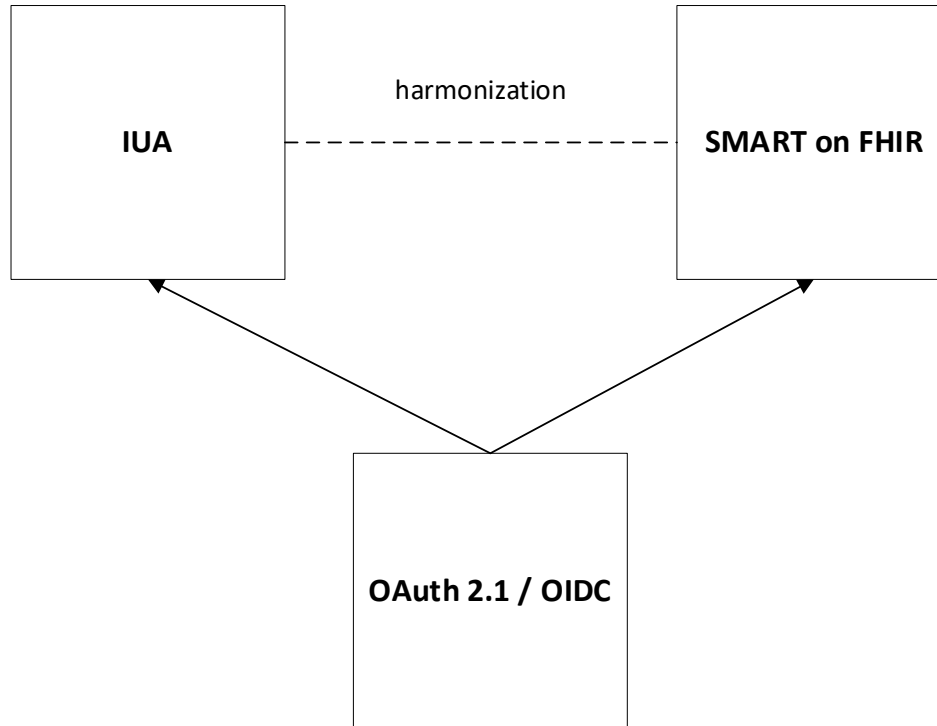
OAuth 2.1 refresher (authorization code flow)



IUA - Internet User Authorization

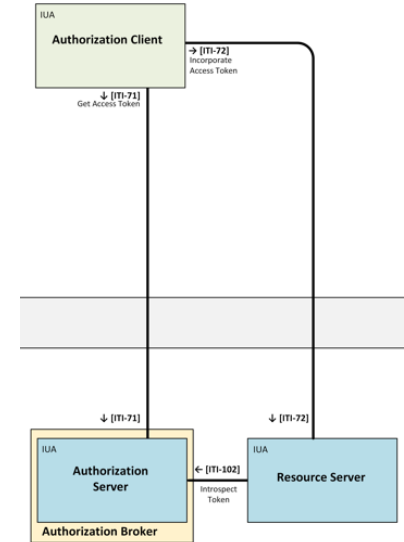


IUA and SMART on FHIR



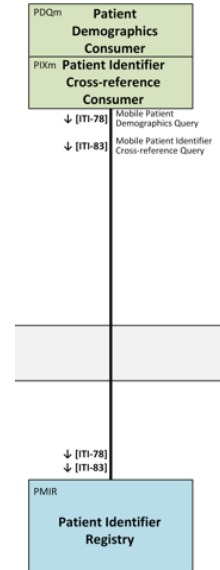
Internet User Authorization (IUA)

- IUA and its role in supporting access controls
- Experience in blending Access tokens with the FHIR APIs
- Experience in using IUA with SMART on FHIR - demo
- What do the real world environments looking like?
- International deployments, support for CA:FeX, MHD, what supporting services help facilitate FHIR exchanges?



Patient Identification (PIXm/PDQm)

- International experience in patient identification
- Are services such as PIX/PDQ employed in the realms you operate in?

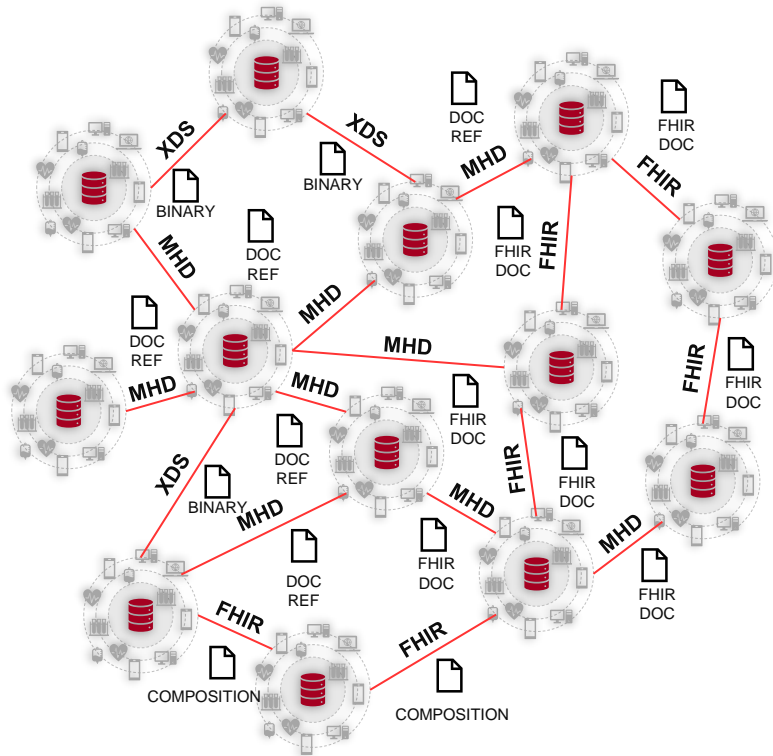




Approaches to Document Management

Facilitated Roundtable

A Heterogeneous Ecosystem and the Patient Record



The complexity grows as new implementation patterns emerge.

With such a heterogeneous health ecosystem, it may not be realistic for all systems to converge on a single way of doing things.

Vendors cannot change established implementations overnight. So how do we manage this long-term transition?

What is your lived experience?

Topic 1: FHIR-Based Integrations

Are there examples of a health ecosystem that is largely based on pure FHIR-based integrations? What are the patterns that you see emerging? How are you managing the wide variety of documents?

Topic 2: Heterogeneous Gateways

How should the heterogeneity of the ecosystem be dealt with among members? What are some of the approaches to establishing mixed gateways (e.g., MHD and FHIR-based vendors)?

Topic 3: Transitioning to FHIR

How does the transition to FHIR affect your business? What are some of the key considerations that standard developers and PTs should be aware of during this transition period?

Topic 4: Understanding the Choices

In regions, such as the US and Europe, XDS has become the backbone for document exchange. How do these health ecosystems evolve with emerging implementation patterns? Are there gaps or key benefits we may be giving up if vendors move away from XDS in the future?

How do we make the right choices?

Topic 5: Making Informed Decisions

How will we help information custodians make the appropriate choice? Is it as simple as separating the greenfield opportunities from the established ecosystems?

Heterogeneity:

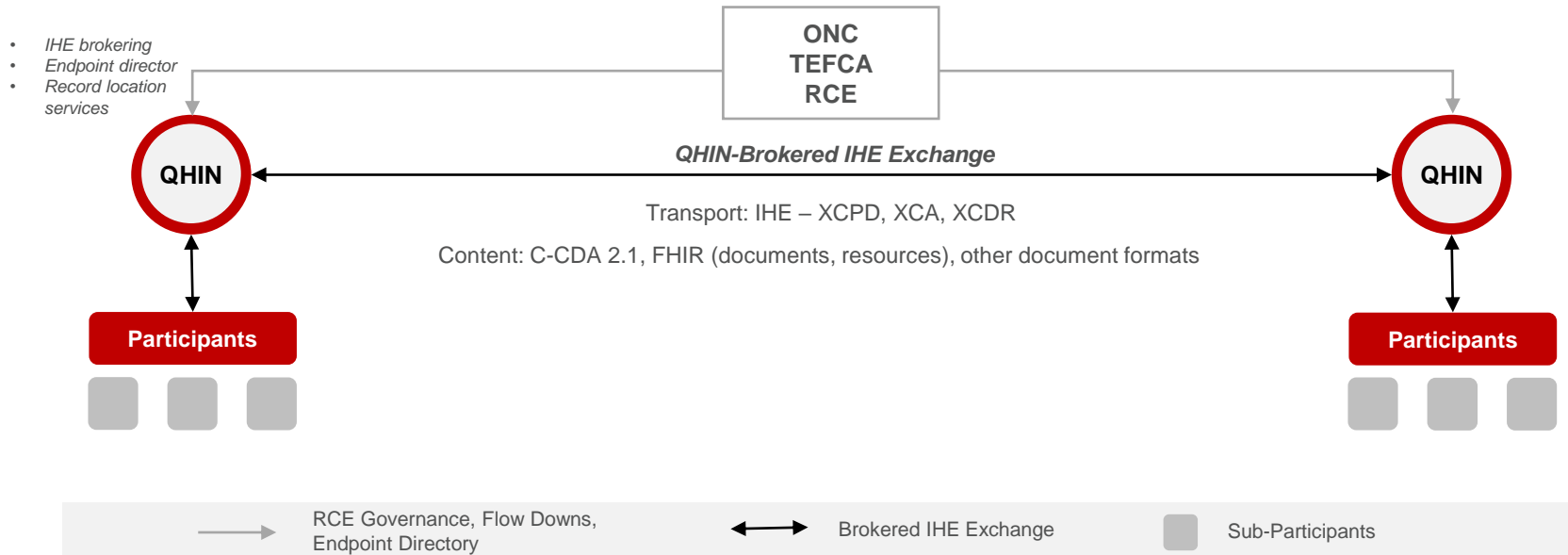
Exchange Standards



Standards are evolving to manage FHIR adoption

The ONC understands the need to manage the emerging adoption of FHIR and adapt exchange standards appropriately – they will first start with the payload.

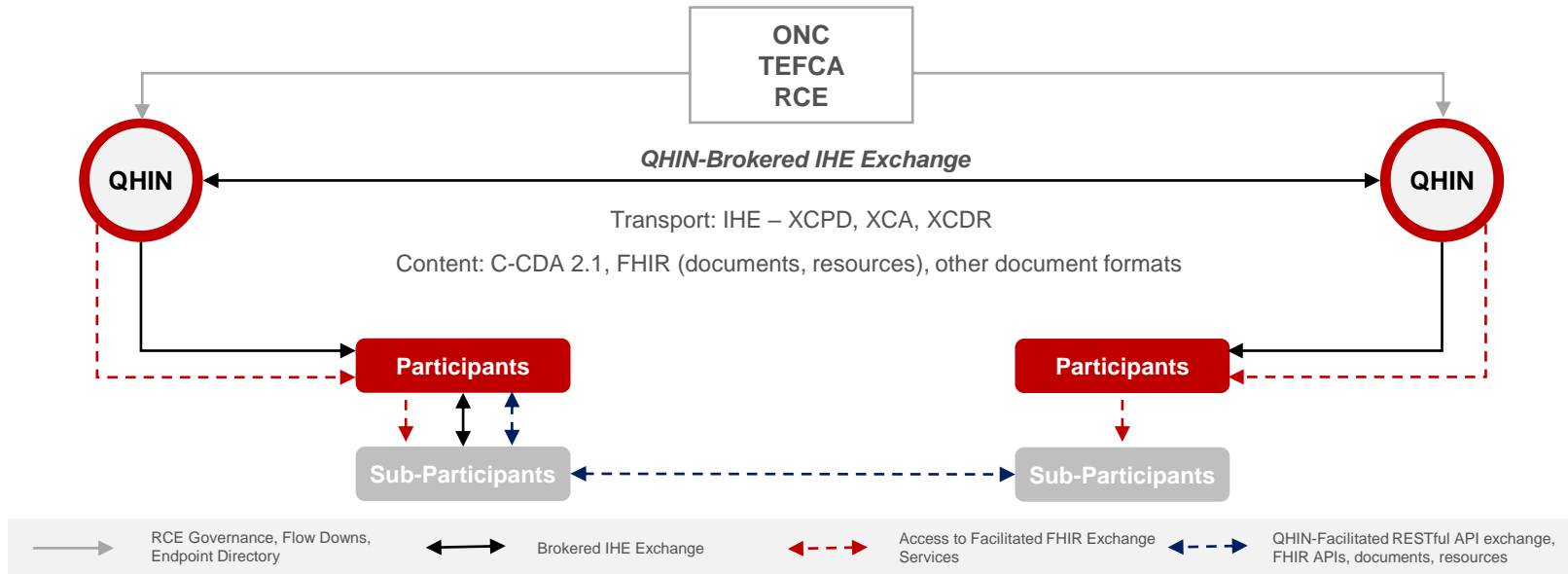
Stage 1: Enabling FHIR Content Exchange



Standards are evolving to manage FHIR adoption

Once content of both old and new formats can be managed, the ONC will shift its attention toward FHIR exchanges within the network and the appropriate services to bridge the gap.

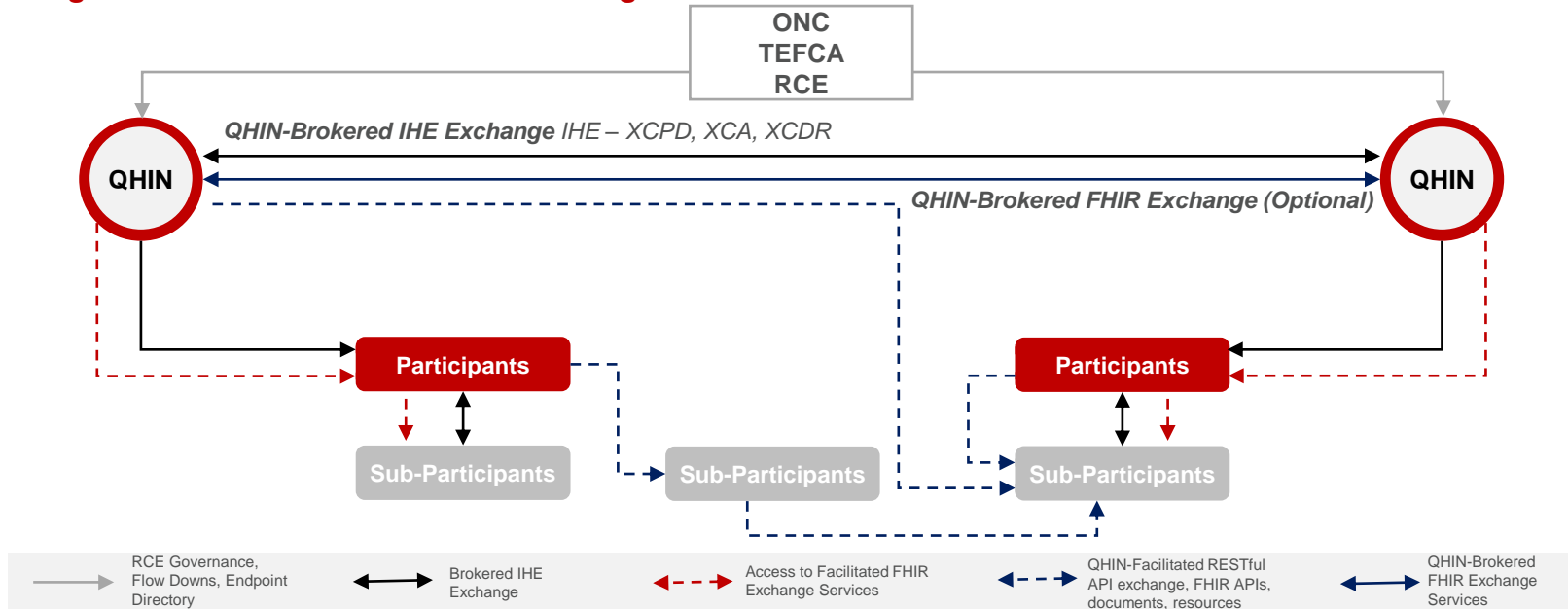
Stage 2: Network-Facilitated FHIR Exchange



Standards are evolving to manage FHIR adoption

The ONC is in favour of optionality with a long-term vision of providing legacy IHE exchange patterns in addition to the appropriate services and infrastructure to broker and facilitate new, FHIR exchanges across networks.

Stage 3: Network-Brokered FHIR Exchange



Clinical Workflow

Facilitated Roundtable



Objectives

1. Share outcomes of previous pan-Canadian Patient Summary clinician sessions
2. Discuss vendor experiences and near-term opportunities to improve integration of Patient Summaries into existing clinical workflows



Pan-Canadian Patient Summary (PS-CA)

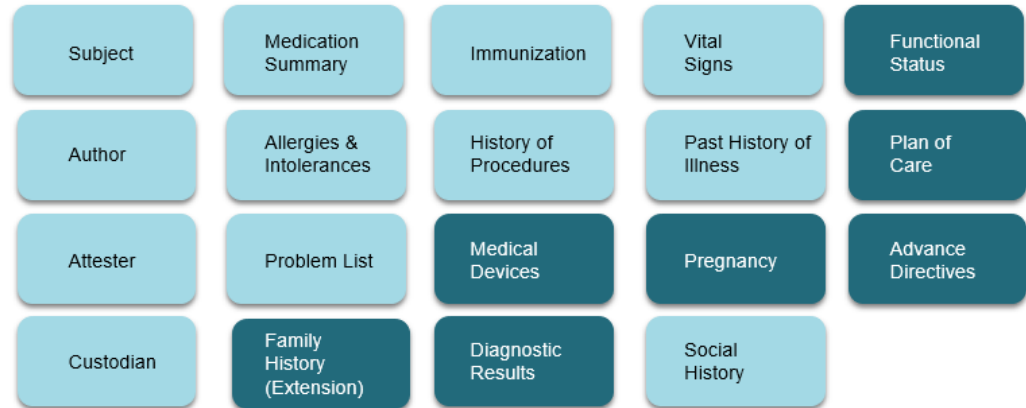


An electronic Patient Summary for use at the **point of care** comprised of, at minimum, the required elements of the Patient Summary-CA data set and specifications.

The PS-CA is a **health record extract**, at a **snapshot in time**, comprised of a **standardized collection** of clinical and contextual information (retrospective, concurrent, prospective), including the **minimum necessary** and **sufficient data** to inform a patient's treatment at the **point of care**.

The Patient Summary is condition-**independent** and **specialty-agnostic**, irrespective of the **condition** of the patient or the treatment sought or specialty of the provider delivering care.

Proposed Content:



Release Roadmap

■ Release 1 ■ Release 2

Discussion topics from previous clinician sessions



Clinical Topics



**GAINING ACCESS
TO A PATIENT
SUMMARY**



**POLICY &
REGULATIONS**



**IMPACTS TO
CLINICAL
WORKFLOWS**



**OMITTING DATA
FROM PATIENT
SUMMARY DUE TO
CONFIDENTIALITY**



**APPROACH TO
TERMINOLOGY**



**PERSISTENCE
OF THE PATIENT
SUMMARY**



**EXTRACTING
DATA FROM THE
PATIENT
SUMMARY**



Impacts to Clinical Workflows & Approach to Terminology



WHAT WE ASKED THE CLINICIANS:

- What impacts to clinical workflows must be considered when either producing or consuming a Patient Summary?
- What are the qualities we should be looking for in “low-hanging fruit” opportunities to align terminology?

WHAT WE HEARD FROM THE CLINICIANS:

The Patient Summary must:

- be seamlessly **integrated into existing workflows** and not create additional administrative burden.
- focus on **what will make the most clinical difference**. Challenge to “get it right” with free-text and coded values locally before introducing cross-border care.
- **not add additional data entry and complexity** of entering coded data (e.g., consider options such as artificial intelligence, important that a clinician can choose to see the free-text, not just a coded value)
- find a **balance** between keeping the PS relevant / up to date but not onerous for the primary physician
- consider **Patient access** and ability to contribute to their own Patient Summary

Policy, Regulations & Persistence of the Patient Summary



WHAT WE ASKED THE CLINICIANS:

- What are important considerations for Policy and Regulations of the Patient Summary that clinicians care about?
- Would clinicians trust the data of a system that has multiple Patient Summaries for each provider that is responsible for that patient?

WHAT WE HEARD FROM THE CLINICIANS:

The Patient Summary should:

- be **trustworthy**: Clinicians should be able to trust that the system creating the Patient Summary will apply the necessary guidelines according to their jurisdictional policies and regulations (e.g., privacy legislation, regulations from physician colleges, regulatory frameworks from ministries) ensuring that the clinician does not have to figure out all the rules and regulations and that physician obligation/liability, with respect to updates, is clearly understood.
- be one summary of information that is **simple and easy to scan**. It should not contain multiple layers of information.
- consider option to **identify new /changed information** (e.g., provide a flag for new information / differences between Patient Summaries, identified by date.
- contain **information from more than one source of truth**, ensuring the most up-to-date information
- consider if a document may **persist x5** (i.e., from five different people) or **no document** exists and only the data is accessible at the point of care when needed.

Round-table Discussion: Vendor Perspective



Impacts to Clinical Workflows

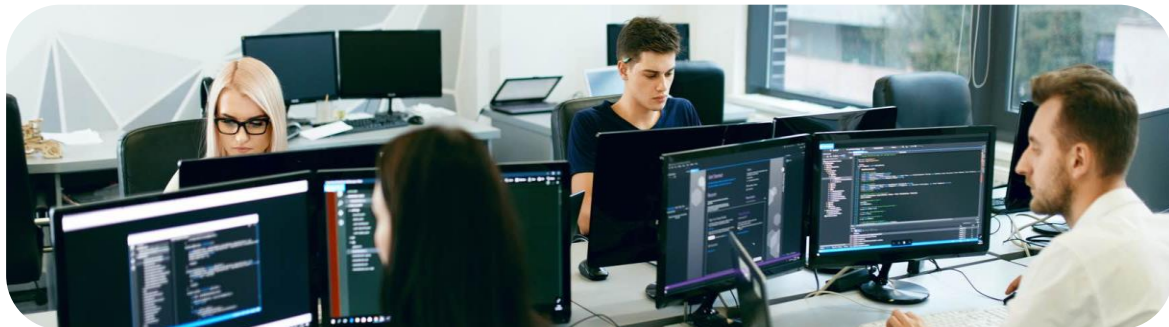
- What experience have the vendors had with producing or consuming a Patient Summary?
- What are some near-term opportunities to improve integration of Patient Summaries into existing clinical workflows?
- How does the market manage patient consent and how can it be applied to the creation and distribution of Patient Summaries?



Wrap Up



Projectathon Days 1 & 2 Debrief



Participating Systems from:



Purpose: To test the PS-CA and CA:FeX Specifications

Key Achievements:

- Kicked-off first pan-Canadian Projectathon to test and improve Patient Summary Interoperability Specifications (PS-CA & CA:FeX)
- Participating vendors performed several pre-Projectathon, No-Peer Tests and Peer-to-Peer tests
- Observed engagement from 35+ participants

Conclusion:

- The Projectathon has proven that the PS-CA allows for generation of a FHIR-based PS-CA document
- The IHE methodology and pan-Canadian Projectathons are effective tools to support testing and facilitate ecosystem collaboration

Total Profiles Tested	Total No-Peer Tests Verified	Total Peer-to-Peer Tested Verified	# of Items for Consideration for PS-CA Specification
6	14	14	TBD

Vendor Feedback

What were some key learnings from Day 1 & 2?

General Feedback

- Do you have comments or feedback on implementing the specifications during the Projectathon? How did you find using Gazelle and the IHE Methodology?

Testing Environment and Process

- Understanding that more preparation time is needed, would you be interested in future events?



Next Steps

Immediate Term

- Feedback from Day 3 sessions (Survey Monkey)
- Closing open review and dispositioning of feedback from PS-CA v 0.3 and CA:FeX v0.2
- Governance bodies reviews and approvals
- Publishing PS-CA v1.0 TI and CA:FeX v1.0 DSTU - May



Long-Term

- Develop an interoperability roadmap
- Support implementations of the published specification
- Evolve the specifications
- Refine the Interoperability Program, including governance, process and methodology (Connectathons, etc...)



Questions and Feedback



Any questions we did not get to today can be directed to the following individuals:

Attila Farkas at afarkas@infoway-inforoute.ca

Michelle Cerqua at mcerqua@infoway-inforoute.ca



Recordings from Day 3 will be posted in the Patient Summary Working Group

<https://infocentral.infoway-inforoute.ca/en/collaboration/wg/patient-summaries>



*We want your feedback! Please share your feedback with us by **Monday, March 28** by*

completing this short, 5-minute survey: <https://www.surveymonkey.com/r/CZFZV38>



Canada Health Infoway

Thank you!

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