Canada Health Infoway

Patient Summary Working Group (PSWG)

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Agenda

1. Pan-Canadian Projectathon Recap
2. PS-CA v2.1.0 DFT-Ballot Development Timelines and Ballot Cycle
3. CA:FeX Education Session
4. Next Steps

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FEBRUARY 3-7

TORONTO 2025

IHE CONNECTATHON

NORTH AMERICA

Pan-Canadian Projectathon/Plugathon Recap

- 25 Systems registered to test the PS-CA and CA:FeX specs at the Projectathon 2025!
  - Testing also included test cases for the PS-CA, CA:FeX and harmonized provincial Patient Summary specifications for British Columbia, Alberta, Ontario and New Brunswick!
- Content Validation was done through a FHIR validator and Manual Validation
- Secure exchange of the Patient Summary using Peer-to-Peer tests
- Experience Days and Plugathon presentation materials are available here.
- Final Projectathon report with testing results will be available soon!

PS-CA v2.1.0 DFT Ballot Development Timelines and Ballot Cycle

PS-CA development and key ballot Activities	Start	End
PS-CA v2.1.0 DFT Ballot release/content freeze	April, 11	April, 11
Ballot review and feedback submission	April, 11	May, 16
Feedback Compilation	May, 20	May, 20
Internal feedback Triage (Review, categorize, assign, prioritize feedback and document potential resolutions)	May, 21	May, 30
WG reviews feedback blocks during disposition periods, and submitters are notified	June, 2	July, 14
Changes are incorporated into the specification	July, 15	Aug, 1
Q/A	Aug, 5	Aug, 8
Updated version is released to community (PS-CA v2.1.0 DFT)	Aug, 11	Aug, 11

CA:FeX

Edmond Chiu, Senior Software Developer

Meeting Objectives and Agenda

Agenda

1. Understanding the Pan-Canadian FHIR Exchange
   - Overview of CA:FeX
   - How CA:FeX fits into existing workflows
   - Use Cases and Real-World Implementations
2. Exploring Implementation Opportunities
   - How are you currently aligned with CA:FeX?
3. Insights from the Plugathon
   - Key Takeaways and Feedback
4. Next Steps

Objectives

1. Provide a clear explanation of CA:FeX, its purpose, and how it is used in practice and in relation to other specs.
2. Identify alignment opportunities with existing implementations

CA:FeX – What It Is vs. What It Is Not

CA:FeX *Is*

- A standard that defines a minimum bar for FHIR-based exchange capabilities across vendors and jurisdictions.
- Scoped to exchange behaviors that fall under the FHIR RESTful exchange paradigm, including document-focused, discrete data exchange patterns, and interaction behaviors (e.g., Operations)
- Similar to IPA, US Core, and IHE QEDM, it is workflow and asset agnostic and intentionally designed to be reusable across various architectures.
- Provides clarity on using FHIR to exchange legacy information (e.g., binary documents, references within bundled documents)

CA:FeX *Is Not*

- A turnkey solution or out-of-the-box product that directly moves or manages data.
- An implementation-focused guide. It provides constraints where needed but remains flexible for broader adoption.
- A rigid, one-size-fits-all specification—it allows flexibility for jurisdictions to build upon
- A complete data model—it does not define domain-specific models but supports interoperability between them.

CA:FeX is the 'bar' for FHIR exchange patterns—more defined than FHIR Base and CA Baseline but less constrained than a domain-specific guide, allowing it to be leveraged to meet diverse needs

Use Cases

Use Case Identifier and Name	Description
UC-01 Create and Submit Document	A Health Care Provider, in any care setting, **adds Patient clinical document** for use at point of care, which is **made available to other authorized HCPs**.
UC-02 Query and Retrieve Document	Query and retrieval of **clinical document** performed by a Health Care Provider for use at the point of care or by the Patient themselves to **obtain a copy of their own personal health information**.
UC-03 Create and Submit Data	A Health Care Provider, in any care setting, **adds Patient clinical data** for use at point of care, which is **made available to other authorized HCPs.**
UC-04 Query and Retrieve Data	Query and retrieval of **clinical data** performed by a Health Care Provider for use at the point of care or by the Patient themselves to **obtain a copy of their own personal health information.**
UC-05 Fetch Document References	Clinical solution **fetches references to clinical document** from a Clinical Data Repository for use at the point of care or by the Patient themselves to **obtain a copy of their own personal health information.**

Document = Self-contained collection of clinical information
Data = Discrete pieces of clinical information

Use Case Examples

Use Case Identifier and Name	Example (highlights)
UC-01 Create and Submit Document	The health care provider decides to submit information gathered from an encounter to the network (i.e., Clinical Data Repository) in the form of a clinical document (e.g., patient summary).
UC-02 Query and Retrieve Document	A Health Care Provider, in any care setting, queries and retrieves a Patient Summary for use at the point of care. A Patient or Subject of Care accesses/views and can obtain a copy of their Discharge Summary after leaving the hospital.
UC-03 Create and Submit Data	Upon saving a new problem/condition to the patient's record, the provider submits this to the clinical data repository to make available for other health care providers.
UC-04 Query and Retrieve Data	A Health Care Provider, in any care setting, queries and retrieves the vaccination records for determine immunization status. A Patient or Subject of Care accesses/views and can obtain a copy of vaccination records to demonstrate immunization status.
UC-05 Fetch Document References	A Health Care Provider, fetches the references to a patient's clinical documents and indicates they would like documents that are generated on-demand or from a particular date range.

Full Details: https://infoscribe.infoway-inforoute.ca/display/CAFEXV210DFTB/Use+Cases+and+Definitions

Scope for CA:FeX

An Overview

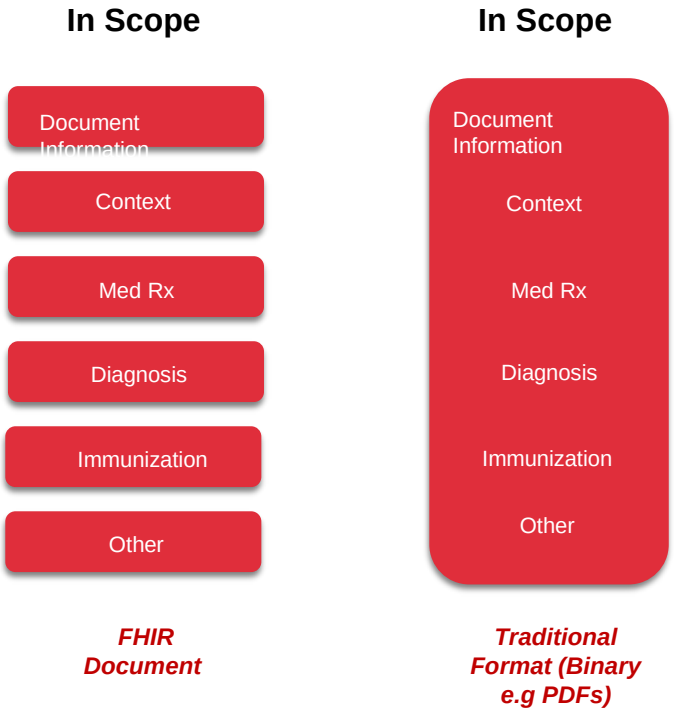
Scoped to exchange behaviors that fall under the **FHIR RESTful exchange** paradigm: Document focused and Discrete data exchange patterns, and other interaction behaviors (e.g., Operations)

- Implementations can choose one or more exchange options – (A) Bundle, (B) Metadata, (C) Single Resource, or (D) Summary – depending on their context and needs

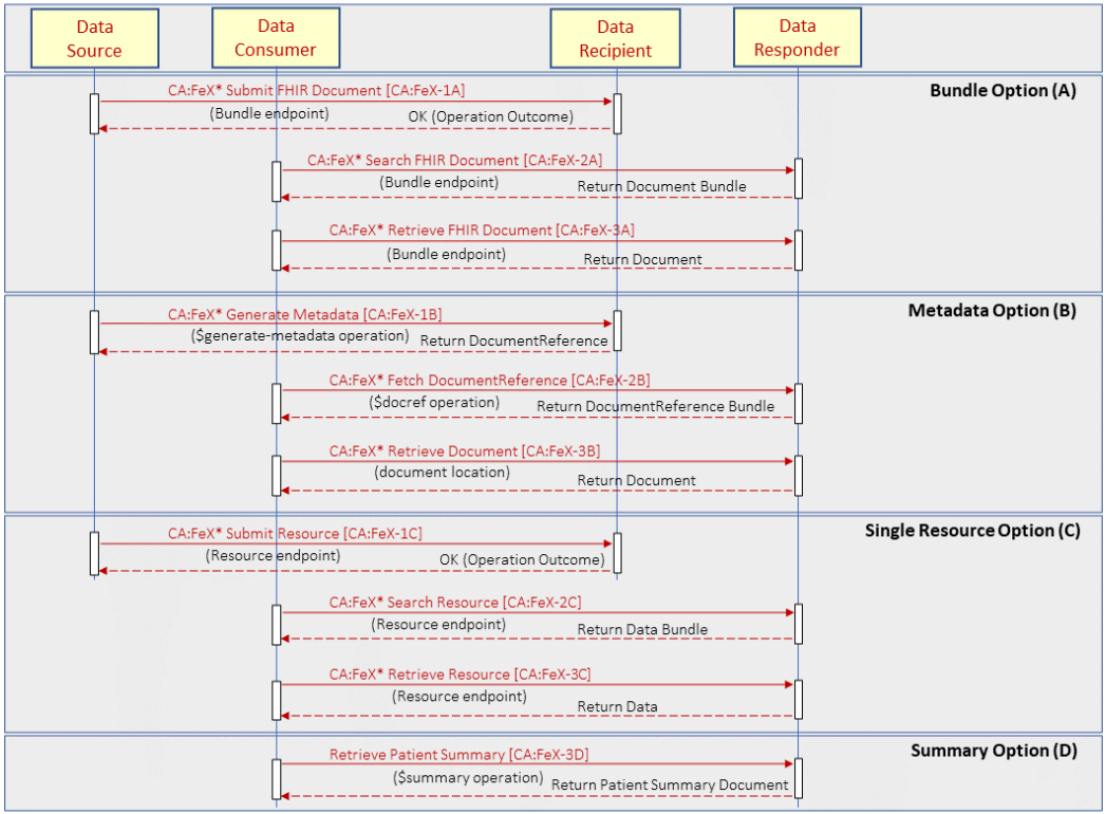
- In each model, standardized FHIR interactions (create, search, read) or FHIR operations are used to **submit new information** and to **query/retrieve existing information** (for example, submitting a patient's summary and later searching/retrieving it)

CA:FeX supports both FHIR-documents (e.g., Composition) and traditional documents

- **Both can be exchanged RESTfully through FHIR**



FHIR Health Information Exchange (HIE) Pattern Using CA:FeX



Supported FHIR Interactions:

- Submit – Send FHIR data (e.g., document bundle) - ***CA:FeX-1x***
- Search – Query for available records – ***CA:FeX-2x***
- Retrieve – Fetch structured clinical data – ***CA:FeX-3x***

Supported FHIR Operations:

- Metadata ($generate-metadata, $docref)
- Summary ($summary)

The following describes how the PS-CA leverages CA:FeX-2 and CA:FeX-3 specifically for Search and Retrieve

CA:FeX-2A

- GET or POST using /Bundle search using parameters to anchor request

CA:FeX-2B

- GET or POST using DocumentReference/$docref using parameters to anchor request

CA:FeX-3A

- GET using [base]/Bundle/[id]

CA:FeX-3D

- GET or POST either [base]/Patient/[id]/$summary or [base]/Patient/$summary with identifier parameter

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The Case for each Option

- Bundle (A) - exchange Clinical Documents using FHIR Bundle
- Metadata (B) - exchange Clinical Documents stored as various formats
- Single Resource (C) - exchange individual pieces of Clinical Data
- Summary (D) - on-demand exchange of Patient Summary
- Compliance with CA:FeX is implementing one or more of these Options for a given Actor and their required Transactions

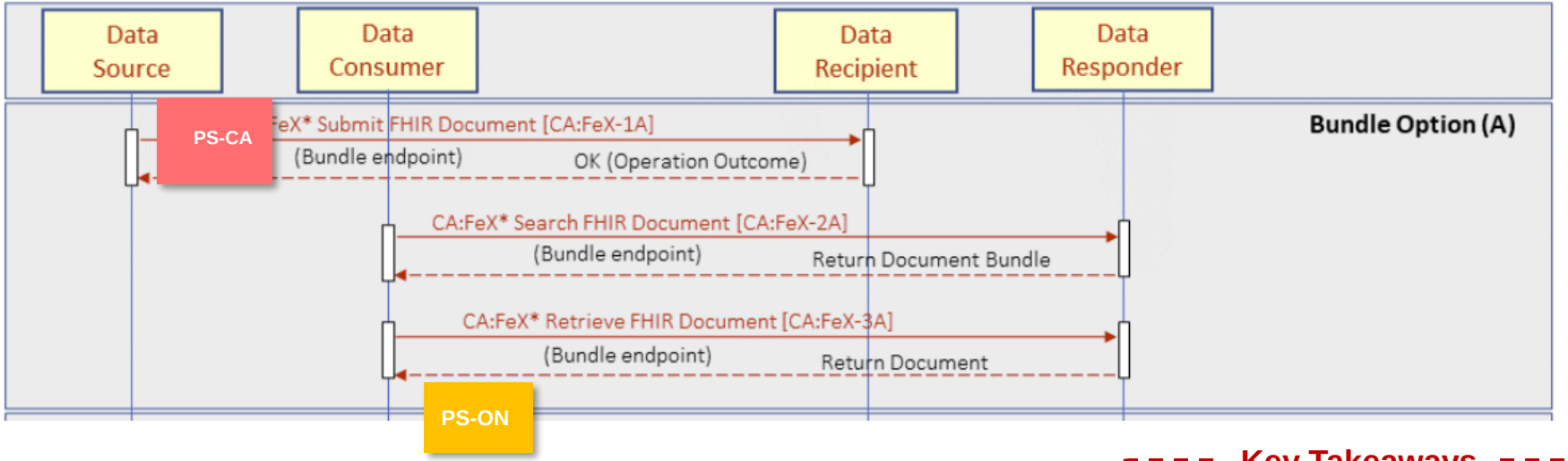
CA:FeX Capability Statement

RESTful Capabilities by Resource

Resource Type	Supported Searches (SHALL/SHOULD)	Mandatory Interactions	_include	_revinclude	Supported Operations (SHALL/SHOULD)
AllergyIntolerance	patient, patient.identifier, patient+clinical-status	search-type, read		Provenance:target	
Binary		read			
Bundle	timestamp, bundle-composition-patient, bundle-composition-patient-identifier	search-type, read			
Composition	patient, patient.identifier, type, status, author, date, category	search-type, read			
Condition	patient, patient.identifier, patient+category, patient+clinical-status, patient+code, patient+onset-date	search-type, read		Provenance:target	
DiagnosticReport	patient, patient.identifier, patient+category, patient+code, patient+category+date, patient+status, patient+code+date	search-type, read		Provenance:target	
DocumentReference	_id, patient, patient.identifier, patient+category, patient+category+date, patient+type, patient+status, patient+type+period	search-type, read		Provenance:target	$docref
Immunization	patient, patient.identifier, patient+date, patient+status	search-type, read			
Medication		read		Provenance:target	
MedicationRequest	patient, patient.identifier, patient+intent, patient+intent+status, patient+intent+authoredon	search-type, read	MedicationRequest:medication	Provenance:target	
MedicationStatement	patient, patient.identifier	search-type, read	MedicationStatement:medication	Provenance:target	
Observation	patient, patient.identifier, patient+category, patient+code, patient+category+date, patient+category+status, patient+code+date	search-type, read		Provenance:target	
Patient	_id, identifier, name, birthdate+name, gender+name, birthdate+family, family+gender	search-type, read		Provenance:target	
Practitioner	name, identifier, _id	search-type, read			
PractitionerRole	specialty, practitioner	search-type, read	PractitionerRole:endpoint, PractitionerRole:practitioner		
Procedure	patient, patient.identifier, patient+date	search-type, read		Provenance:target	
Provenance		read			

The relationship with PS-CA and PS-ON

An illustrative view



Key Takeaways

Given that the transaction patterns in CA:FeX provide mechanism for FHIR Document exchange, any specification based on a FHIR Bundle Document can be exchanged.

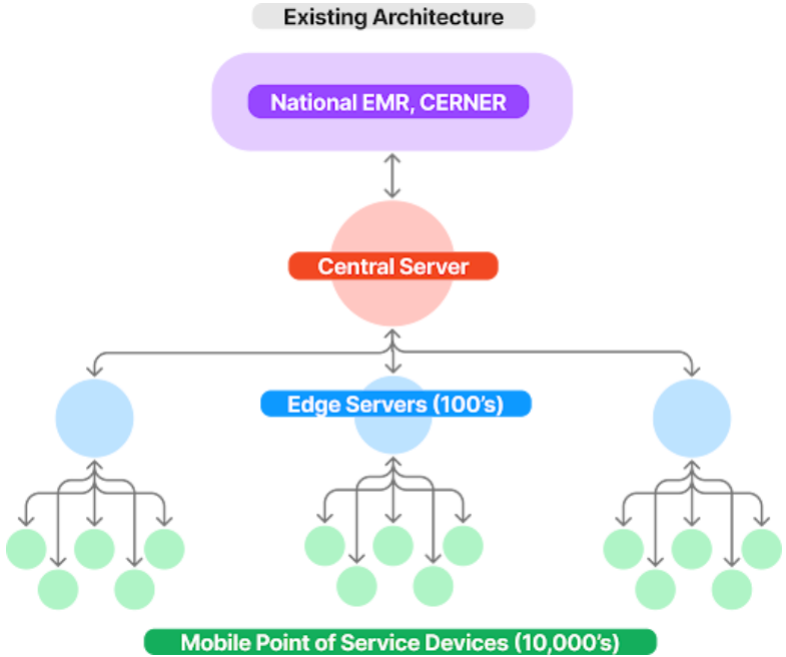
Venuiti Healthcare's Successful Implementation of CA:FeX

The Challenge

- Needed a scalable solution to connect 10,000+ mobile point-of-care devices
- Required real-time access to patient data across multiple systems.
- Existing integrations relied on custom-built APIs that created inconsistencies across systems, making scaling difficult..

The Solution & Impact

- Implemented hub-and-spoke architecture with a central CA:FeX-compliant FHIR server.
- Standardized Submit, Search, Retrieve operations for structured data exchange.
- Used CA:FeX Bundle-Based and Metadata-Based exchanges to efficiently share patient records and enable structured queries for clinical documents.
- Reduced custom integrations by leveraging CA:FeX as a common framework.
- Scalable infrastructure supporting thousands of connected devices.



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How are you currently aligned with CA:FeX?

- Are you using FHIR RESTful APIs for data exchange?
- Do your systems support Submit, Search, and Retrieve transactions?
- Are you currently exchanging structured data using
  - Bundle endpoint?
  - DocumentReference endpoint?
  - Other FHIR resources?
- Do you rely on custom-defined APIs instead of standardized FHIR APIs?

Insights from the Plugathon

01

Prefer **flexibility** in the spec and want to see more of that. In addition, defining what's compatible with SMART, IUA, so vendors can develop their systems to better interoperate with these specs.

02

Better defined test cases based on more **real-world scenarios**, to help implementers get a reference for how their interaction & architecture could be structured to support the various CA:FeX options.

03

More **clarity** on parts of the specification (e.g. Scopes in IUA, operations being sync vs async, what's in scope of CA:FeX). Would also want to see direction on **which option works best for a given context**, since some operations seem similar and provide the same outcome on the surface.

CA:FeX Roadmap Discussion

- Increase awareness and adoption
- Further alignment to IPA, US:Core, AU:Core, QEDM search parameters
- Create four cap. Stats. for CA:FeX – one for each Option

CA:FeX Roadmap Discussion

- Transaction naming convention (option alphabet or flat numeric)
- $everything
- Clarifying Use Case relationships to the CA:FeX FHIR IG and other FHIR IGs (PS-CA)
- Other use cases not yet defined

Next Steps

- Upcoming PSWG meetings to discuss:
  - Backlog items,
  - Scope of next release,
  - Projectathon test results and learnings,
  - updates from the IPS & Patient-mediated Access Plugathon track, and
  - HIMSS IPS learnings.

Helpful Links

Published specifications (available on InfoScribe):

- PS-CA v2.0.0 DFT-Ballot
- PS-CA v2.0.0 DFT-PreBallot
- PS-CA v1.1.0 DFT-Ballot
- CA:FeX v2.0.0 DFT-Ballot
- CA Core+ v0.1.0 DFT-Ballot

Working Groups (hosted on InfoCentral):

- Patient Summary
- eReferral

Projectathon Information (available on InfoScribe):

- IHE North America Connectathon Week 2025
- 2023 Final Report

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Thank you!

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