Canada’s IPS Journey

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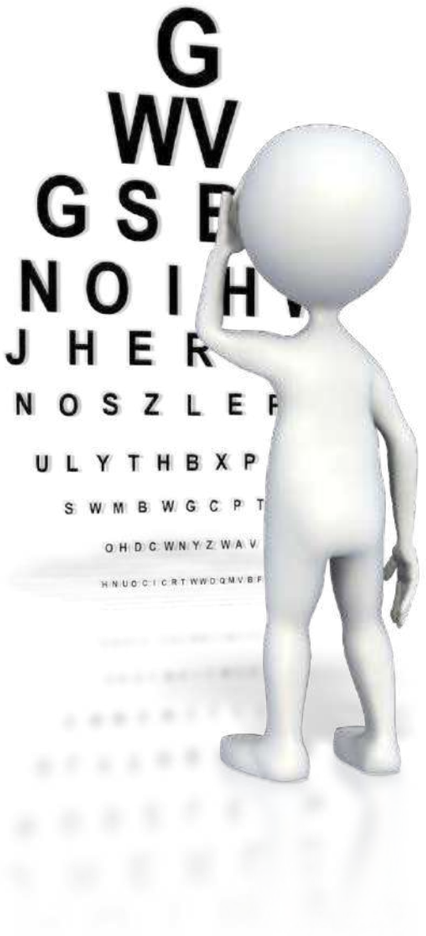
IHE Canada

CONNECTATHON
IHE 2022
BUILDING THE BRIDGE
MONTREUX+ATLANTA
SEPTEMBER 12-16

Agenda

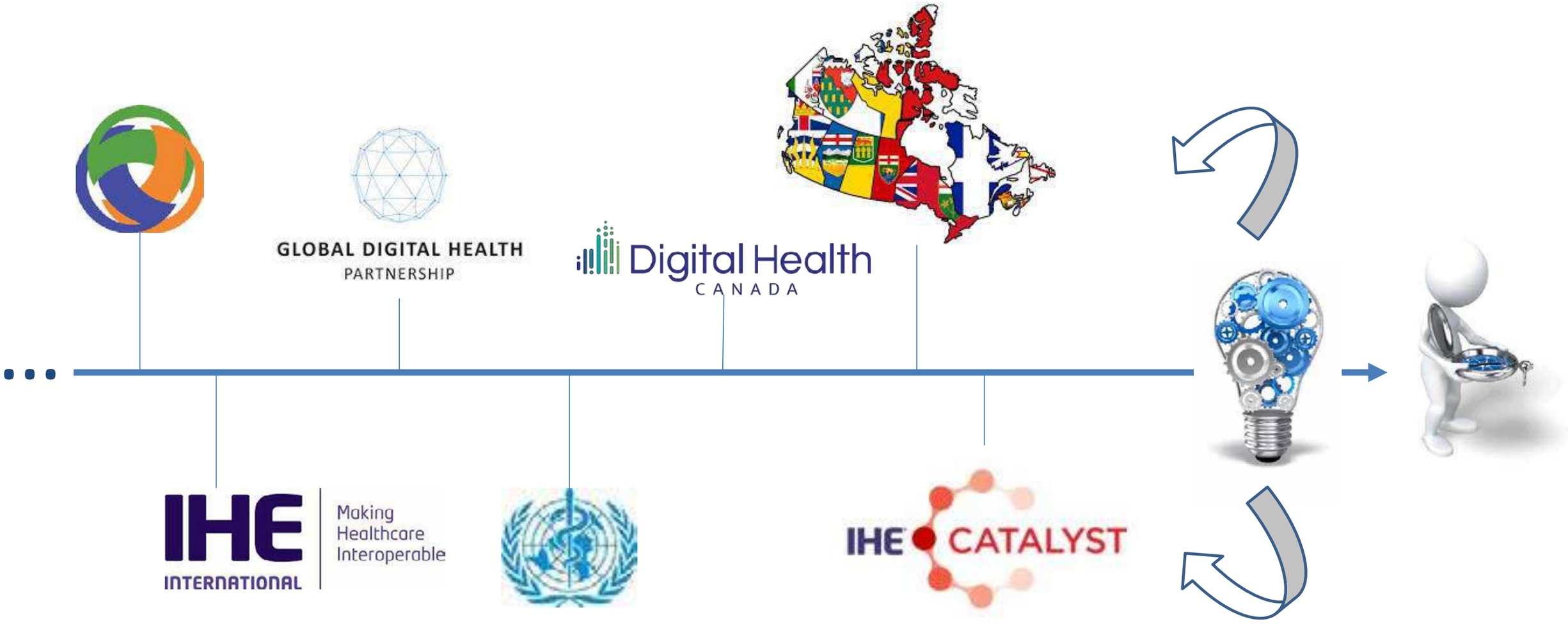
- Canada's international participation in IPS specification development
- Domestic efforts regarding development and testing of a pan-Canadian Patient Summary
- Expected future work – on both fronts!
- Q&A

These are not eye-charts… ;-)

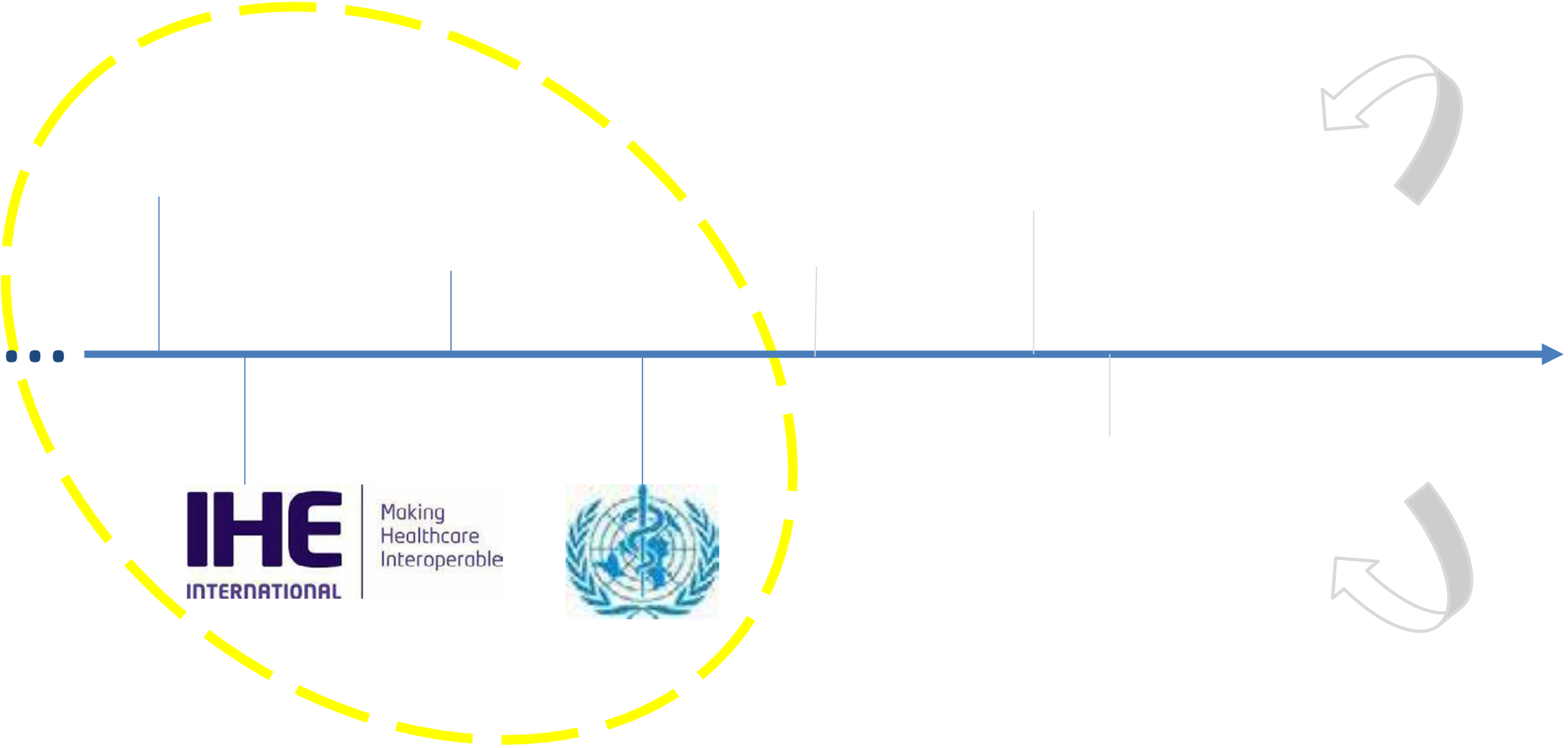


The following slides are *detailed* (for the benefit of later review of the deck) – but we will move **quickly** through them. The **top level messages** will tell our narrative story.

Today’s storyline…



International IPS participation…



JIC is a digital health **xSDO** coordination body established in 2007.

Joint Initiative Council

What is the JIC?

Established in 2007, SDOs have come together as the Joint Initiative Council (JIC) to build a collaborative framework of health informatics standards to

Foster **collaboration between standards and clinical communities** worldwide

Enable **digital transformation** based on **information interoperability**

Support **high-quality health services** to **individuals, communities and populations**

IPS has been one of JIC's core **focus** areas.

Joint Initiative Council

Joint Initiative Council

JIC open Forum

9th December 2021

JIC openForum

9th December 2021

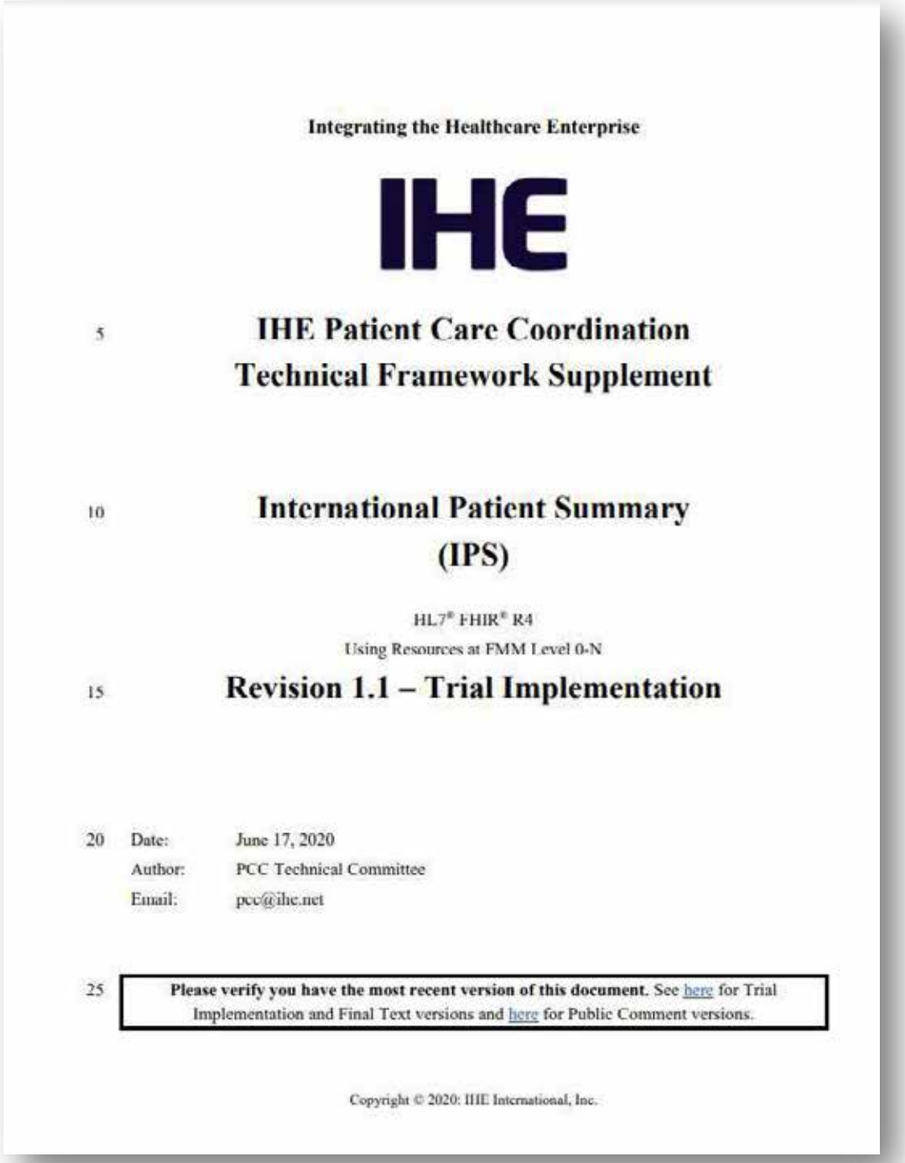
Agenda

The International Patient Summary is the latest joint activity within JIC and includes most of the JIC participating standard development organizations. It has a global scope -on a clinical and geographical point of view. The value of the IPS has been recognized by the G7 countries in their Summer 2021 meeting in Oxford UK. The purpose of this webinar is to present the respective angle of view for standard developers, the stakeholders having adopted or endorsed the IPS and those implementing this global standard.

This third openForum has been prepared in coordination with the GDHP who is also advancing the IPS standard.

A panel will provide opportunity to some of the standardization experts to explain their expectations, and later to interact with questions and answers, together with the other guest speakers. International uptake, standards maintenance, SDO reactivity, Connectathons, etc. will be addressed in the discussions.

https://international-patient-summary.net/



Integrating the Healthcare Enterprise

IHE

IHE Patient Care Coordination Technical Framework Supplement

International Patient Summary (IPS)

HL7® FHIR® R4

Using Resources at FMM Level 0-N

Revision 1.1 – Trial Implementation

Date: June 17, 2020

Author: PCC Technical Committee

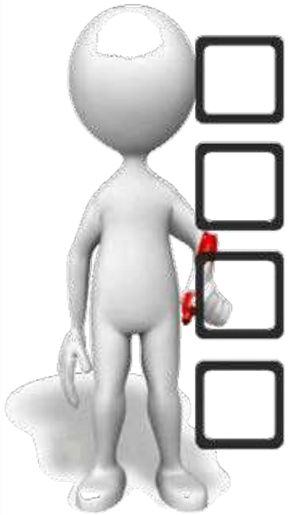
Email: pcc@ihe.net

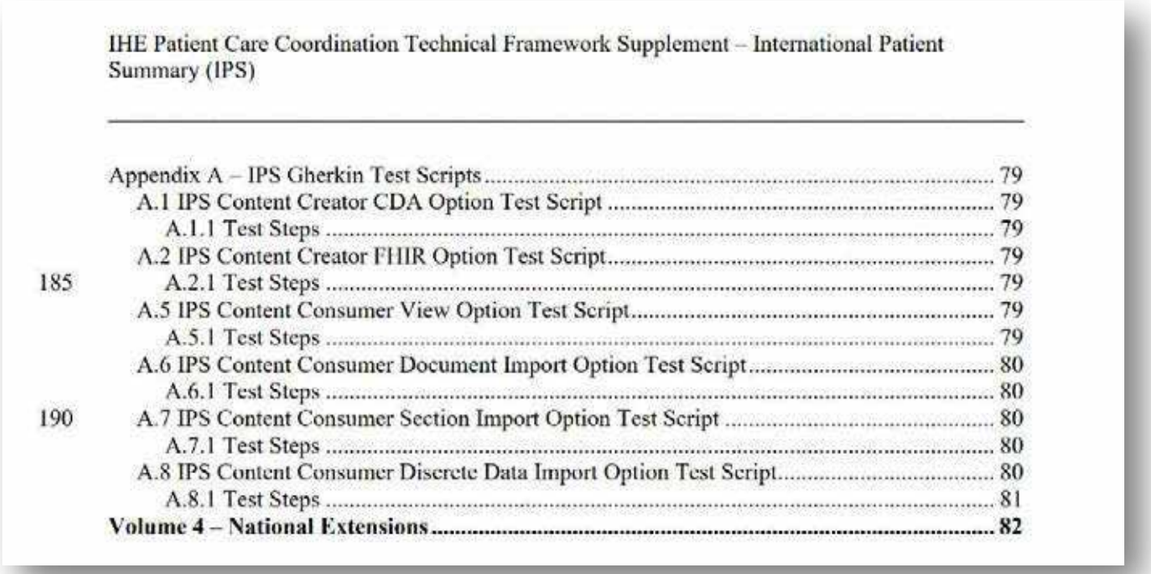
Please verify you have the most recent version of this document. See here for Trial Implementation and Final Text versions and here for Public Comment versions.

IHE INTERNATIONAL | Making Healthcare Interoperable

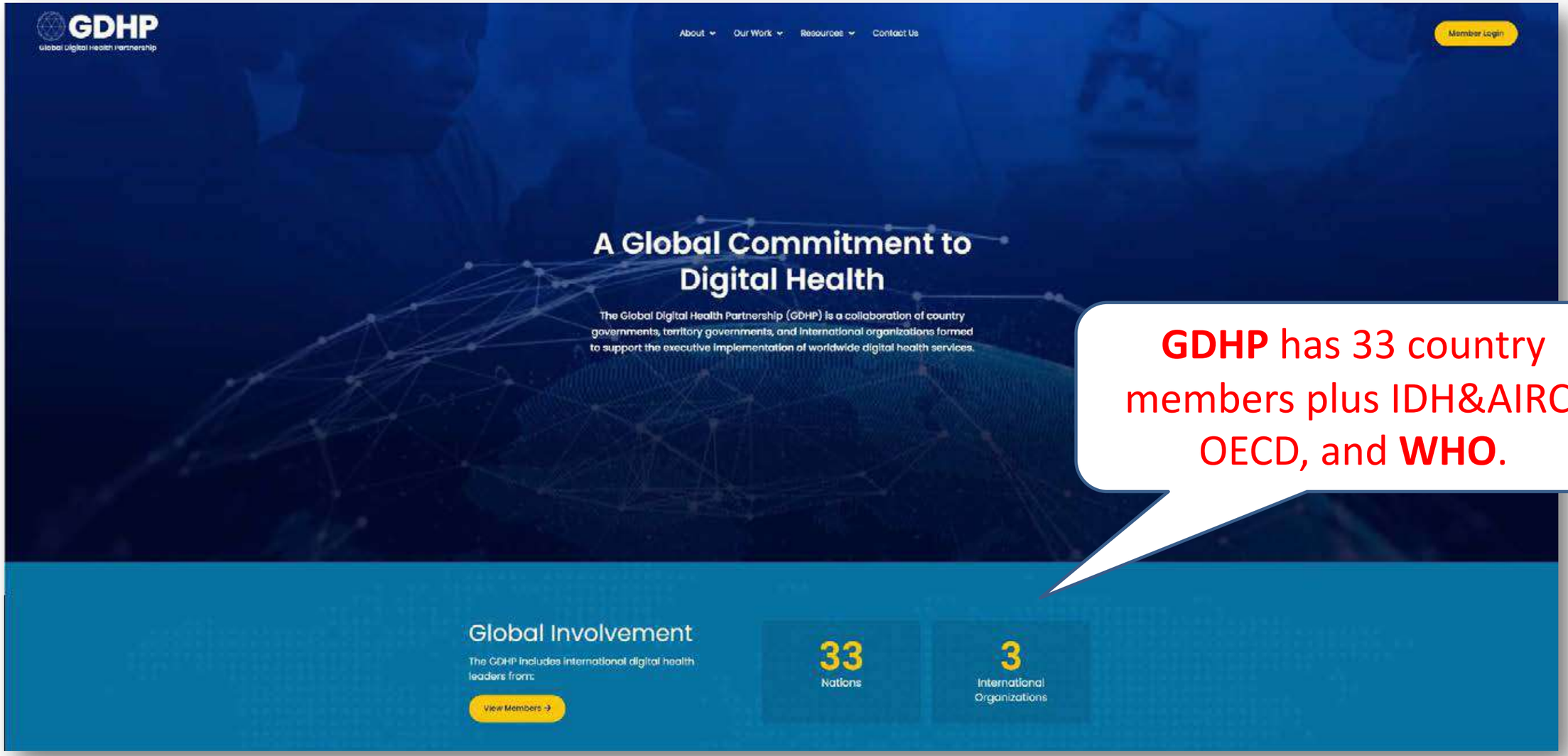
IHE Canada

IHE's Patient Care Coordination Committee (**PCC**) developed a ***conformance-testable implementation specification*** of the FHIR and CDA versions of the IPS information model.





IHE Patient Care Coordination Technical Framework Supplement – International Patient Summary (IPS)



GDHP has 33 country members plus IDH&AIRC, OECD, and **WHO**.

Current GDHP Chair – ONC

Canada's GDHP representative agency is: Canada Health Infoway

Work Stream Chairs

The GDHP has five work streams that advance global digital health in a variety of areas, namely: policy environments, clinical and consumer engagement, cyber security, evidence and evaluation, and interoperability. The Chairs and Co-Chairs of these work streams include:

Work Stream Name	Chair	Co-Chair
Policy Environments	United Kingdom	Canada
Clinical and Consumer Engagement	Canada	United Kingdom
Cyber Security	United States of America	Hong Kong
Evidence and Evaluation	Italy	Vacant
Interoperability	United States of America	Canada

IPS has been taken up as a focus of GDHP's **Interoperability Working Group**.

G7 Commitment:
International Patient Summary (IPS)

37. We commit to work towards adopting a **standardised minimum health dataset for patients' health information**, including through the International Patient Summary (**IPS**) standard, with the shared objectives of facilitating health interoperability within and between countries, developing internationally shared principles for enabling patient access to health data, based on the principle of informed explicit consent or patient permission and in keeping with countries' and regional existing legislative frameworks; and **facilitating and promoting the use of open standards** for international health data to encourage the widest possible adoption of standards and greater interoperability. To achieve this goal, we will **work with the Global Digital Health Partnership (GDHP)** as they are already advancing IPS efforts.

Note: Infoway holds Canada's membership in Global Digital Health Partnership (GDHP)

WHO developed Digital Documentation of COVID-19 Certificates (**DDCC**) specifications for vaccination status (DDCC:VS) and test results (DDCC:TR). "…[T]he HL7 FHIR International Patient Summary standard (**IPS**) is at the **foundation** of the DDCC…".

World Health Organization

Health Topics | Countries | Newsroom | Emergencies

Home / News / WHO launches guidance on digitally documenting SARS-CoV-2 test results

WHO launches guidance on digitally documenting SARS-CoV-2 test results

31 March 2022 | Departmental news | Reading time: 2 min (605 words)

On 31 March 2022, WHO published Digital Documentation of COVID-19 Certificates: technical specifications and guidance document for countries and implementing partn technical requirements for issuing digital certificates for SARS-CoV-2 diagnostic test r guidance can be found here. This document is the second of two guidance document documentation of COVID-19 related data of interest, vaccination status and test resul

WHO Digital Documentation of COVID-19 Certificates (DDCC)

1.0.0 - CI Build

Home | Business Requirements | Data Models and Exchange | Deployment | Indices

Table of Contents > Dependencies

This is the continuous build for version 1.0.0. This version is based on the current content of https://github.com/WorldHealthOrganization/ddcc and changes regularly.

7 Dependencies

Feedback

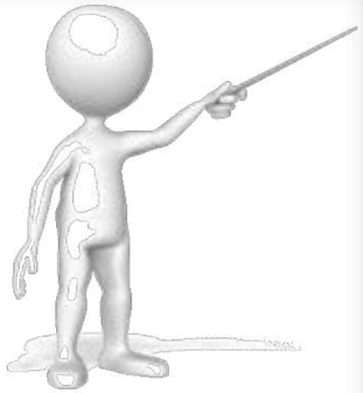
The following standards and profiles are referenced in this implementation guide:

- Integrating the Healthcare Enterprise (IHE):
  - Audit Trail and Node Authentication (ATNA) Profile
  - Sharing Value Sets and Concept Maps (SVCM) Profile
  - Mobile Care Services Discovery (mCSD) Profile
  - Mobile Health Document Sharing (MHDS) Profile, which also uses the Mobile Access to Health Documents (MHD) Profile
- The International Patient Summary (IPS):
  - Health Level 7 (HL7) Fast Healthcare Interoperability Resources (FHIR) IPS Implementation Guide, published by the HL7 International - Patient Care Work Group
- World Health Organization (WHO):
  - WHO International Classification of Diseases 11th Revision (ICD-11)

IG © 2021+ WHO. Package fhir.who.ddcc#1.0.0 based on FHIR 4.0.1. Generated 2022-06-01

Links: Table of Contents | QA Report | Issues | Version History | License

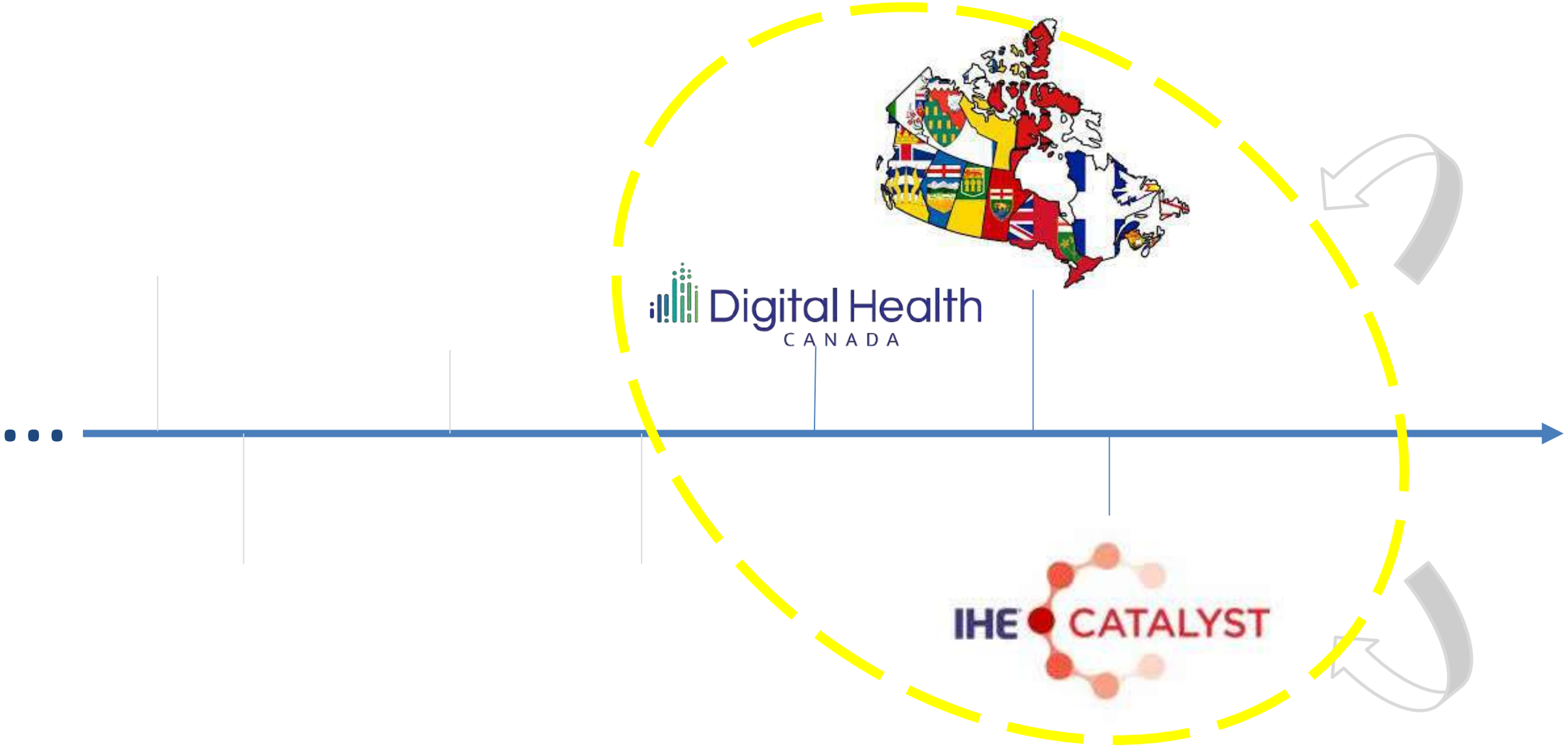
In addition to IPS, four **IHE Profiles** are named in the **WHO's DDCC IG.**



Key takeaways: International story

- The work of **developing** and **progressing** the IPS spec has been an international **team effort** taken up in multiple digital health forums.
- Canada has **contributed** to this work through its national **agencies**, and through the concerted efforts of health informatics **community members**.

Domestic IPS efforts…



Digital Health Canada, with funding from Infoway, published a **white paper** outlining the important, valuable, ***domestic use cases*** for **IPS** and the **issues** that can be addressed.

Canada Health Infoway

Infoway's focus and mandate:

pan-Canadian Interoperability across Federal, Provincial and Territorial Health Systems:

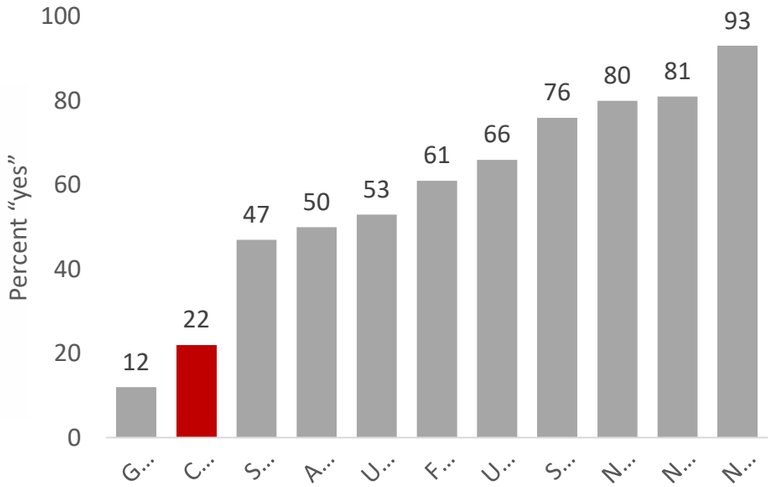
- Availability of health data in a common, standardized format
- Secure exchange of data in healthcare settings
- Access for Canadians to their personal health data in a digital format

NOTE: All of Canada's participation in digital health SDOs is **supported** by and **coordinated** by Infoway.

Primary Care Physicians able to electronically exchange patient clinical summaries with any doctors outside practice

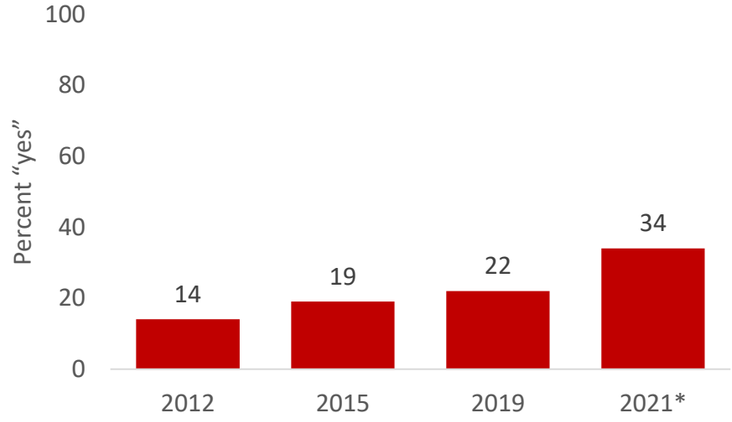
Physician reported survey data

2019 International comparisons



- Data: [2019 Commonwealth Fund International Health Policy Survey of Primary Care Physicians].
- Source: Michelle M. Doty et al., "Primary Care Physicians' Role in Coordinating Medical and Health-Related Social Needs in Eleven Countries," *Health Affairs,* published online Dec. 10, 2019.

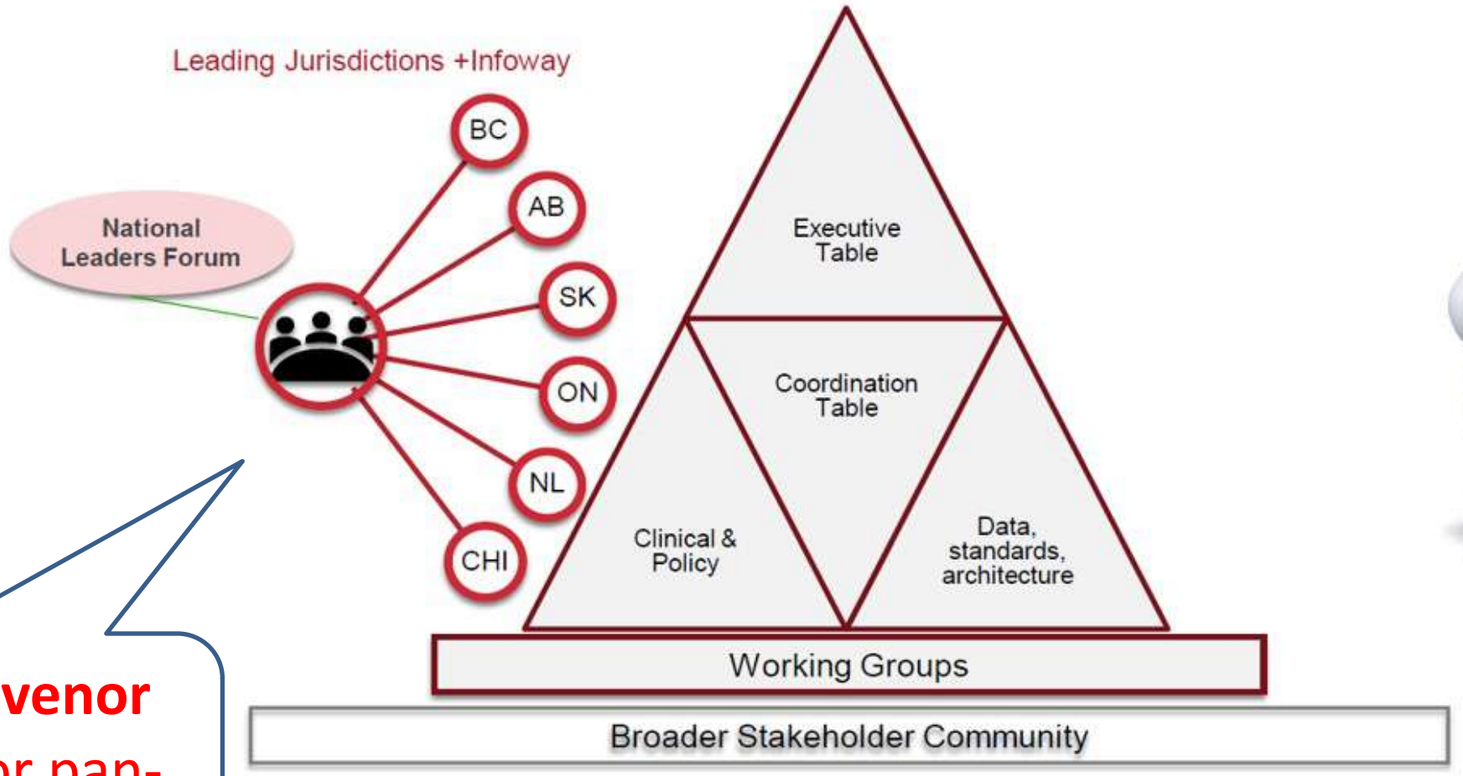
2012 – 2021 Canadian trendline



- Data: 2012, 2015 and 2019 Commonwealth Fund International Health Policy Survey of Primary Care Physicians.
- *2021 data from [CMA Infoway National Survey of Physicians]. Caution should be used when considering trend due to methodology differences

There is **room for improvement** in Canada's data sharing capabilities.

Governance tables to support PS-CA development



Infoway is a **convenor** and **facilitator** for pan-Canadian collaboration.

PS-CA and IPS

An implementable, testable specification, based on the International Patient Summary (IPS) specification, as defined by IHE, HL7, CEN-EN 17269 and ISO/DIS 27269

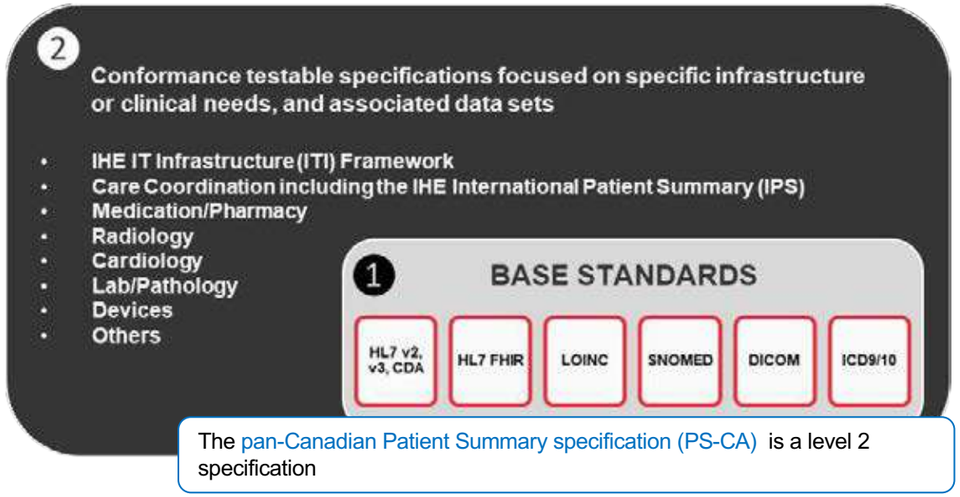
The PS-CA FHIR profile set is as closely aligned to the HL7 IPS-UV specification as possible, while still supporting localized needs and reducing barriers to early adoption

The Pan-Canadian Patient Summary Interoperability Specification is an implementable, testable specification, based on the IHE International Patient Summary specification and HL7 IPS IG

Defines building blocks (both: content data model and interoperability) to create and share condition-independent and specialty-agnostic patient summaries

An IPS-based, **nationalized**, consensus, patient summary spec was co-developed.

Solve for specific interoperability priorities - Patient Summaries – while also addressing the broader interoperability landscape



The pan-Canadian Patient Summary specification (PS-CA) is a level 2 specification

An integrated and harmonized collection of specifications, policies and infrastructure is required to enable wider interoperability

1 Adoption of Base Standards is not enough
- Projects and vendors across the country use base standards but there is lack of harmonization across implementations

2 Interoperability requires harmonization of testable specifications across public and private sector implementers
- There is a growing body of testable specifications in use by multiple countries and healthcare sectors
- The diagnostic imaging sector is most mature in embracing testable specifications

An IHE-based **methodological approach** was adopted. This avoided "idiosyncratic" solutions poorly aligned to the market context.

PS-CA is configurable to address necessary jurisdictional variances

	EXPECTED USER SCENARIOS	EXPECTED IMPLEMENTATION
LOCAL	• Patient summary (PS) available for local care transitions (provider to provider). • Provider contributes summary data to provincial repository	• Sharing between providers' systems • EMR/HIS input to provincial PS repositories. • Multiple data sources not reconciled/curated.
PROVINCIAL	• Patient/Provider consults a provincial summary. • Provider updates local record from provincial summary. • Patient contributes to Provincial summary.	• Provincial repository consolidates and reconciles multiple sources of data to create a single PS.
X-PROVINCIAL	• Patient/Provider able to consult a harmonized summary across-provincial borders. • Provider updates local record from cross-provincial summary.	• Harmonized PS and data sets across provinces/territories. Likely starting with a general subset evolving to support relevant specialties.
INTERNATIONAL	• Patient able to access PS to get care abroad. • Foreign provider shares/consults summary for cross-national care. e.g. armed forces, extended stay outside Canada, etc.	• PS fully harmonized to support International exchange with target nations.

While standards and technical harmonization are foundational,
alignment of privacy and other policy considerations to drive and manage change will be essential to accomplish cross-provincial and cross-national sharing.

Current focus (ON, AB, SK, BC, NL, MB)

Medium-Long term (TBD)

A **maturity model** was adopted to support moving from **success** to **success**.

pan-Canadian PS Specifications - Project Scope (R1)

Project Background

Patient Summary-CA – A national collaborative effort of developing a pan-Canadian implementable specification

Baseline: Develop foundational Use Cases and Business Requirements for pan-Canadian Patient Summaries based on collaborative workshopping with jurisdictions, industry, clinical expert and other relevant organizations

Collaborate: Collaborate with jurisdictions, clinical SMEs, technical SMES, vendors, participating organizations to develop and refine detailed artefacts

Review: Review and provide feedback into artefacts through engagement workshops and input gathering

Publish: Publish artefacts for broader stakeholder consultation

Recommend: Recommend draft artefacts for approval

Jurisdictional Alignment

Stakeholder Engagement has identified a set of common use cases for the pan-Canadian Patient Summary, Release 1 prioritizes these 3.

Use Cases in Scope for Release 1	AB	BC	NL	ON	SK
1. Health Care Provider (HCP) Creates and submits a Patient Summary-CA	x	x	x	x	x
2. Health Care Provider (HCP) Retrieves, Views and Uses a Patient Summary-CA	x	x	x	x	x
3. Patient Accesses and Views their Patient Summary-CA	x	x	x	x	

A set of initial **use cases** identified workflows that would immediately **realize "value"** for implementers.

Patient Summary-CA Package: Related Documents

The pan-Canadian Patient Summary specification (PS-CA) is a level 2 specification

✓ Core Interoperability Specification

Pan Canadian Patient Summary Interoperable Specification v1 Trial Implementation

references

✓ pan-Canadian Patient Summary – FHIR® Implementation Guide:

PS-CA Content Data Model, PS-CA FHIR® Profiles and FHIR® Implementation Guide

references

pan-Canadian Patient Summary – Companion Guide to Reference Architecture:

PS-CA Actors & Transactions and Sequence Diagrams

meets requirement

Patient Summary – Companion Guide to Use Cases and Definitions:

Patient Summary-CA Use Cases & Business Requirements

Link to specification package

Legend

Core Interoperability Specification

Related Core Interoperability Specification

An **implementable** set of companion specifications was developed.

Cross-jurisdictional PS-CA Building Blocks Prioritization

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	Header	Subject								+
	Author		Author								+
	Attester		Attester								+
	Custodian		Custodian								+
Required	Medication Summary	Recommended	Medication Summary								+
	Allergies and Intolerance		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	Optional	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.

Infoway has convened a collaborative process to:

- reach consensus on priorities

- consolidate requirements

- conduct detailed data analysis

- understand jurisdictional needs and the required flexibility for the design of PS-CA building blocks

These specs ***adapted*** IPS modules' cardinality to match the selected **use cases needs**.

The PS-CA Interoperable Specification

Sample from the Specification document

Table 1. Interoperability Conformance Requirements for Use Case 1: HCP Creates PS-CA

Option 1: Document Repository/Registry Pattern

PS-CA USE CASE 1: HCP Creates PS-CA			MAPPING TO SECTIONS FROM THIS AND REFERENCED INTEROPERABILITY SPECIFICATIONS			
USE CASE ACTOR	SERVICE SUPPORTED	OPT	TECHNICAL ACTOR	OPT	PROFILE/ STANDARD	REFERENCED SPECIFICATION AND STANDARDS (Refer to the sections listed below in Appendix A)
PS-CA Producer	Authenticate User	O	Client (e.g., EMR)	O	Internet User Assertion (IUA)	Appendix A: IUA Profile Overview
	Identify Patient	O	Client (e.g., EMR)	O	Use Existing Standards Employed by the Clinical System	N/A
		O	Patient Demographic Consumer	O	PDQm	Appendix A: PDQm Profile Overview
	Retrieve clinical data from local data sources (Patient Identifier)	R	Client (e.g., EMR)	R	Use Existing Standards Employed by the Clinical System	N/A
	Assemble and review Patient Summary	R	Client (e.g., EMR)	R	Use Existing Standards Employed by the Clinical System	N/A
	Update Current Valuesets and ConceptMaps	O	Client (e.g., EMR)	O	SVCM	Appendix A: SVCM Profile Overview
	Omit or Mask Data based on Jurisdictional Policy	O	Client (e.g., EMR)	O	Jurisdictional Requirement	N/A
	Save PS-CA to Document Repository	R	Client (e.g., EMR)	R	Use Existing Standards Employed by the Clinical System	N/A
		R	Document Source	R	MHD	Appendix A: MHD Profile Overview
Document Repository (Local to PS-CA Producer or Central)	Save PS-CA to Document Repository	R	Document Recipient	R	MHD	Appendix A: MHD Profile Overview

The Use Case Actors and the Services they support are described in the following table. Services may be **Required or Optional.**

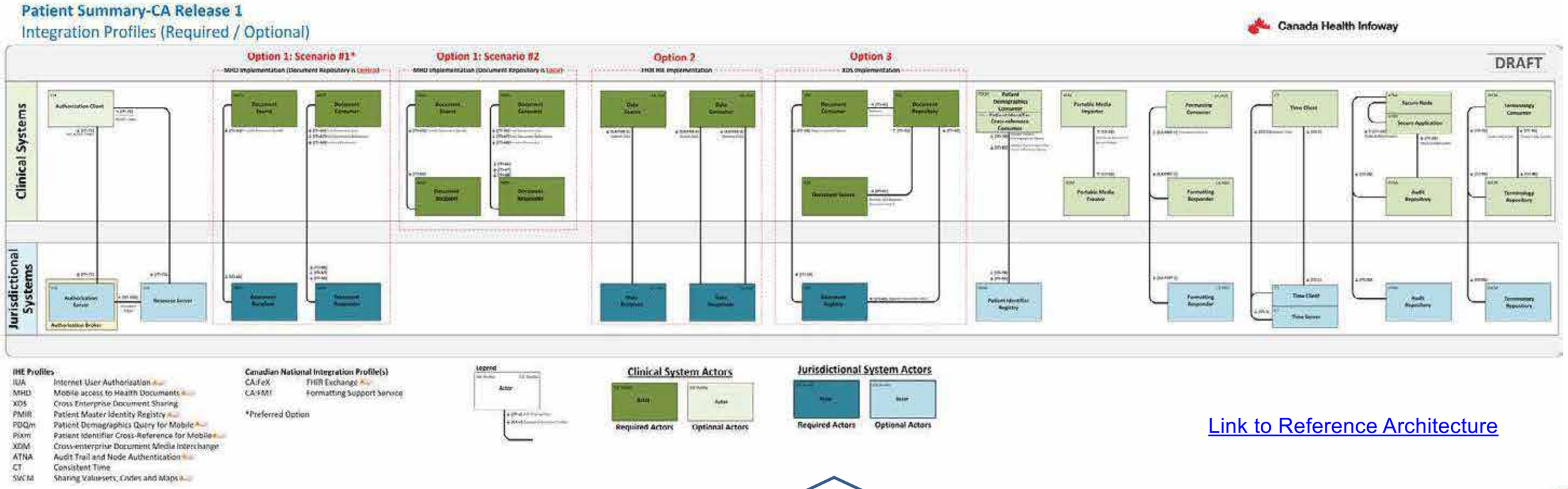
This table provides the mapping for the Use Case Actor to the detailed specifications (such as IHE Profiles, Profile Actors, Optionality) that systems shall implement to exchange healthcare information (e.g. Patient Summaries).

Link to Interoperable Specification

The use cases' PS-CA exchange patterns were mapped to **actor-transaction** definitions…

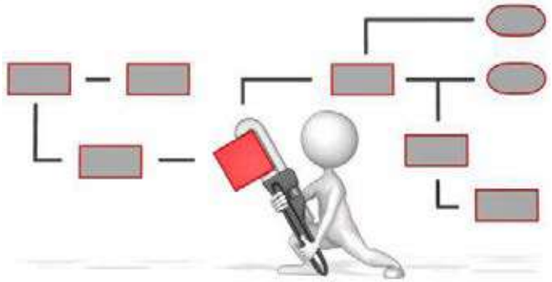
Reference Architecture that Supports PS-CA

This high-level view contains a superset of profiles that offer alternatives to exchanging the Patient Summary-CA depending on jurisdictional service type and availability. **Required and Optional capability support** is described in the sequence diagrams associated with each use case analysis.

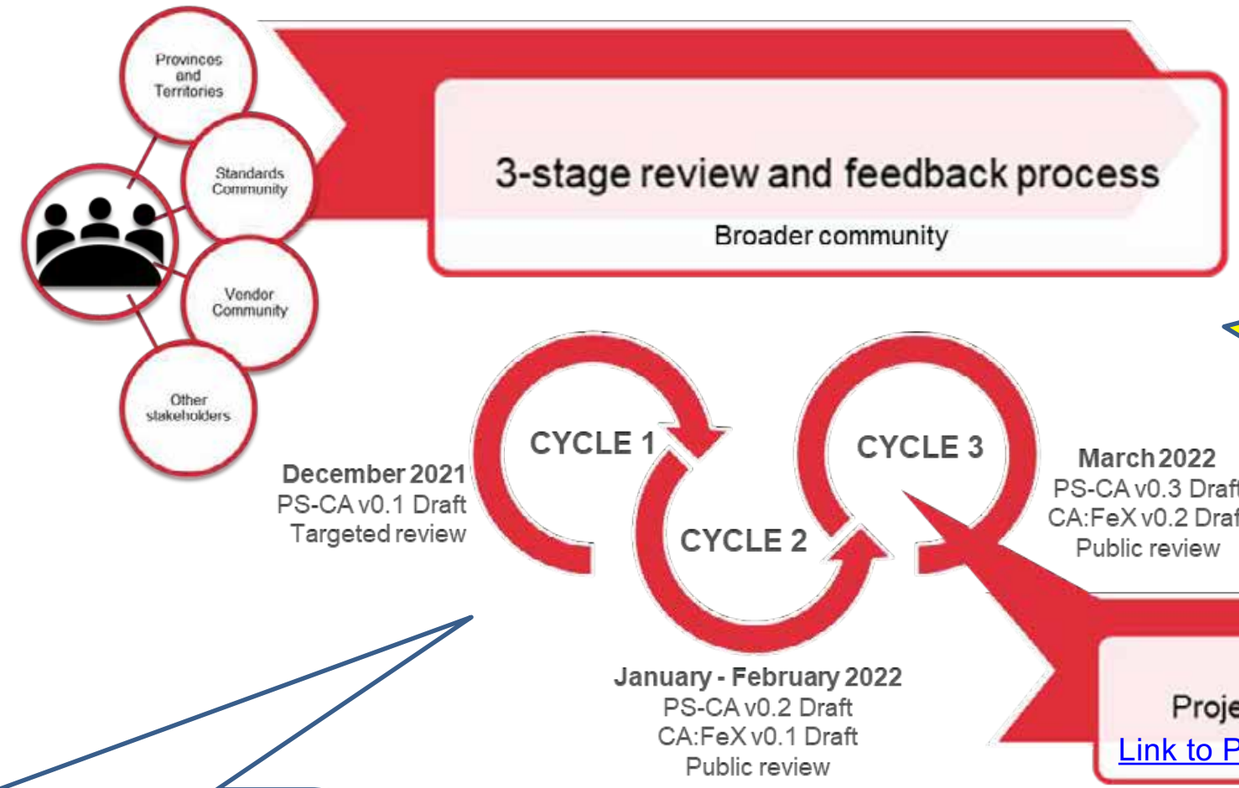


[Link to Reference Architecture]

…and these actor-transaction pairs were mapped to a conformance-testable **reference architecture** defined in terms of IHE Profiles (e.g. MHD, PMIR, SVCM, ATNA, etc.).



Review Cycles



A national Gazelle instance was set up!

IHE CATALYST

A **review process** was governed and managed over a 4-month period to prepare for a **Projectathon** in Mar-2022.

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		!"#		$#%&'(		
CERNER	!"# $#%&'(		!"# $#%&'(	$#%&'(	()*	$#%&'(+,)
Juniper		$#%&'(+,)		$#%&'(		$#%&'(+,)
SmileCDR	!"#	!"#	!"#			
EPIC		()*				
Infoway*		$#%&'(+,)	$#%&'(+,)			

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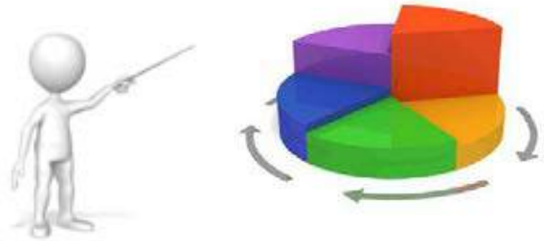
*Infoway will provide CA:FeX and MHD simulators in case vendors cannot find a partner, or want to do multiple tests

Vendor stakeholders signed up to participate in **peer testing** of the specifications, including a pure-FHIR **CA:FeX** document exchange spec.

Projectathon Highlights



Day 2 Dashboard

	Test Instance Execution Summary			
	# of Tests Verified	**# of Tests Partially Verified**	**# of Tests In Progress**	**Total**
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**

**Source: Gazelle Pan-Canadian-Projectathon-2022 as of 4:30 PM EST 3/22/2022*

Day 3 Program

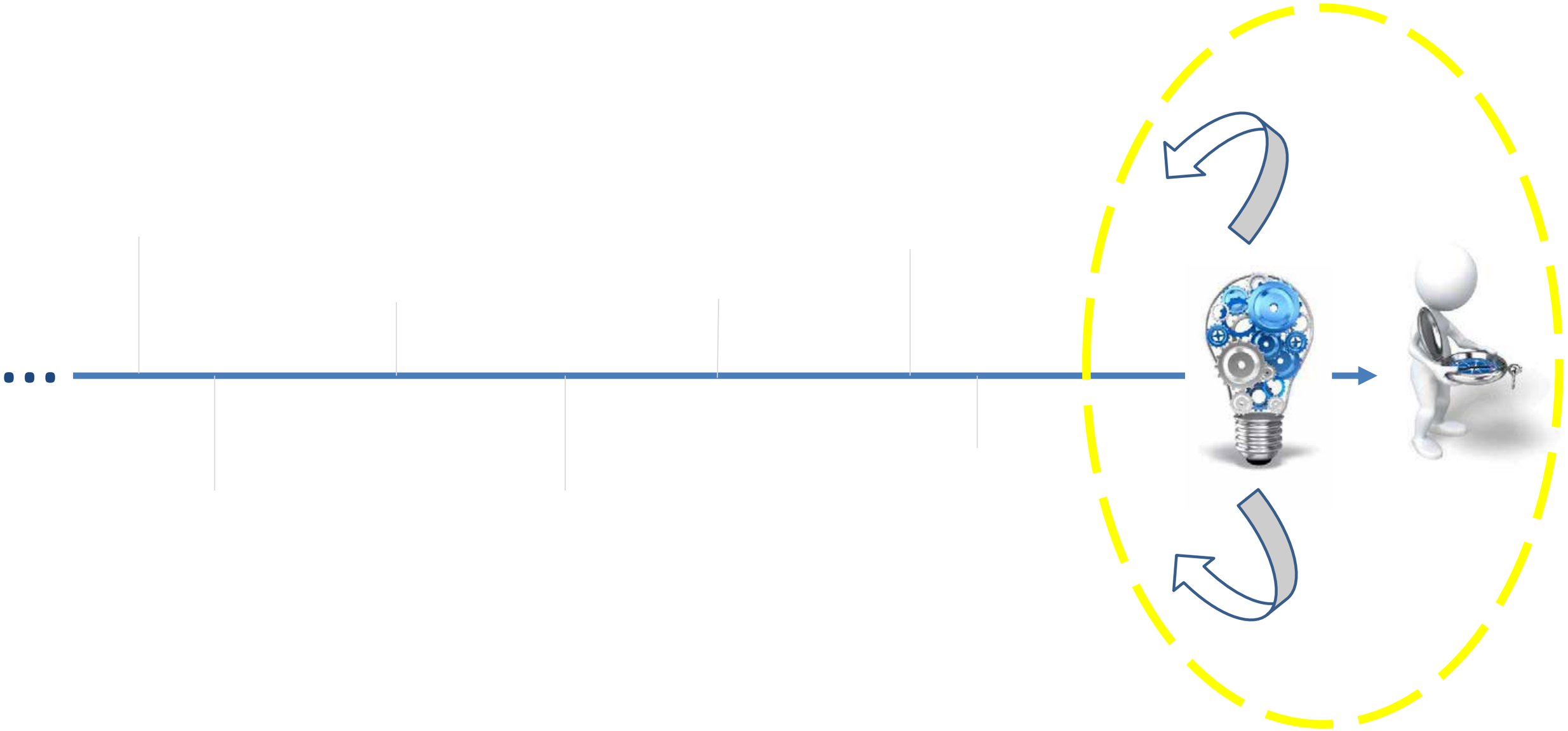
#	Activity	Objectives
1	Welcome	• Provide update on Day 1&2 • Outline the day's programming
2	FHIR Content Data Model – Facilitated Roundtable	• Discuss implementer experience with PS-CA and CA:FeX including mapping native application data to the new FHIR profiles
3	Supporting Profiles for PS-CA – Facilitated Roundtable	• Successful exchange of Patient Summaries is likely to depend on a number of supporting services – explore some examples and learn future needs
4	Approaches to document management – Facilitated Roundtable	• Discuss implementer experiences and approaches available for handling patient's longitudinal record, specifically focused on document format
5	Clinical Workflow – Facilitated Roundtable	• Share outcomes of previous clinician sessions • Discuss vendor experiences with supporting clinical workflows, specifically related to Patient Summaries
6	Wrap-Up	• Discuss overall key learnings from the event • Discuss next steps

A full public de-brief was held to report on Projectathon **results**, **lessons** learned, and **implications** for future work.

Key takeaways: Domestic story

- Interoperability is a ***sociotechnical*** endeavour. Jurisdictional and vendor **engagement** was the key to success.
- Choose **valuable** use cases. They garner **interest** and **participation**.
- Adopt a **maturity** model. It builds **momentum**.
- Leverage assemblies of **standard** building blocks; it helps ensure **adoption**.
- **Projectathons** move from theory to **practice**.

What’s next?



Key takeaways: Lessons, and next steps

- Continue to **engage** in the international IPS efforts (including xSDO); feed back lessons as an **early adopter**.
- Actively participate in the **evolution** of IHE tools, like **Gazelle**.
- Domestic partners are at different starting points; **engage them where they are**.
- Leverage national Projectathons as tools of **innovation**.
- Support jurisdictions with instruments of **governance**; this will include collaboration **forums** and conformance-testing **tools**.
- Coming up… permanent **governance table**; pan-Canadian **health data model**; national **Gazelle** instance.

Thank you!

Merci!