



Canada Health Infoway

Pan-Canadian Projectathon

Pre-Projectathon Testing Webinar

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Agenda

Scope	15 min
Pre-Testing Phase & Gazelle Demonstration	30 min
Projectathon 2023 Schedule & Next Steps	5 min
Q & A	10 min

Scope

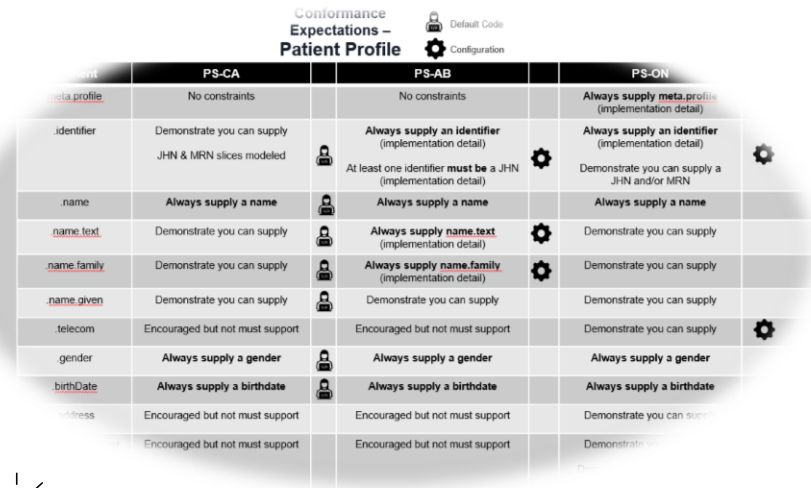
Vendors will have an opportunity to test and demonstrate capabilities in two distinct areas of the specification:

- A. Document format and content,
- B. Secure, exchange transactions.

A. Testing for Document Format and Content

The PS-CA FHIR Content Data model will be tested using a combination of test data and validation tooling. To consider:

- ❖ The **PS-AB** and **PS-ON** specifications are very **closely aligned to the PS-CA** and should be supported by minimal configuration of capability in the vendor systems. The **Data Configuration Guide** provides the necessary configurations for testing the PS-AB and PS-ON specifications.
- ❖ The test cases will highlight where configuration is needed and test that it is applied properly, based on claimed vendor conformance.
- ❖ The Projectathon will offer an assessment of the FHIR document against the ON and AB implementation guidance as represented in the PS-ON and PS-AB specifications, in addition to the PS-CA.



Element	PS-CA	PS-AB	PS-ON
meta.profile	No constraints	No constraints	Always supply meta.profile (implementation detail)
identifier	Demonstrate you can supply JHN & MRN slices modeled	Always supply an identifier (implementation detail) At least one identifier must be a JHN (implementation detail)	Always supply an identifier (implementation detail) Demonstrate you can supply a JHN and/or MRN
name	Always supply a name	Always supply a name	Always supply a name
name.text	Demonstrate you can supply	Always supply name.text (implementation detail)	Demonstrate you can supply
name.family	Demonstrate you can supply	Always supply name.family (implementation detail)	Demonstrate you can supply
name.given	Demonstrate you can supply	Demonstrate you can supply	Demonstrate you can supply
telecom	Encouraged but not must support	Encouraged but not must support	Demonstrate you can supply
gender	Always supply a gender	Always supply a gender	Always supply a gender
birthDate	Always supply a birthdate	Always supply a birthdate	Always supply a birthdate
address	Encouraged but not must support	Encouraged but not must support	Demonstrate you can supply



To access the **Data Configuration Guide**, go [here](#).
NOTE: This document is based on the PS-AB and PS-ON at a point in time and are, therefore, subject to change.

B. Testing Secure, Exchange Transactions

Implementation patterns may differ from jurisdiction to jurisdiction and information exchange channels may vary in terms of their security footprint.

Therefore, the Projectathon test cases have been organized into two categories:



Category 1 - Test cases that test **individual actor capabilities in isolation**, e.g., how a system can handle encrypted transactions, how a system can handle a CA:FeX transaction, how a system can handle an OAuth 2 token exchange, etc.



Category 2 - Complex test cases that **group individual actor capabilities with other relevant actor capabilities to simulate real world scenarios**, e.g., how a patient summary creator system can submit the document to a repository by using an OAuth 2 integration, etc.

Projectathon Testing: Integration Profiles

- 1

CA:FeX

Implementable, testable interoperability specification based on HL7 FHIR. Defines building blocks to enable creating, consuming and sharing clinical data via FHIR RESTful exchange patterns.
- 2

MHD

Defines one standardized interface to health document sharing. This profile is applicable to systems where needs are simple, such as pulling the latest summary for display.
- 3

IUA

Provides an authorization profile for the HTTP restful transactions. Ensures that the users (e.g., Patient, provider, etc.) and applications requesting access to the FHIR document (e.g., Patient summary) are authorized to have access.
- 4

CA:Sec

Specifies the foundational elements needed to securely execute transactions between two systems. Based on the ATNA profile and aims to bring improvements via loose coupling, with focus on node and application security.
- 5

CA:Aud

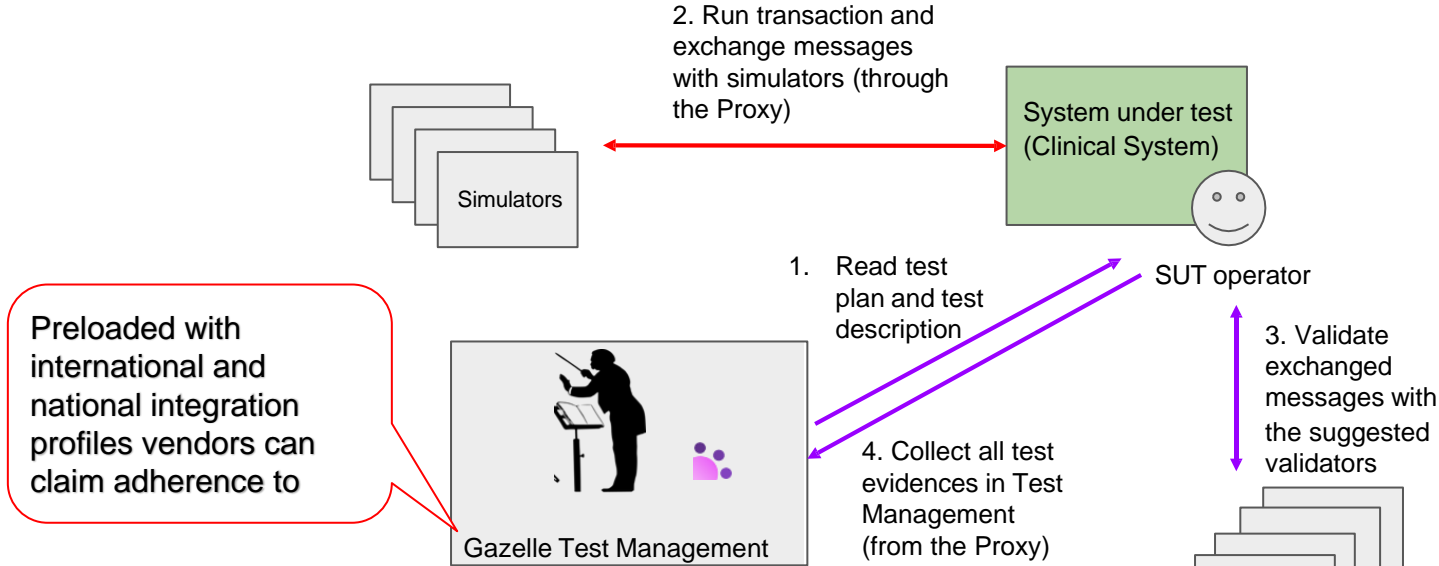
Specifies the foundational elements needed to perform event logging for auditing purposes. It is based on the ATNA profile and aims to bring improvements via loose coupling with focus on auditing using modern formats and technologies.
- 6














CT

Provides a means to ensure that the system clocks and time stamps of the many computers in a network are well synchronized.

Pre-Testing Phase

Gazelle Components



IHE Profiles	Canadian Specifications and Guidance	Legend
IUA Internet User Authorization 	CA:FeX Canadian FHIR Exchange 	 IHE Profile
ATNA Audit Trail and Node Authentication 	CA:FMT Canadian Formatting Service	 CA Profile, Spec or Guidance
CT Consistent Time	CA:Sec Canadian Network Security (based on ATNA)	 Actor
MHD Mobile access to Health Documents 	CA:Aud Canadian Audit Trail (based on ATNA) 	 IHE Transaction
PMIR Patient Master Identity Registry 		 Custom Transaction
PDQm Patient Demographics Query for Mobile		
PIXm Patient Identifier Cross-Reference for Mobile 		
XDM Cross-enterprise Document Media Interchange		
SVCM Sharing Valuesets, Codes and Maps 		

*Preferred Option

Pre-Testing Phase: Tool Set

Gazelle Testing Support Tools

- Gazelle Test Management
- Gazelle Proxy
- Gazelle Security Suite

FHIR Validator / Renderer Tools

- FHIR Validator
- PS-CA FHIR Renderer

Simulator Tools

- CA:FeX Client & Server Simulator
- MHD Client & Server Simulator
- IUA Simulator



To learn more about the tool set, go [here](#).

Pre-Testing Phase: Prerequisites

System registration and acceptance

- ✓ Your registration is fully completed in Gazelle
- ✓ Your system registration is accepted in Gazelle

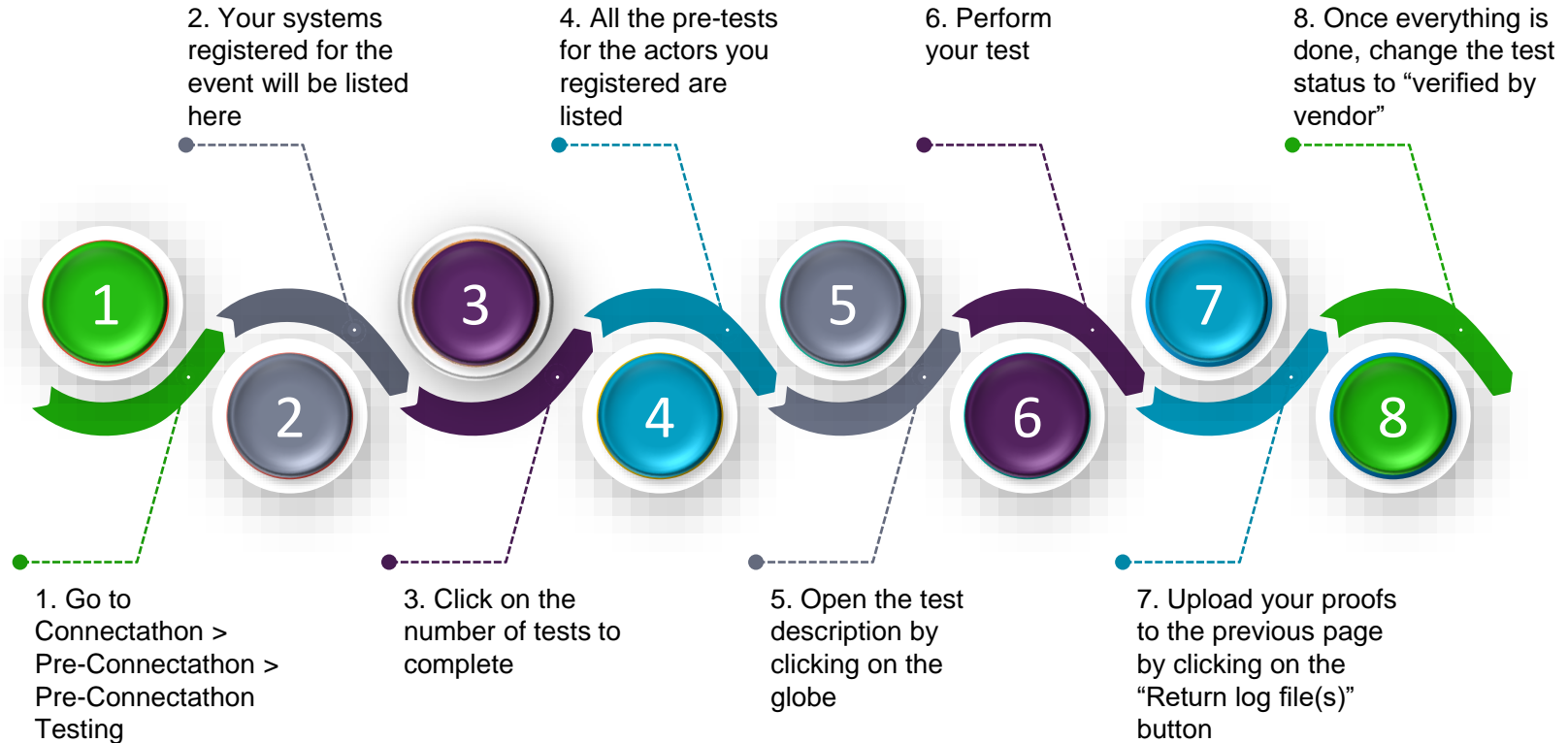
Declare your system configuration

- ✓ Hosts
- ✓ Ports

Gazelle Demonstration

The background features a white field on the left and a dark blue field on the right, separated by a curved white boundary. A red triangular shape points from the bottom right towards the center.

Pre-testing Phase: Process



FHIR Validator - Process

- The Canada Health Infoway FHIR Validator leverages the FHIR Validation engine to check a supplied resource or example against the expectations of a selected profile or implementation guide
 - Uses loaded FHIR Packages (.tgz files) to look up the rules in selected profiles that a supplied resource or example needs to be validated against
 - Invokes external services (i.e. tx.fhir.org terminology server) to evaluate whether a supplied concept matches against a bound value set or code system
 - Provides the user with a set of information messages, warnings, and/or errors that describe the process and outcome of the validation

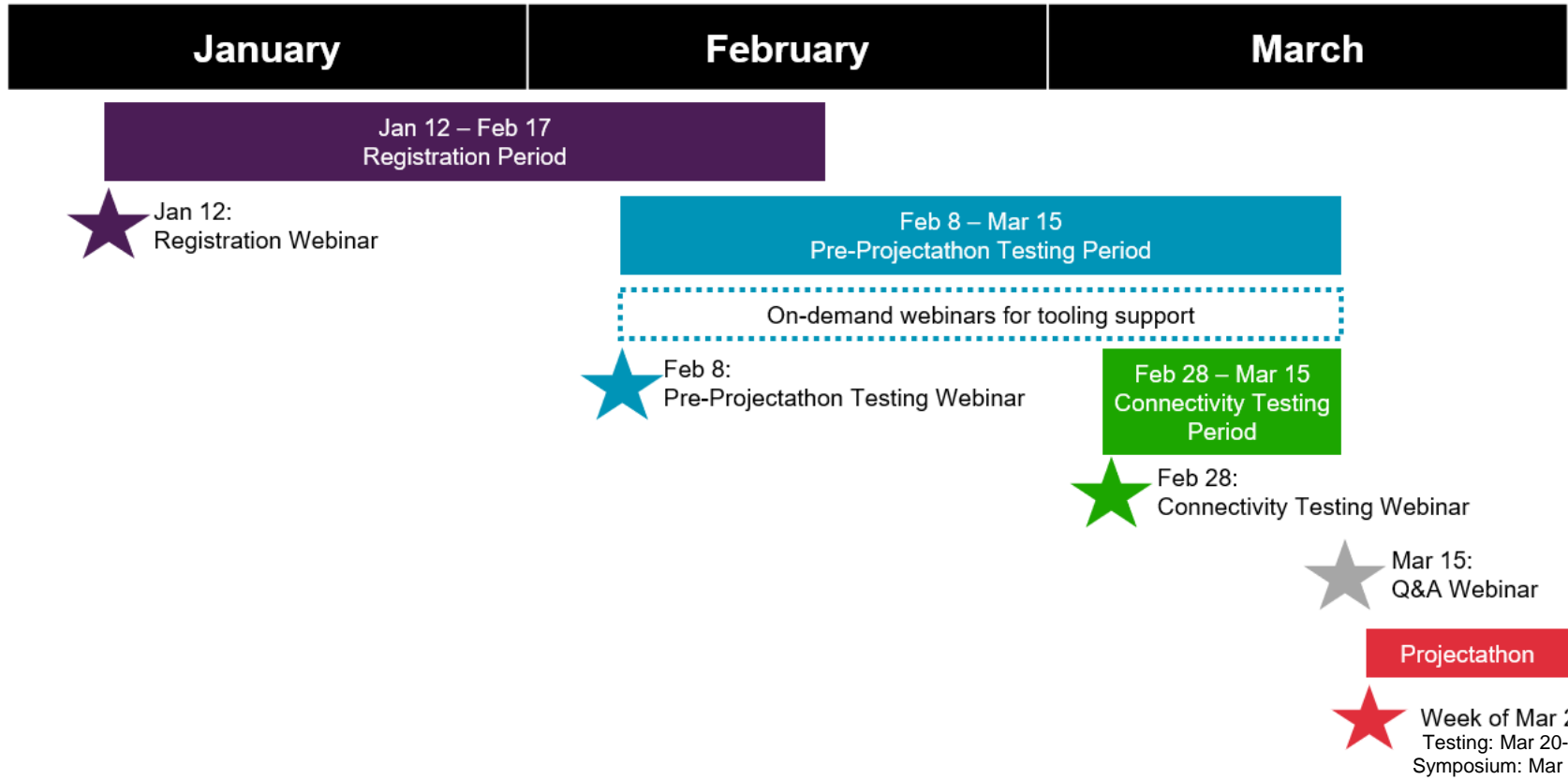
FHIR Validator – Errors & Warnings

- Errors are typically raised when the supplied file does not meet a SHALL rule (e.g., minimum cardinality not met, supplied concept does not belong to required value set)
- Warnings are raised when SHOULD rules are not met (e.g., supplied concept does not belong to a preferred or extensible value set)
- Some errors and warnings result from the validator not being able to properly complete the evaluation against a particular rule – these are referred to in the following slides as Expected Errors/Warnings
- **Regardless of severity – Expected Errors / Warnings described on these slides are not considered test failures**



See [Appendix](#) for list of Expected Errors & Warnings

Projectathon 2023 Schedule



Next Steps

- Registration (if not already completed). Thank you to those who have registered!
- Pre-Projectathon testing



Reminder:

Personal Health Information must not be included in any Projectathon testing.

- Provide certificate information – required prior to Connectivity Testing (send to interoperability@infoway-inforoute.ca)
- Contact us for any questions and/or support related to the Projectathon registration and testing



Canada Health Infoway

Thank you!

To learn more about the Projectathon 2023, visit:

<https://infoscribe.infoway-inforoute.ca/display/PCI/Projectathon+March+2023>

Contact Information:

interoperability@infoway-inforoute.ca

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QUESTIONS



Appendix



Expected Errors/Warnings – Non-Resolvable Value Sets

- Validator cannot evaluate if a concept meets Value Set binding expectations on concepts not hosted in tx.fhir.org. See slide [Non-Resolvable Value Sets – Lists](#).
- The severity of this flagged issue (error vs warning) varies based on the profiled binding strength of value set.
 - PS-CA Warning Example – PractitionerSpecialty Binding Preferred:
"Bundle.entry[0].resource.entry[2].resource.ofType(PractitionerRole).specialty[0]: ValueSet https://fhir.infoway-inforoute.ca/ValueSet/practitionerspecialty not found by validator"
 - PS-ON Warning Example- PractitionerSpecialty Binding Extensible:
"Bundle.entry[1].resource.entry[3].resource.ofType(PractitionerRole).identifier[0].type: None of the codings provided are in the value set 'IdentifierType' (http://hl7.org/fhir/ValueSet/identifier-type), and a coding should come from this value set unless it has no suitable code (note that the validator cannot judge what is suitable) (codes = http://terminology.hl7.org/CodeSystem/v2-0203#RRI)"
 - PS-ON Error Example – CCDD Binding Required: *"Bundle.entry[12].resource.medication.ofType(CodeableConcept): None of the codings provided are in the value set 'PrescribeIT Prescription Medicinal Product' (https://fhir.infoway-inforoute.ca/ValueSet/prescriptionmedicinalproduct), and a coding from this value set is required) (codes = https://fhir.infoway-inforoute.ca/CodeSystem/canadianclinicaldrugdataset#9000152)"*

Expected Errors/Warnings – Extensible Value Sets

- Extensible binding strengths allow for concepts to be provided outside of the bound value set if there is no suitable code in the value set for expressing the concept
- The “appropriateness” of this provided code can’t be mechanically determined so two warnings are always issued by the validator – Warning on the Bundle.entry[1] (Composition) and a warning on Bundle.entry[x] (the resource itself)
 - PS-CA Warning Example – Absent or Unknown Binding on Binding on MedicationStatement.medication[x]:medicationCodeableConcept: *“Bundle.entry[10].resource.medication.ofType(CodeableConcept): None of the codings provided are in the value set 'Absent or Unknown Medication - IPS' (<http://hl7.org/fhir/uv/ips/ValueSet/absent-or-unknown-medications-uv-ips>), and a coding should come from this value set unless it has no suitable code (note that the validator cannot judge what is suitable) (codes = <https://fhir.infoway-inforoute.ca/CodeSystem/canadianclinicaldrugdataset#02150328>)”*
 - PS-ON Warning Example- PractitionerSpecialty Binding Extensible – Other Identifier Type Provided:
“Bundle.entry[1].resource.entry[3].resource.ofType(PractitionerRole).identifier[0].type: None of the codings provided are in the value set 'IdentifierType' (<http://hl7.org/fhir/ValueSet/identifier-type>), and a coding should come from this value set unless it has no suitable code (note that the validator cannot judge what is suitable) (codes = <http://terminology.hl7.org/CodeSystem/v2-0203#RRI>)”
“Bundle.entry[3].resource.identifier[0].type: None of the codings provided are in the value set 'IdentifierType' (<http://hl7.org/fhir/ValueSet/identifier-type>), and a coding should come from this value set unless it has no suitable code (note that the validator cannot judge what is suitable) (codes = <http://terminology.hl7.org/CodeSystem/v2-0203#RRI>)”

Expected Errors/Warnings – Non-Resolvable Displays

- TX.FHIR.ORG is experiencing a bug where display values for SNOMED CT CA Edition concepts are not resolving
- This results in two warnings being issued by the validator when display is provided– Warning on the Bundle.entry[x] resource of type and a warning on Bundle.entry[x]resource.code
 - *Bundle.entry[1].resource.entry[3].resource.ofType(PractitionerRole).specialty[0].coding[0]: The display "Primary care (qualifier value)" is not a valid display for the code {http://snomed.info/sct}999484691000087103 - should be one of [] (from http://tx.fhir.org/r4) for 'http://snomed.info/sct#999484691000087103'"*
 - *Bundle.entry[3].resource.specialty[0].coding[0]: The display "Primary care (qualifier value)" is not a valid display for the code {http://snomed.info/sct}999484691000087103 - should be one of [] (from http://tx.fhir.org/r4) for 'http://snomed.info/sct#999484691000087103'"*
- Additionally, there is at least one case where Additional Language displays for IPS value sets are being incorrectly incorporated by tx.fhir.org
 - *"Bundle.entry[7].resource.ofType(Condition).code.coding[0]: Display Name for http://hl7.org/fhir/uv/ips/CodeSystem/absent-unknown-uv-ips#no-problem-info should be one of 'No information about problems, Nessuna informazione disponibile su problemi o disabilit ' instead of 'No information about current problems' for 'http://hl7.org/fhir/uv/ips/CodeSystem/absent-unknown-uv-ips#no-problem-info'"*

Non-Resolvable Value Sets - Lists

- <https://fhir.infoway-inforoute.ca/ValueSet/practitionerspecialty>
- <https://fhir.infoway-inforoute.ca/ValueSet/healthcareproviderroletype>
- <https://fhir.infoway-inforoute.ca/ValueSet/prescriptionmedicinalproduct>