



Canada Health Infoway

Canada Health Infoway Overview

Canada Experiences in Vaccine Coding

International Vaccine Catalogue (IVC) Initiative Summit

May 9, 2025

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Agenda

- Introduction
 - Canada Health Infoway (CHI)
 - Canadian Standards Release Centre (CSRC)
- Overview
 - how and where vaccinations are recorded in Canada
- pan-Canadian Health Data Content Framework (pCHDCF)
- Pan-Canadian Patient Summary (PS-CA)
- Challenges and Successes
- Questions



Canada Health Infoway

Introduction

- Canada Health Infoway (CHI)
- Canadian Standards Release Centre (CSRC) for Vaccine content

Canada Health Infoway (CHI)

- Established in 2001
 - Independent
 - not-for-profit organization
- Infoway's Mandate
 - ✓ **National leadership** role in accelerating collective digital health efforts
 - ✓ Ensuring a pan-Canadian **vision, strategy, architecture and plan**
 - ✓ Ensuring **national standards**



Canadian Standards Release Center (CSRC)

- Infoway's CSRC plays a vital role in advancing the adoption **of pan-Canadian and international standards** to enable semantic interoperability in the digital health ecosystem.

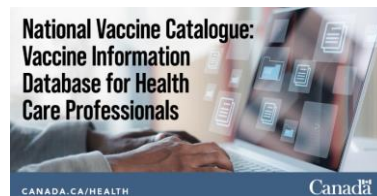


➤ Publication & Distribution

- Quarterly release: February, May, August, November

➤ **SNOMED CT CA Edition**

- CA English and CA French
- Current **code system** used in Canada for vaccine
- Content leveraged by National Vaccine Catalogue (NVC)
 - Includes information on all vaccines authorized in Canada and on product-specific details such as: Drug Identification Numbers (DINs), Lot numbers, Expiry dates SNOMED CT terminology





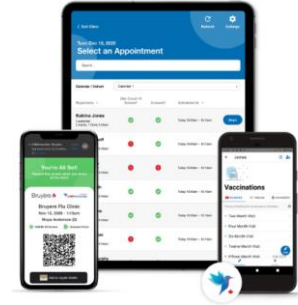
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Overview: how and where vaccinations are recorded in Canada

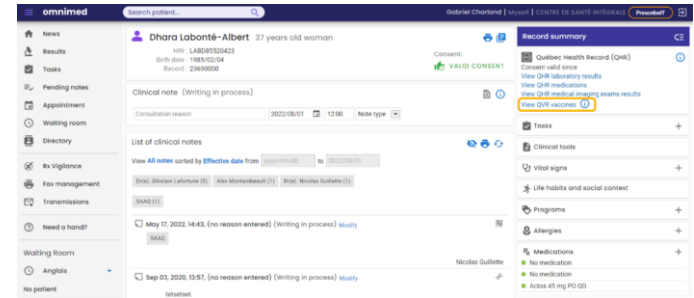
Immunization registries
National Vaccine Catalogue (NVC)
Terminology Server

Immunization registries

- Confidential and population-based digital systems to track vaccinations within specific regions
- No national immunization registry in Canada
 - Each Province and Territory (P/T) manages its own immunization registry
- Based on International Specifications and Standards
 - Effectiveness depends on high-quality data and interoperability with other systems

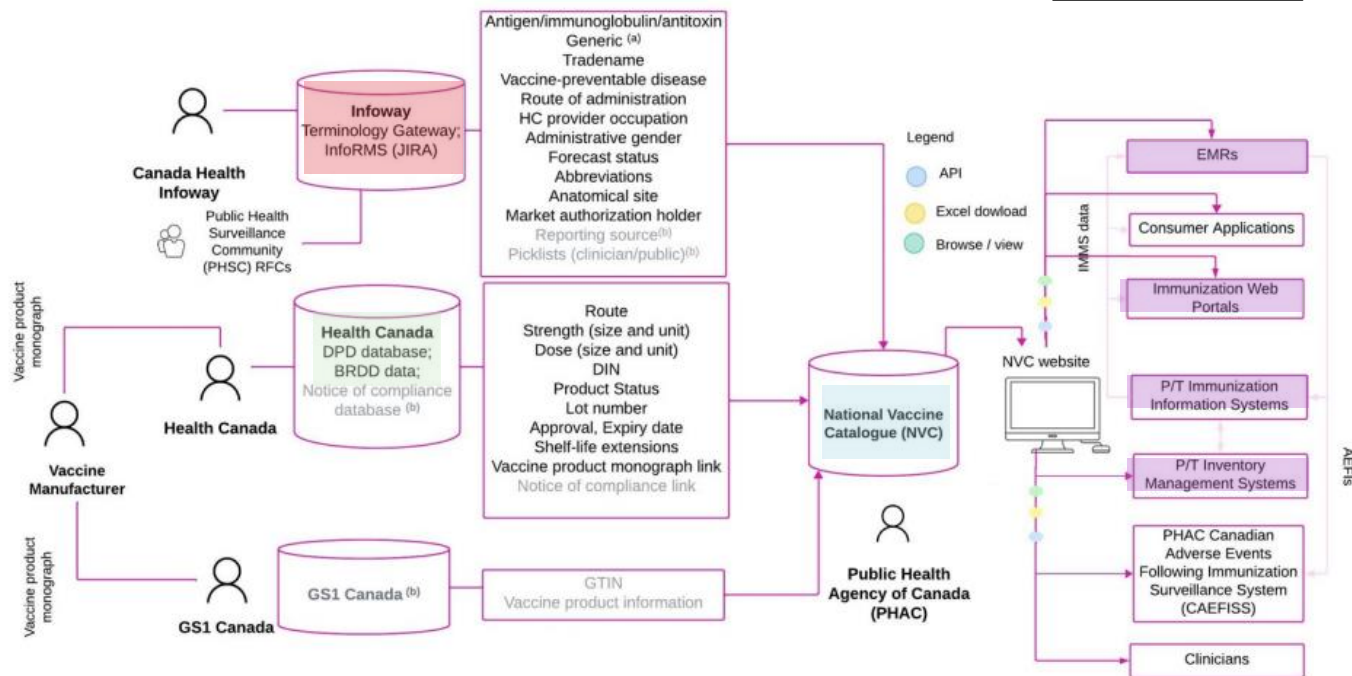


- Exceptions
 1. Newfoundland and Labrador: 4 regional immunization registries
 2. Northwest territories: vaccinations captured by electronic medical record (EMR)
 3. Nunavut: no registry



<https://www.omnimed.com/en/aide/access-the-qu%C3%A9bec-vaccination-registry-qvr>

National Vaccine Catalogue (NVC)



(a) Encompasses historical/international agents support by Infoway to meet P/T needs

(b) Integration in 2025-2026

Abbreviations: DPD- Drug Product Database; HC-BRDD- Health Canada's Biologic and Radiopharmaceutical Drugs Directorate; IMMS -immunizations; AEFIs- adverse events following immunizations

National Vaccine Catalogue (NVC)

Figure 1: Primary users of the NVC

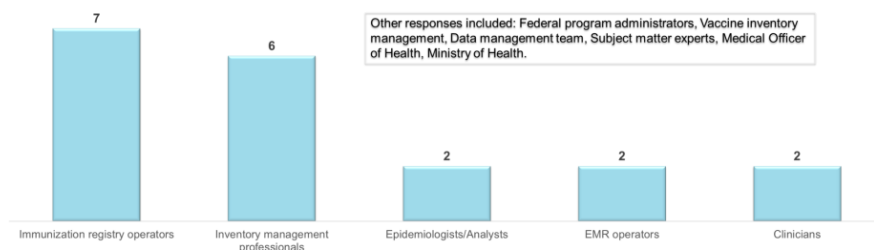
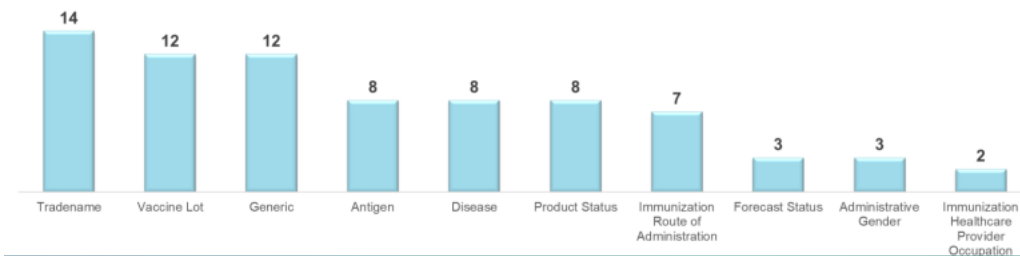


Figure 2: NVC access methods



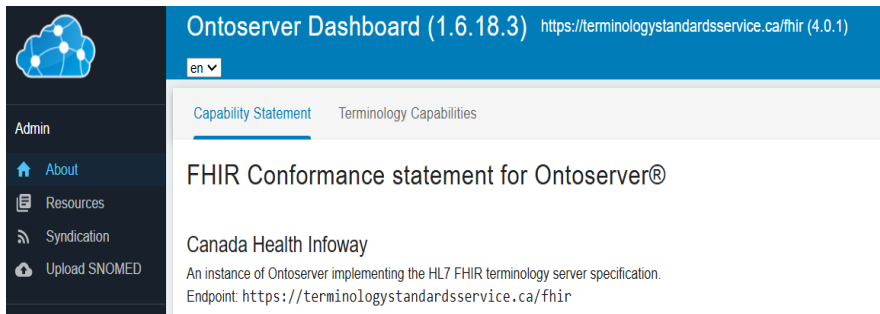
Figure 3: NVC subsets in use



How NVC leverages CHI content?

➤ Terminology Server

- Provides a single source of truth for pan-Canadian terminology
- National Terminology Server solution, it provides access to CodeSystems, ValueSets, and other Terminology artifacts for International and Canadian Terminologies and Classification such as SNOMED CT CA, LOINC, pCLOCD, UCUM, Pan-Canadian ValueSets, Canadian Clinical Drug Data Set (CCDD).
- <http://ontoserver.csiro.au>



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Benefits of a National Terminology Service

- **Centralizes Access to Standardized Health Terminologies. Enables Interoperability.** Facilitates more frequent updates of standard clinical terminologies across diverse pan-Canadian digital solutions and systems. This enables health care staff to access more reliable, standardized information, leading to more informed treatment decisions and improved patient care.
- **Supports Improved Collaboration.** Tools to enable content creation and content use, offering the ability to participate as part of the healthcare ecosystem and work collaboratively.
- **Provides Pathways for Advanced Use of Terminologies.** Realizes the benefits of adopting terminologies for enhanced reporting, analytics, and research purposes through the availability of comparable information.
- **Fully Enabled FHIR Terminology Capabilities.** Includes broad support for the [standard FHIR terminology resources and operations](#). These capabilities include Search, Create, Read, Update, and Delete operations on ValueSet, ConceptMap, CodeSystem, NamingSystem, and StructureDefinition; as well as other terminology-specific operations such as \$expand, \$validate-code, \$lookup, \$subsumes, \$find-matches, \$closure, \$translate, and \$validate.
- **Information Modeling and Specification Development.** Support Concept Maps, binds terminology and ValueSets to data models and specifications, validates terminology content against specifications, and ensures FHIR resource compliance.



Success: Terminology Server

Key Challenges today:

- Local terminologies used, rather than nationally consistent terminologies
- The use of outdated terminology
- Complexity for those consuming multiple national terminologies
- The use of non-structured (non-hierarchical) terminologies resulting in poor data outputs / analytics
- Limited breadth and depth of understanding of terminology
- Adoption of SNOMED – barrier to entry too high for small organisations
- Thousands of copies of terminology data throughout the system, incoherently maintained
- Local workarounds in place that are persisted, rather than resolved and shared across the ecosystem

Challenges in establishing consistent use of terminology at national level

Creating a Terminology Service with key national content

- ✓ Maintaining a reliable and consistent Terminology service
- ✓ Educating and training stakeholders and users
- ✓ Publish terminologies in standard FHIR format
- ✓ Supporting individual use cases
- ✓ Establishing a mechanism for collaboration and content sharing
- ✓ Reduce duplication of effort across the healthcare ecosystem
- ✓ Harmonising the standardisation of healthcare relevant data to support the digital health ecosystem
- ✓ Focus clinical resource on the data not the tools

Syndicated National Terminology Service



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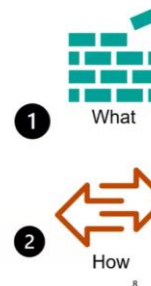
pan-Canadian Health Data Content Framework (pCHDCF)

pan-Canadian Health Data Content Framework (pCHDCF)

- Canada's health data system is complex and **fragmented**
 - Focused more on digitizing data than on sharing it across systems.
 - Canadian Institute for Health Information (CIHI) developed the Pan-Canadian Health Data Content Framework (**pCHDCF**)
 - a national strategy developed to **define, model, and standardize** person-centric health data content, beginning with primary care and expanding to other domains like hospitals and long-term care, across Canada.

➤ Shared Pan-Canadian Interoperability Roadmap.

1. Enable **timely and accessible data exchange** across systems.
2. Ensure **semantic consistency** - data means the same across contexts.
3. Ensure data **directly benefits patients**.



Health data content foundation:
CIHI is defining the underlying data content and data structure (i.e., data necessary for diagnosis and treatment)

Data exchange “transport” standard:
Infoway is building the technical exchange standards that enable information to flow between systems

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Infoway Santé du Canada
CIHI ICIS

pan-Canadian Health Data Content Framework (pCHDCF)

Immunization

The following data elements pertain to information about the record of vaccine administration.

Data element name	Data element definition	Data element maturity	Value set (code system)	Value set examples	Value set maturity
Immunization Guideline Name	The name of the immunization protocol, including the dosing guide and schedule (e.g., hepatitis A immunization guide)	2: Proposed	n/a	n/a	n/a
Immunization Guideline Authority	The authority responsible for publishing the guidelines (e.g., Health Canada, Public Health Agency of Canada)	2: Proposed	n/a	n/a	n/a
Immunization Guideline Target Disease	The vaccine-preventable disease being targeted by the immunization	2: Proposed	VaccinePreventableDiseaseCode (SNOMED CT CA)	<ul style="list-style-type: none"> Measles Lyme disease Typhoid fever 	2: Proposed
Immunization Reporting Source*	The source of information reporting the immunization event (e.g., person, provider)	1: Draft	ImmunizationReportingSourceCode (SNOMED CT CA)	<ul style="list-style-type: none"> Computer record of patient Health care professional Person 	1: Draft
Immunization* (Essential)	The immunizing agent identified through its trade name or generic name Additional guidance VaccineAdministeredTradeNameCode and PassiveAdministeredImmunizingAgentCode will be used to document an immunization event, while VaccineHistoricalNameCode and PassiveHistoricalImmunizingAgentCode can be used to record historical immunizations or when the specific immunization details are not known. The pan-Canadian recommended value sets are integrated in the National Vaccine Catalogue, which can be referenced for mapping to additional fields.	2: Proposed	VaccineAdministeredTradeNameCode (SNOMED CT CA)	<ul style="list-style-type: none"> Inf Xanadu API LZV ZOSTAVAX II MC MMR-Var ProQuad Merck 	2: Proposed
			VaccineHistoricalNameCode (SNOMED CT CA)	<ul style="list-style-type: none"> Pneu-C-7 pneumococcal conjugate 7-valent unspecified COVID-19 whole inactivated virus unspecified Inf influenza unspecified 	2: Proposed
		2: Proposed	PassiveAdministeredImmunizingAgentCode (SNOMED CT CA)	<ul style="list-style-type: none"> BAtx BAT Cang CMVlg Cylogam KIB HBlg HepaGam B KIB 	2: Proposed
			PassiveHistoricalImmunizingAgentCode (SNOMED CT CA)	<ul style="list-style-type: none"> CMVlg Cylogam CSL DAtx Diphtheria antitoxin IOI HBlg HepaGam B Cang 	2: Proposed

Data element name	Data element definition	Data element maturity	Value set (code system)	Value set examples	Value set maturity
Immunization Expiration Date	The expiration date of the immunization product	2: Proposed	n/a	n/a	n/a
Immunization Manufacturer	The name of the immunization manufacturer	2: Proposed	ImmunizationMarketAuthorizationHolderCode (SNOMED CT CA)	<ul style="list-style-type: none"> AstraZeneca Canada Inc. Baxter Corporation GlaxoSmithKline Inc. 	1: Draft
Immunization Lot Number*	The lot number of the immunization product	2: Proposed	n/a	n/a	n/a
Immunization Series Doses	The recommended number of doses for heightened immunity against the target disease	2: Proposed	n/a	n/a	n/a
Immunization Dose Number*	The dose number within a series (e.g., dose 1 of 2 for shingles immunization)	2: Proposed	n/a	n/a	n/a
Immunization Subsequent Reason*	The reason why the dose is considered to be subsequent	2: Proposed	To be developed	To be developed	Future development
Immunization Reason*	The reason why the immunization product was administered (e.g., routine immunization, high-risk immunization)	2: Proposed	ActImmunizationReason (SNOMED CT CA)	<ul style="list-style-type: none"> High-risk immunization Routine immunization 	2: Proposed
Immunization Reason Not Performed*	The reason the immunization event was not performed	2: Proposed	ActNoImmunizationReason (SNOMED CT CA)	<ul style="list-style-type: none"> Anaphylaxis to previous dose or a constituent of this vaccine Guillain-Barré syndrome developed within 0 to 8 weeks of previous immunization Known immunity confirmed by lab result 	2: Proposed
Immunization Dose Volume*	The dose volume of the immunization product being administered	2: Proposed	n/a	n/a	n/a
Immunization Dose Unit of Measure*	The unit of measure for the immunization dose (e.g., mL, mg, mcg)	2: Proposed	PrescriptionDoseQuantityUnit (SNOMED CT CA UCUM)	<ul style="list-style-type: none"> mL mg mcg 	2: Proposed

- Data Content Standard defines specific data elements and value sets needed for interoperable clinical care and patient record access.
- from Canadian and international models, such as the International Patient Summary and EMR Minimum Data Sets
- wide audience—from clinicians and system developers to patients and researchers [pCHDCF](#)



Canada Health Infoway

Pan-Canadian Patient Summary (PS-CA)

Pan-Canadian Patient Summary (PS-CA)



- **BASED ON INTERNATIONAL SPECIFICATIONS AND STANDARDS**
The **pan-Canadian Patient Summary (PS-CA)** is an **implementable, testable specification**, based on the **International Patient Summary (IPS)**, as defined by IHE International Patient Summary Specification, HL7 IPS Implementation Guide, 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.

It defines the **content data and interoperability building blocks** needed to **create and share patient summaries**.

PS-CA Data Domains of Interest by Canadian Jurisdiction

	IPS		PS- CA		AB	BC	MB	NB	NL	ON	SK	v2.0.0 DFT	Upcoming
Header	Subject	Header	Subject									✓	✓
	Author		Author									✓	✓
	Attester		Attester									✓	✓
	Custodian		Custodian									✓	✓
Required	Medication Summary	Required	Medication Summary									✓	✓
	Allergies and Intolerances		Allergies and Intolerances									✓	✓
	Problem List		Problem List									✓	✓
Recommended	Immunizations	Recommended	Immunizations									✓	✓
	History of Procedures		History of Procedures									✓	✓
	Medical Devices		Medical Devices (IPS-UV)									✓	✓
	Diagnostic Results		Diagnostic Results									✓	✓
Optional	Vital Signs	Optional	Vital Signs (IPS-UV)									✓	✓
	Past history of illness		Past History of illness									✓	✓
	Social History		Social History									✓	✓
	Advance Directives		Advance Directives (IPS-UV)									✓	✓
	Pregnancy		Pregnancy (IPS-UV)									✓	✓
	Functional Status		Functional Status (IPS-UV)									✓	✓
	Plan of Care		Plan of Care (IPS-UV)									✓	✓
	Patient Story (coming soon)		Patient Story (IPS-UV)									N/A	✓
	Alerts (coming soon)		Alerts (IPS-UV)									N/A	✓
EXT		EXT	Extension(s)										
			Family History									✓	✓

The evolution of the PS-CA and IPS is a collaborative effort, **with each providing guidance and input to the other.**

Infoway **collaborates with stakeholders** to understand jurisdictional needs and to reach a **consensus on priorities.**

Legend

- Blue: header domains
- Red: required domains
- Orange: recommended domains
- Green: optional domains
- Grey: common domains by jurisdiction
- White: domains not identified by jurisdictions as priority and/or not yet included in the PS-CA



Canada Health Infoway

Challenges and Successes

Challenges, Successes, and Lessons Learned



Successes

NVC directly connected to CHI content
Provinces
Vendors ...etc.

Request for change (RFC): well established process

PHSC : one representative that creates RFCs for the whole community

Efficiency to respond to vaccine RFCs rapidly

Immunization and COVID dashboards for follow-up on RFCs and early adoption of codes

Terminology Server

Challenges

NVC → reach to vendors

Reference point in specifications like PS-CA and pCHDCF from CIHI

Picklists

Clinicians: created in 2013 but were never used, 2024 new picklists.

Patients Picklists: conformity

Currently developing Drug extension

Alignment with SNOMED INT

Vaccines are currently out-of-scope for this extension, but should be included



Canada Health Infoway

Thank you!

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Acronyms

- CIHI: Canadian Institute for Health Information
- CHI: Canada Health Infoway
- CVC: Canadian Vaccine Catalogue
- CIRC: Canadian Immunization Registry and Coverage network
- EHR: Electronic Health Records
- EMR: Electronic Medical Records
- IRFS: Immunization Registry Functional Standards
- NVC: National Vaccine Catalog
- pCHDCF: Pan-Canadian Health Data Content Framework
- PHAC: Public Health Agency of Canada
- PHSC: Public Health Surveillance Community
- P/T: Provinces and Territories
- RFC: Request For Change
- SNOMED CT CA: Canadian edition of SNOMED CT