Standards 101

May 7, 2024

Anil Patel, Sr Standards Specialist
Linda Monico, Sr Standards Specialist
Canada Health Infoway

About Us

Anil Patel

- Sr Standards Specialist, Canadian Standards Release Centre, Canada Health Infoway

- Leading Subsets, Maintenance and publishing.

- Infoway HL7 Canada Council Representative at HL7 International and FHIR baseline community.

- UCUM advisor

- LOINC Commitee member for Lab LOINC, Clinical LOINC and Document Ontology

- Laboratory medicine background.

Linda Monico

- Sr Standards Specialist, Canadian Standards Release Centre, Canada Health Infoway

- Leading authoring and publishing of bi-annual release for pan-Canadian LOINC Observation Code Database.

- LOINC Lab Committee Member

- Lead support for InfoCentral, Infoway's Interoperability Collaboration Platform

- Background: Business & Health Information Management

Canada Health Infoway

Canada Health Infoway

Agenda

- Who we are
- What services we offer
- Overview of Health Terminology and Data Exchange Standards
- Applying Interoperability Standards
- What is on the horizon
- How to get involved

About Infoway and Our Stakeholders

- Established in 2001

- Independent, not-for-profit corporation

- Equally accountable to 14 federal, provincial and territorial governments through the Members of the Corporation (F/P/T Deputy Ministers of Health)

- Independent Board of Directors appointed by the Members

Governments

Provinces and Territories

Health Care Organizations

Industry

Clinicians

Patients

Canada Health Infoway

Who We Are

WE MOBILIZE CANADA'S HEALTH CARE STAKEHOLDERS TOWARDS A REIMAGINED FUTURE.
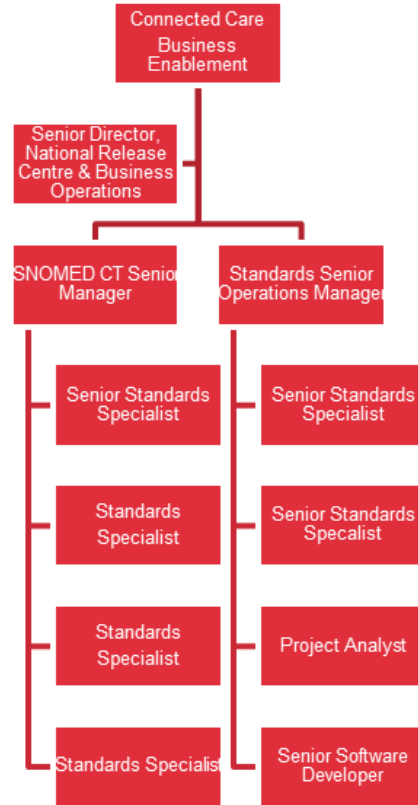

Vision

Healthier Canadians through innovative digital health solutions

Mission

Infoway will bring a pan-Canadian focus to: improving the patient experience, improving the health of populations, and unlocking value for the health system

Canada Health Infoway

About the Canadian Standards Release Centre Team

The Standards Services We Provide

Interoperability Standards at Infoway
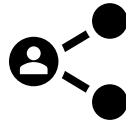
Canada Health Infoway

Direct Services to Canadians

Standards Content Development

Licensing and Distribution

SDO Affiliates, Secretariat Support, Ballots, for HL7 Canada, DICOM, IHE Canada, ISO/TC215

Canada Health Infoway

Content Development

Request Submission Management

InfoRMS

Request Management Solution

Infoway Request Management System (InfoRMS) is Infoway's Request for Change (RFC) tool for SNOMED CT, pCLOCD/LOINC® and pan-Canadian Subsets. Not sure if you have access to InfoRMS? Manage your InfoRMS Access in your user profile.

Terminology Authoring and Translation

termSpace   Collaborative Terminology Authoring

Terminology Project: Canada Health Infoway English Extension
Canada Health Infoway English Extension

My Inbox >

There are ... tasks in the inbox.
The inbox contains tasks assigned to you and to your groups. All your authoring actions can start from the inbox.

Inbox

SNOMED CT Authoring tools >

Direct access to authoring tooling.
The authoring tools allows you to browse the terminology and perform unstructured edits. All changes will originate new review tasks.

Concept Editor   Translation Editor

Content Issue Tracking

Version 2023-03-31 RELEASED

📅 Start date not set   Released: 31/Mar/23   Release Notes
March 31, 2023 CA Edition SNOMED CT Release

| 2907 | Issues in version | 2135 | Issues done | 772 | Issues in progress | 0 | Issues to do |

1–200 of 2907

P	T	Key	Summary
	C	SCT-10554	Review CA Diagnostic Imaging (CT and Fluoroscopy angiography)
	C	SCT-12109	Pectobacterium carnegieana (organism)
	C	SCT-12485	Meyerozyma guilliermondii complex (organism)
	C	SCT-13407	Dermatitis due to ingested substance (disorder)
	C	SCT-13539	Modified early warning score- total score (observable entity)

COVID-19 Canada Public Health Terminology Dashboard

Filter Results: COVID-19 Subset CA RFC

T	Key ↓	Status	Summary
⊙	SR-216	COMPLETED	Add generic COVID-19 mRNA vaccine to VaccineHistoricalNameCode Subset
⊙	SR-215	COMPLETED	Add Disease caused by SARS-CoV-2 concept to VaccinePreventableDiseaseCode subset
⊙	SR-214	COMPLETED	Add Antigen of SARS-CoV-2 concept to AntigenCode Subset

1 – 3 of 3

Filter Results: COVID-19 pCLOCD RFC

T	Key	Status	Summary
✚	PCL-3350	COMPLETE	SARS coronavirus 2 nucleocapsid protein Ab.IgG

Filter Results: COVID-19 SNOMED CT CA RFC

				Created	Updated	Fix Version/s
C	SCT-16035	ACCEPTED	COVID-19 CORBEVAX BE (product)	29/Mar/23	26/Apr/23	2023-09-30
D	SCT-15803	COMPLETED	Add French PT for 37651000087101 (SPIKEVAX Bivalent (Original / Omicron BA.4/BA.5) messenger ribonucleic acid 0.10 milligrams per 1 milliliter dispersion for injection Moderna Therapeutics Inc. (real clinical drug))	12/Sep/22	19/Apr/23	2023-09-30
C	SCT-15359	COMPLETED	COMIRNATY messenger ribonucleic and 1 bivalent suspension for injection BioNTech Manufacturing GmbH (real clinical drug)	04/Aug/22	14/Apr/23	2023-03-31

Licensing and Distribution

Release Management

Welcome to Terminology Gateway
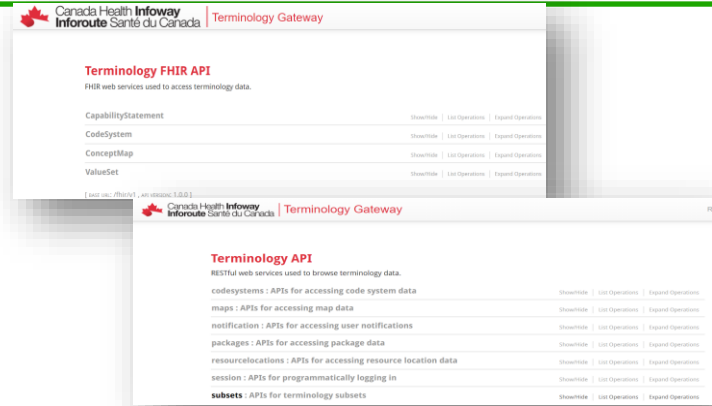Browse, download and leverage the terminology used in Canada

- Q **Subsets**
- **pCLOCD**
- **SNOMED CT**
- **PrescribeIT®**
- **Canadian Clinical Drug Data Set**
- **Additional Terminology Content**

Browser Query

Services to the Communities of Practice

Education & Training

Webinars

Collaboration Groups, Community of Practice

Communications, promotion and social media

Canada Health Infoway

InfoCentral: A Collaboration Hub

Working Groups

https://infocentral.infoway-inforoute.ca/en/collaboration/wg

Communities

https://infocentral.infoway-inforoute.ca/en/collaboration/communities

Standards Centre

SNOMED CT CA/ SNOMED CT

Infoway's Standards Resources for COVID-19 contains regularly updated information on terminology changes in support of the Coronavirus outbreak.

SNOMED CT is the largest and most comprehensive clinical reference terminology in the world.

The SNOMED CT Canadian Edition* contains content that is specific to Canadian use contexts and is maintained by Canada Health Infoway. It is released in March and September of each year.

The International Release of SNOMED CT contains international content and is maintained by SNOMED International released on January 31 and July 31 of each year.

⊕ Download Latest Releases

🔑 login required

pCLOCD/ LOINC

COVID-19 Surveillance: Single source for all SARS-CoV-2/COVID-19 LOINC content, includes both released and pre-release terms. Content is updated as new terms are created and pre-released.

Infoway's Standards Resources for COVID-19 contains regularly updated information on terminology changes in support of the Coronavirus outbreak.

LOINC® is the largest reference terminology used for Laboratory and Clinical observations in Canada today. The pan-Canadian LOINC Observation Code Database (pCLOCD) is a Canadian constraint of the larger LOINC terminology and includes example pan-Canadian names for jurisdictional lab viewers and recommended units of measure for use in Canada.

pCLOCD releases contains codes that are specific to use in Canada and is maintained by Canada Health Infoway. It is released on March 31 and September 30 of each year.

https://infocentral.infoway-inforoute.ca/en/standards/canadian
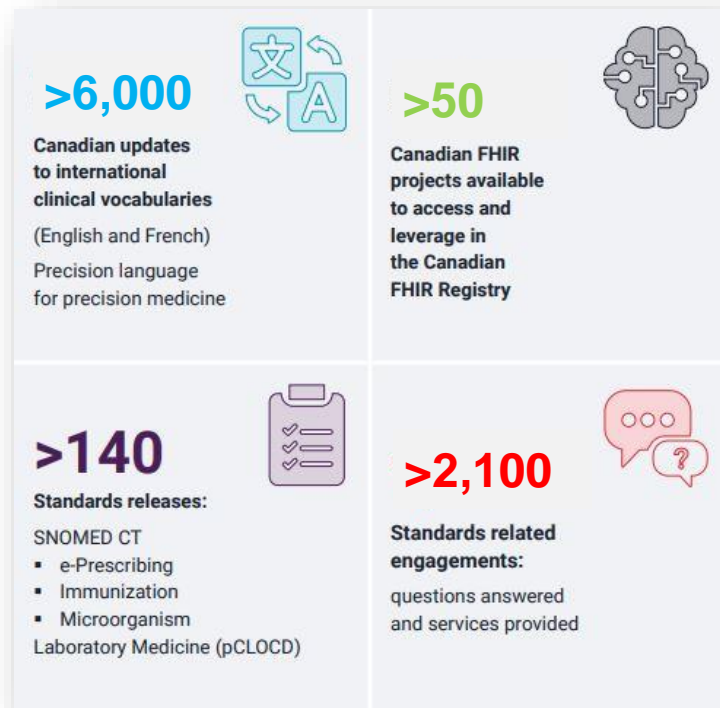
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Canada Health Infoway

Education

- [SNOMED International](#)

- [Regenstrief Institute](#)

- [HL7 International](#)

- [Infoway ongoing Webinars](#)

- [University of Victoria](#)

- [CHIMA and CTSS credential](#)

- Training and refresher on :

  - Tooling and Standards

  - Requests for Change and Implementation questions

Canada Health Infoway

Some 2023-2024 Canadian Interoperability Metrics

>6,000

Canadian updates to international clinical vocabularies

(English and French)

Precision language for precision medicine

>50

Canadian FHIR projects available to access and leverage in the Canadian FHIR Registry

>140

Standards releases:

SNOMED CT
- e-Prescribing
- Immunization
- Microorganism

Laboratory Medicine (pCLOCD)

>2,100

Standards related engagements:

questions answered and services provided

Canada Health Infoway

Health Terminology Standards

Pan-Canadian constraint of Laboratory LOINC

- Infoway: Canada's Standards Release Centre for pCLOCD (pan-Canadian LOINC Observation Code Database)

- Largest laboratory terminology in the world with some clinical documents

- US English and Canadian French

- Recommended units of measure (UCUM)

- Release dates: March 31 and September 30 each year

- Most successful standard implementation

Canada Health Infoway

pan-Canadian LOINC Observation Code Database Metrics

Pan-Canadian LOINC Observation Code Database
March 2024 Release

39,797 total records, including:
15 new records added in English and French
67 records modified in English and French
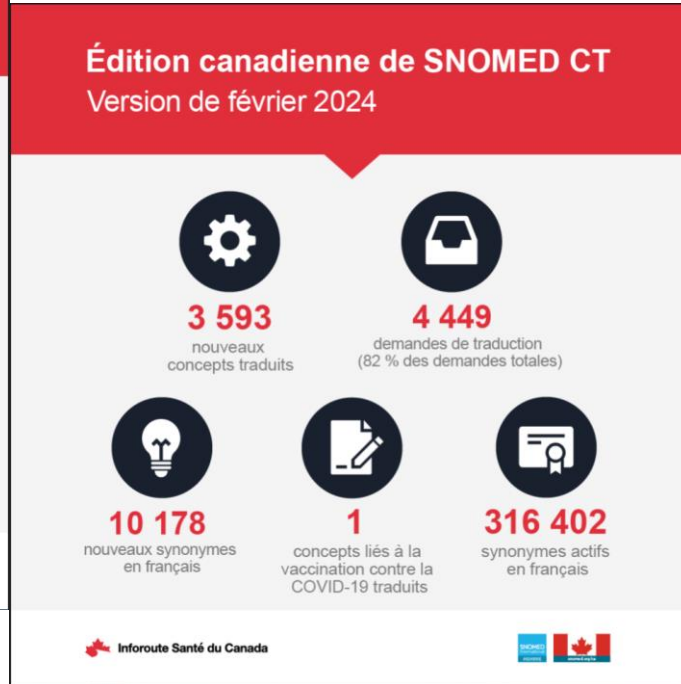
Download on Terminology Gateway!   Canada Health Infoway   pCLOCD LOINC in Canada

Canada Health Infoway

Canadian Edition of SNOMED CT
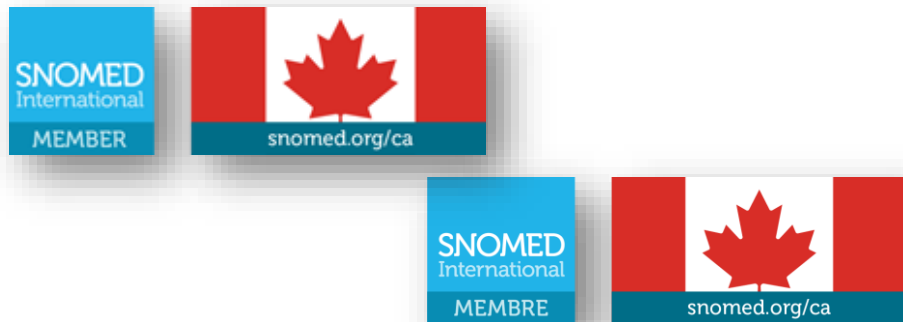
- Infoway: Canada's National Release Centre for SNOMED CT

- Largest clinical reference terminology in the world

- US English and Canadian French

- Release dates: Quarterly (End of February, May, August, November)

https://www.snomed.org/_files/ugd/900274_8a849a3565054d14a4c94cf1062331a3.pdf

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Canadian Edition of SNOMED CT Metrics

SNOMED CT Canadian Edition
February 2024 Release

- 52 subsets maintained
- 5,423 total requests for change
- 542 new concepts
- 225 concepts promoted to international
- 1 new COVID-19 vaccine concepts

Canada Health Infoway

Édition canadienne de SNOMED CT
Version de février 2024

- 3 593 nouveaux concepts traduits
- 4 449 demandes de traduction (82 % des demandes totales)
- 10 178 nouveaux synonymes en français
- 1 concepts liés à la vaccination contre la COVID-19 traduits
- 316 402 synonymes actifs en français

Inforoute Santé du Canada

Canada Health Infoway

Uses for Standards

Health Terminologies

Fit for Purpose Terminology
Lab tests, clinical measurements, Clinical documents, survey instruments: **LOINC**
Clinical Data (Diagnosis, Problems, Procedures, Organisms etc.) : **SNOMED CT;**
Drugs: **CCDD**
Statistical classification for aggregation, disease incidence and prevalence: **ICD-10-CA/CCI**
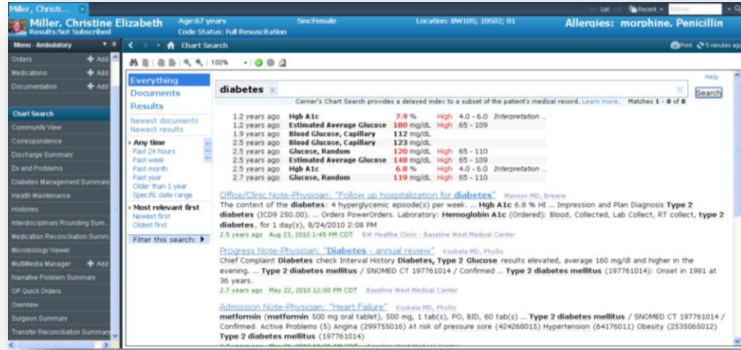

We do measurements
LOINC is focused on one piece of the interoperability puzzle
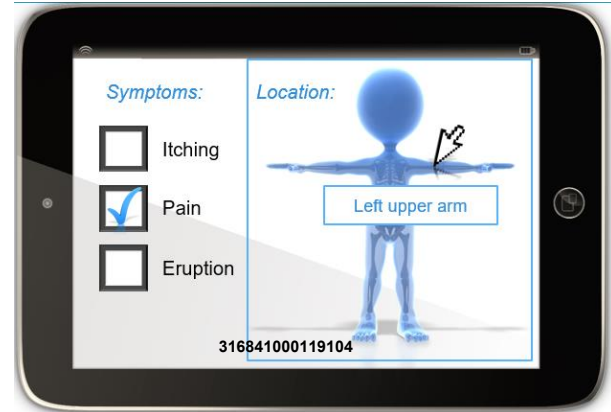
REF: HTTPS://LOINC.ORG/FHIR/

Where is SNOMED CT used?
SNOMED CT–embedded Clinical Information Systems, Health Data & Analytics Platforms and/or Interoperability Solutions

Research
Conducting clinical research, laboratory research and scientific research.

Data Entry and Integration
The recording and integration of SNOMED CT in clinical information systems and health data & analytics platforms.

Clinical Information Sharing
The electronic exchange of clinical data and documents among Care Providers along the continuum of care, often using interoperability solutions.

Management Analytics
Conducting trend & comparative analysis and health system value analysis.

Population Analytics Conducting trend & comparative analysis, pharmacovigilence and clinical audit.

Point-of-Care Analytics
Creating historical summaries, doing point-of-care reporting and using clinical decision support.

REF: HTTPS://ELEARNING.IHTSDOTOOLS.ORG/

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For Data Capture/Entry and Integration

FIGURE 12.2.7-2: USER INTERFACE OF CERNER'S CHART SEARCH/SEMANTIC TOOL


Codes for individual observations

2349-9 Glucose (Presence) in Urine
61644-1 Are you able to jump up and down
8301-4 Body height
32433-5 Physical findings of Gait

Codes for collections of observations (panel, batteries and documents)

58410-2 Complete blood count (hemogram) panel
62068-2 PROMIS pediatric item bank - asthma
35095-9 Body temperature panel
18842-5 Discharge Summary

CANADA HEALTH INFOWAY, STANDARDS WEBINAR SERIES,
INTRODUCTION TO LOINC & PCLOCD, 2019

SNOMED INTERNATIONAL, SNOMED CT DATA ENTRY, 2016

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For Sharing Information
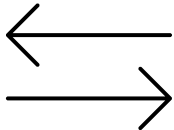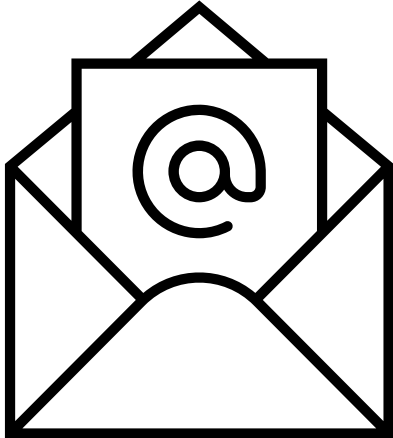
Canada Health Infoway
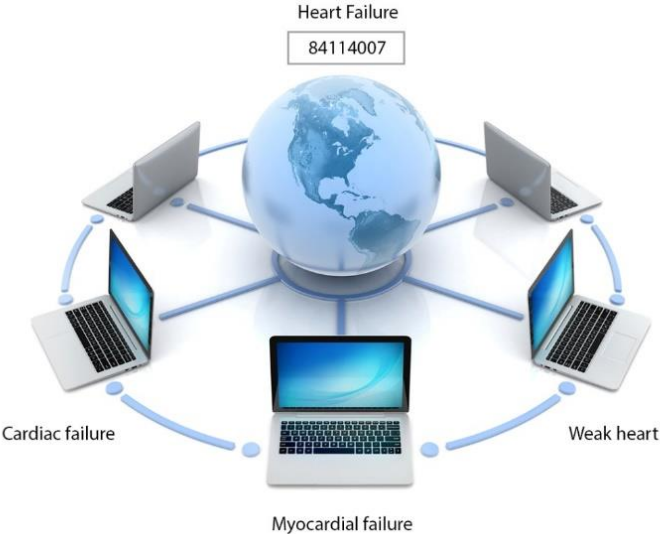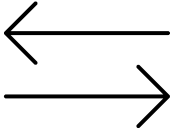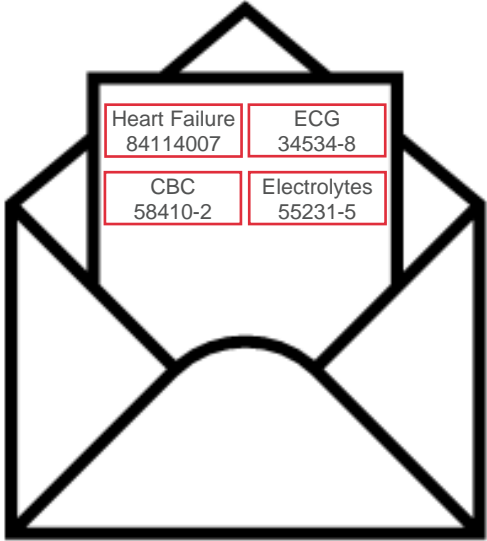
HL7 Standards: Data Exchange/Messaging

HL7® FHIR® (Fast Healthcare Interoperability Resources)

© 2017 Personal Connected Health Alliance. A HIMSS Organization

**Canada Health Infoway**
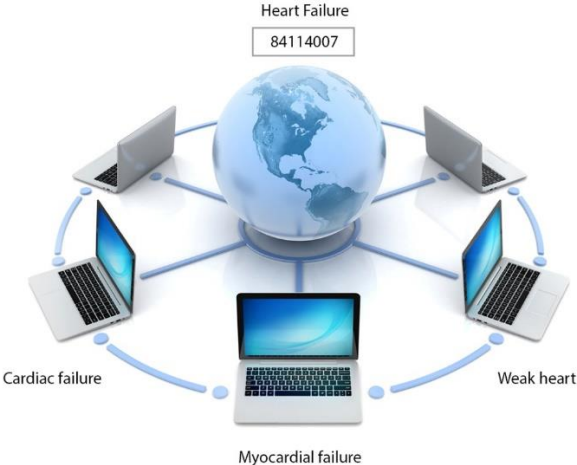
Applying Standards

Standards and Interoperability in Healthcare

Content and Terminology Standards (e.g. CDA, SNOMED-CT, LOINC)

Data Exchange Standards (e.g. HL7 V2, FHIR, DICOM, IHE)

Interoperability

Organizational

Semantic

Structural

Foundational

Standards need to be applied to achieve

REFERENCE: IMPRIVATA.COM

Canada Health Infoway
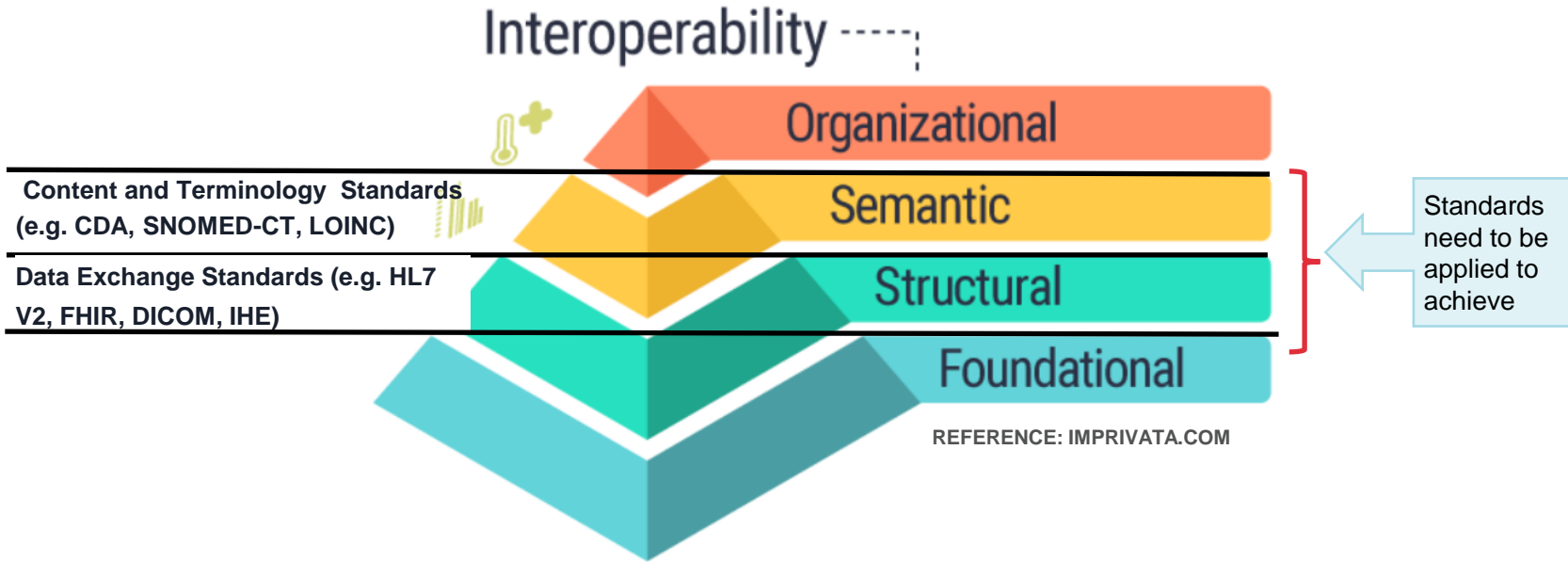
Why Interoperability Matters

- Improves continuity of care, collaboration between health providers and patient access to their health information

- Breaks down data silos

- Reduces inefficiencies and redundancies within the health system

Canada Health Infoway
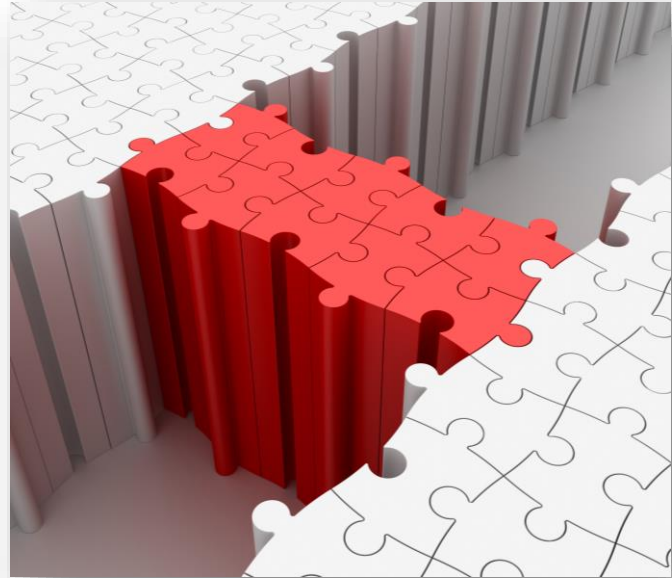
Implementation and Adoption Maturity Levels

SNOMED CT Maturity Framework

Implementation Level

Level 5	Advanced Use
⚙️	SNOMED CT is recorded directly in the health records, and used as an ontology. Support for expressions, expression constraints (ECL) and the Machine Readable Concept Model (MRCM) may be provided.
Level 4	Semantic Network
⬡	SNOMED CT is recorded directly in the health record, and used as a semantic network of relationships with simple ECL queries. All defining relationships may be traversed to support various system functions.
Level 3	Hierarchy
⛀	SNOMED CT is recorded directly in the health record, and used as a hierarchy of codes to support various system functions.
Level 2	Simple Code System
☰	SNOMED CT is recorded directly in the health records, and used as a flat list of codes. Support for translated terms or multiple synonyms may also be provided.
Level 1	Mapping to SNOMED CT
⇄	SNOMED CT is not recorded directly in the health record. SNOMED CT is used indirectly by mapping to SNOMED CT.
Level 0	Plans to Use SNOMED CT
≡	SNOMED CT is not yet used within the health record, but there are plans to do so. Clinical information is currently stored as free text or using local or vendor specific code systems.

REFERENCE:
HTTPS://CONFLUENCE.IHTSDOTOOLS.ORG/DISPLAY/IMP/IMPLEMENTATION+MATURITY

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Standards Process Maturity Levels

HL7® FHIR®

- **FMM0 (Draft)** – The resource is still in early development but has been accepted into the FHIR standard.

- **FMM1** – The Resource has no current technical errors and is believed to address all design goals.

- **FMM2** – The Resource has been tested and approved at a FHIR Connectathon with multiple FHIR-enabled computer systems tested.

- **FMM3** – The Resource passed all quality checks and an HL7 community ballot that determines if it is ready for trial use.

- **FMM4** – The Resource has been tested for functionality for all intended purposes, has been published in a formal HL7 publication, and is operating in at least one prototype system.

- **FMM5** – The Resource is in use in at least five distinct production systems operating in at least two countries.

Reference: https://www.healthit.gov/sites/default/files/page/2021-04/FHIR%20Version%20History%20Fact%20Sheet.pdf

Canada Health Infoway

The Journey

Canada Health Infoway

PrescribeIT® is Canada's national, not-for-profit e-prescribing service that provides safer and more effective medication management

- Electronic transmission of prescriptions electronically from EMR to the patient's pharmacy of choice
- Create Rx, Renew Rx, Rx Status (dispensed, cancelled etc)
- It is secure: it protects the patients' personal information from being sold or used for commercial activities
- HL7 FHIR Specification
- Leverages standards such as HL7, UCUM, pCLOCD and SNOMED-CT-CA

Fewer lost/damaged prescriptions

Improved medication safety

Decreased risk of privacy breaches due to fax transmission issues or unsecured email

Increased convenience and saved time and travel

https://www.Prescribeit.ca/

Canada Health Infoway

Canadian Clinical Drug Data Set (CCDD)

- Canada Health Infoway partnered with Health Canada to create a computable and human readable drug data set that is now owned and managed by Health Canada.

- Allows systems to exchange drug data using common drug identifiers

- Supported by knowledge base vendors and clinical systems connected to PrescribeIT®
  - Making prescribing safer for patients
  - Making clinical workflows more efficient
- CCDD is an interchange terminology

https://infocentral.infoway-inforoute.ca/en/standards/canadian/ccdd

Canada Health Infoway

Patient Summary-CA Specification

What is it?

- 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: data model and interoperability) to create and share condition-independent and specialty-agnostic patient summaries

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Content Data Model

Purpose

- Defines the Patient Summary-CA content data model and provides the required Implementation Guidance

- This section of the specification defines each data element, cardinality, data type, constraints, and code system references - all of the details needed for two systems to be semantically interoperable with each other
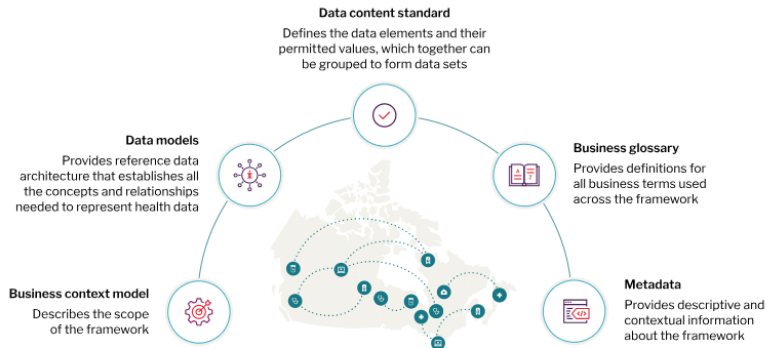
Standards

- SNOMED CT – CA Edition
- LOINC – pCLOCD
- panCanadian Valuesets
- Others

Canada Health Infoway

Pan-Canadian Health Data Content Framework

- The Pan-Canadian Health Data Content Framework defines the health data required to enable connected care across Canada.

Pan-Canadian Health Data Content Framework

Data content standard
Defines the data elements and their permitted values, which together can be grouped to form data sets

Data models
Provides reference data architecture that establishes all the concepts and relationships needed to represent health data

Business glossary
Provides definitions for all business terms used across the framework

Business context model
Describes the scope of the framework

Metadata
Provides descriptive and contextual information about the framework

- The Pan-Canadian Health Data Content Framework packages a series of individual products, which together ensure that health system technology developers can align their technical solutions with the foundational health concepts identified.

- The framework will benefit patients, health care providers, health systems and industry

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Digital Health Interoperabilty in Canada
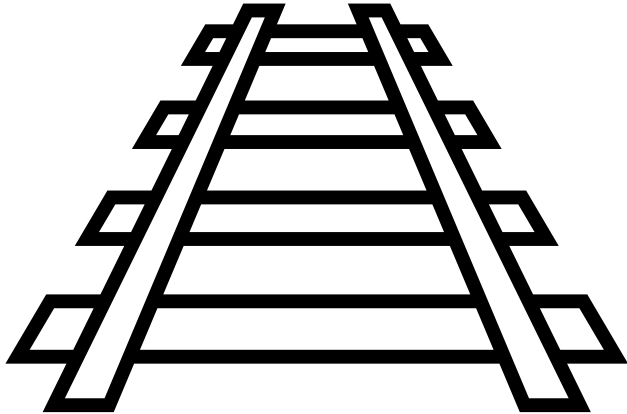
- Strengthening Data and Information

- Health Standards Governance

- Partnerships

- Systems Integration and Collaboration

- Improve interoperability

- Enable Connected Care

Canada Health Infoway

How To Get Engaged And Stay Tuned

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Follow us!

InfoCentral News

The latest on clinical interoperability across InfoCentral.

Interchange | Infoway's monthly collection of news and events of interest to digital health leaders.

Contact Us

Send an email. All fields with an * are required.

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Quick links

- InfoCentral: https://infocentral.infoway-inforoute.ca/en/

- PrescribeIT: https://www.prescribeit.ca/

- Virtual Care: https://www.infoway-inforoute.ca/en/digital-health-initiatives/virtual-care

- Organ Donation and Transplantation: https://www.infoway-inforoute.ca/en/digital-health-initiatives/organ-donation-transplantation-data-management

- Health Terminologies Community: https://infocentral.infoway-inforoute.ca/en/collaboration/communities/health-terminologies

- Terminology Gateway: https://tgateway.infoway-inforoute.ca/

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Questions?

![Canada Health Infoway]

Thank you!

Contact Us