

Canadian Core Data for Interoperability (CACDI)

Version 1

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Table of contents

Land acknowledgement	4
About the CACDI	5
Development of the CACDI	6
Canadian Core Data for Interoperability data elements	8
Person Information	9
Allergies and Intolerances	10
Immunization	11
Medication	12
Social Determinants of Health (SDOH)	15
Health Concerns	17
Appendix: Canadian Core Data for Interoperability supporting architecture	18

Land acknowledgement

The offices of the Canadian Institute for Health Information (CIHI) are located on the traditional, unceded territory of the Algonquin Anishinaabe; the traditional territory of the Wendat, the Anishinabek Nation, the Haudenosaunee Confederacy and the Mississaugas of the Credit; the traditional territory of the Kanien'kehá:ka; and the traditional territory of the Songhees, Esquimalt and WSÁNEC, now known as Ottawa, Toronto, Montréal, and Victoria, respectively.

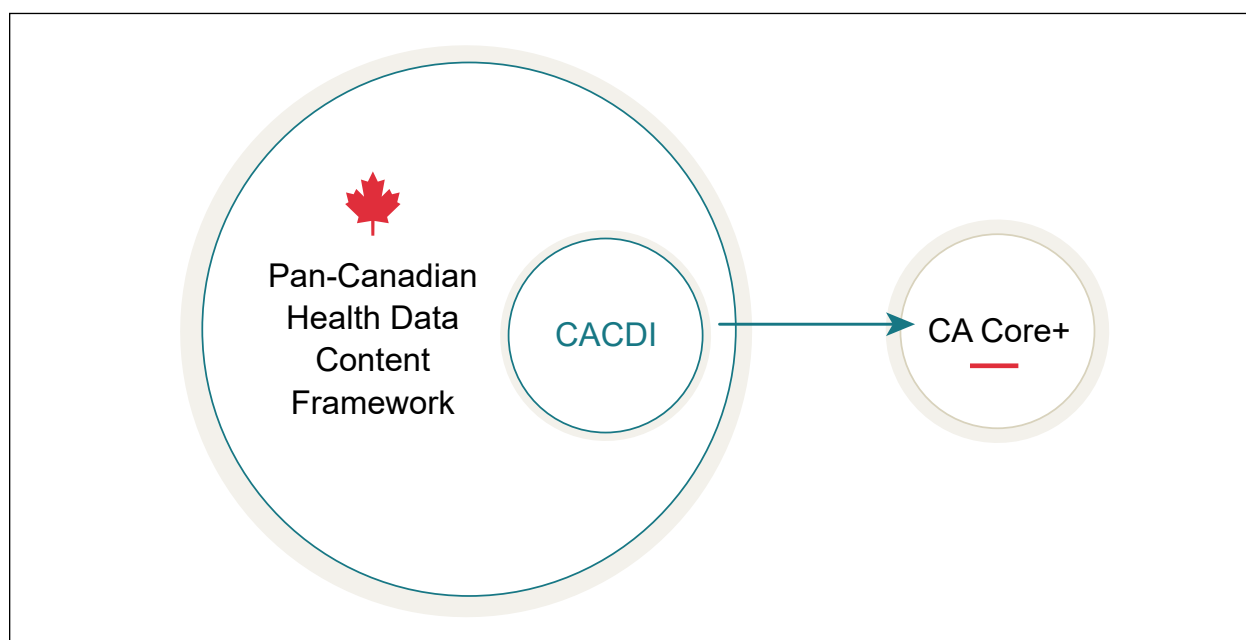
CIHI's work includes a commitment to truth and reconciliation, such as through education; respect for First Nations, Inuit and Métis data sovereignty; and advancing cultural safety and humility in health systems.

The colonization of Canada has had devastating and ongoing impacts on First Nations, Inuit and Métis Peoples' health, cultures, languages, economies and more. We are listening and learning, and here to journey in relationship supporting First Nations-, Inuit- and Métis-determined health data priorities, while upholding principles of data sovereignty and advancing cultural safety and humility in health systems.

About the CACDI

The Canadian Core Data for Interoperability (CACDI) defines a standardized set of essential health data elements and value sets in the context of a common data architecture to support interoperability and data exchange across the Canadian health care ecosystem. The CACDI represents the minimum data required to support standardized information capture and enable meaningful exchange of health information. It aims to standardize the capture, structure and exchange of health data across the health continuum by providing a foundation of standardized data elements applicable to multiple health care settings.

The CACDI is a subset of the [Pan-Canadian Health Data Content Framework](#) and works in tandem with CA Core+, the Fast Healthcare Interoperability Resources (FHIR) profiles created by Canada Health Infoway, to facilitate the meaningful exchange of health care information. Together, the Canadian Institute for Health Information's and Canada Health Infoway's efforts, including the development of national health data content and data exchange standards, will support the uninterrupted and accurate exchange of health information across Canada, aligning with Health Canada's vision for a modern, integrated health care system.



Development of the CACDI

The CACDI is being developed in coordination with the Pan-Canadian Health Data Content Framework and CA Core+ to support a wide range of health data needs, paving the way for ongoing improvements and refinements in the health data ecosystem.

Selection of data elements for the CACDI Version 1 was done in collaboration with a group of co-contributors and in alignment with other national and international standards, including the International Patient Summary (IPS), the Pan-Canadian Patient Summary (PS-CA), the United States Core Data for Interoperability (USCDI) and the Australian Core Data for Interoperability (AUCDI). For this version, data categories and data elements that were considered essential for patient safety were prioritized for inclusion. An initial draft of the CACDI v1 was released in September 2024; this updated version reflects feedback received through the open review.

The ongoing development of the CACDI will follow an iterative process and include input from a wide range of stakeholders, including patients and families, clinicians, technology vendors and other industry partners, researchers, and federal, provincial and territorial governments, as well as First Nations, Inuit and Métis Peoples. We are committed to upholding Indigenous data sovereignty principles; working in partnership with First Nations, Inuit and Métis Peoples ensures that current and future developments of the CACDI are guided by cultural safety and humility. Feedback on draft versions of the CACDI will be sought through an accessible and transparent open review process, including the opportunity to suggest new data categories and data elements for inclusion in future versions.

Future iterations of the CACDI will continue to be developed in coordination with the Pan-Canadian Health Data Content Framework and CA Core+ and will include information related to care teams, procedures, organizations, vital signs and expanded social determinants of health content.

This version of the CACDI includes the following data categories: Person Information, Allergies and Intolerances, Immunization, Medication, Social Determinants of Health and Health Concerns. The data elements that make up each of these categories are listed below.

CACDI data category	CACDI data elements
Person Information	<ul style="list-style-type: none"> • Person Identifier Type • Person Identifier Value • Given Name • Middle Name • Surname • Name Used • Birth Date
Allergies and Intolerances	<ul style="list-style-type: none"> • Allergy or Intolerance • Allergy or Intolerance Reaction
Immunization	<ul style="list-style-type: none"> • Immunization • Immunization Date
Medication	<ul style="list-style-type: none"> • Medication • Medication Dose Value • Medication Dose Unit of Measure • Medication Route of Administration • Medication Timing • Medication End Date and Time • Medication Reason
Social Determinants of Health (SDOH)	<ul style="list-style-type: none"> • Service Language • Indigenous Identity • Racialized Group
Health Concerns	<ul style="list-style-type: none"> • Health Concern(s) • Health Concern Clinical Status

Canadian Core Data for Interoperability data elements

The tables that follow list the data elements and value sets included in the CACDI Version 1. The common data architecture for the CACDI can be found on the web page [Products of the Pan-Canadian Health Data Content Framework](#). Definitions of data elements and value sets in these tables are as follows:

1. Data elements: These are defined as distinct units of information that represent a specific attribute or characteristic in a data set. Fields in the tables about data elements are
 - Data element name; and
 - Data element definition.
2. Value sets: These are defined as sets of permitted values, along with their codes and definitions, assigned to a data element. Fields in the tables about value sets are
 - Terminology foundation: The code system and/or base value set from which curated subsets can be developed for a specific use case;
 - Value set: Recommended pan-Canadian value sets are available on the [Terminology Server](#) by searching the Shrimp browser for the value set name under the ValueSet tab; and
 - Value set examples: Further information on codes and concepts can be accessed through the hyperlinks in the value set fields.

CACDI data elements represent data that may be entered by a person at the point of care (also known as front-end data). This data could be entered by a patient (e.g., via a self-administered questionnaire), a clinic administrator or a health care provider. Data that has been derived from other sources (i.e., data that is machine-generated), also known as back-end data, is listed in the [appendix](#).

Administrative and clinical workflow designs as well as technical systems/solutions will determine whether data is entered at the point of care or is machine-generated.

Person Information

Data element name	Data element definition	Terminology foundation	Value set	Value set examples
Person Identifier Type	The category associated with the identifier value (e.g., jurisdictional health number, medical record number)	Health Level 7® (HL7) Code System IdentifierType	IdentifierType	<ul style="list-style-type: none"> • Jurisdictional health number • Medical record number • Passport number
Person Identifier Value	The alphanumeric value and/or number of the health identifier (e.g., A789010, 123456)	n/a	n/a	n/a
Given Name	<p>The person's first name as indicated on their government-issued identification (e.g., health card, driver's licence, passport)</p> <p>Additional guidance Given Name may be a person's usual name and is also captured under Name Used.</p>	n/a	n/a	n/a
Middle Name	The person's middle name as indicated on their government-issued identification (e.g., health card, driver's licence, passport)	n/a	n/a	n/a
Surname	The person's last name as indicated on their government-issued identification (e.g., health card, driver's licence, passport)	n/a	n/a	n/a

Data element name	Data element definition	Terminology foundation	Value set	Value set examples
Name Used	<p>The name specified by the person that should be used in the context of health care. Refers to the usual name used by the person when addressing or referencing them and is obtained when a patient informs you what name they use. Examples include nicknames, middle names, language-specific alternatives (e.g., Bill, William, Guillaume, Guillermo) and names that affirm gender identity.</p> <p>Additional guidance When implemented, Name Used will be a name with Name Type = usual.</p>	n/a	n/a	n/a
Birth Date	The year, month and day the person was born	n/a	n/a	n/a

Note

n/a: Not applicable.

Allergies and Intolerances

Data element name	Data element definition	Terminology foundation	Value set	Value set examples
Allergy or Intolerance	The pharmaceutical or biologic product or substance (e.g., peanut) to which the person has an allergy or intolerance	SNOMED CT CA including subtypes of 373873005 Pharmaceutical / biologic product (product), 105590001 Substance (substance)	PharmaceuticalBiologicProductAndSubstance Code	<ul style="list-style-type: none"> • Bee venom • Dairy sauce • Dog dander
Allergy or Intolerance Reaction	The person's reaction as a result of exposure to the identified pharmaceutical, biologic product or substance	SNOMED CT CA including subtypes of 404684003 Clinical Finding (finding)	ClinicalFindingCode	<ul style="list-style-type: none"> • Photoallergic dermatitis • Allergic bronchitis • Peanut-induced anaphylaxis

Immunization

Data element name	Data element definition	Terminology foundation	Value set	Value set examples
Immunization	<p>The immunizing agent identified through its trade name or generic name</p> <p>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.</p> <p>The pan-Canadian recommended value sets are integrated in the National Vaccine Catalogue, which can be referenced for mapping to additional fields.</p>	SNOMED CT CA where concepts are represented in VaccineAdministeredTradeNameCode	VaccineAdministeredTradeNameCode	<ul style="list-style-type: none"> • Inf Xanaflu API • LZV ZOSTAVAX II MC • MMR-Var ProQuad Merck
		SNOMED CT CA where concepts are represented in VaccineHistoricalNameCode	VaccineHistoricalNameCode	<ul style="list-style-type: none"> • Pneu-C-7 pneumococcal conjugate 7-valent unspecified • COVID-19 whole inactivated virus unspecified • Inf influenza unspecified
		SNOMED CT CA where concepts are represented in PassiveAdministeredImmunizingAgentCode	PassiveAdministeredImmunizingAgentCode	<ul style="list-style-type: none"> • BATx BAT Cang • CMVlg Cytogam KIB • HBlg HepaGam B KIB
		SNOMED CT CA where concepts are represented in PassiveHistoricalImmunizingAgentCode	PassiveHistoricalImmunizingAgentCode	<ul style="list-style-type: none"> • CMVlg Cytogam CSL • DATx Diphtheria antitoxin IOI • HBlg HepaGam B Cang
Immunization Date	The date the immunization was administered, refused or deferred	n/a	n/a	n/a

Note

n/a: Not applicable.

Medication

Data element name	Data element definition	Terminology foundation	Value set	Value set examples
Medication	<p>The medicinal name or code (e.g., brand, generic, ingredient)</p> <p>Additional guidance</p> <p>The Canadian Clinical Drug Data Set (CCDD) is the recommended interchange terminology between clinical system knowledge bases, such as an electronic medical record (EMR) knowledge base and a pharmacy management system (PMS) knowledge base. Mapping is currently supported for several knowledge bases, including First Data Bank, Oracle-Cerner, Vigilance Santé and Drugbank. ATC codes are mapped within the CCDD. The CCDD code system should be used, but if a code is not available for a drug product that is available in Canada, vendors may also submit a code from the Health Canada Drug Identification Number (DIN) code system or Health Canada Licensed Natural Health Products Database (NPN) code system.</p> <p>The alternate value set Pharmaceutical BiologicProductAndSubstanceCode can be used for the international use case where a medication is not available in Canada and therefore does not appear in the recommended pan-Canadian value sets.</p> <p>A “code” (Canadian Clinical Drug Data Set or DIN or NPN, PharmaceuticalBiologicProductAndSubstanceCode) must be accompanied by “text.”</p> <p>If the code does not exist in the local EMR (i.e., not on-formulary, compounds), the medication name will be entered as free text.</p>	Canadian Clinical Drug Data Set (CCDD)	Canadian Clinical Drug Data Set	<ul style="list-style-type: none"> • Acetaminophen • Acetaminophen 160 mg chewable tablet • Children’s Tylenol Chewables (acetaminophen 160 mg chewable tablet) McNeil Consumer Healthcare Division of Johnson & Johnson Inc.
		Health Canada Drug Identification Number (DIN)	Health Canada Drug Identification Number — DIN	<ul style="list-style-type: none"> • ACETAMINOPHEN • TEVA-SALBUTAMOL HFA • PERINDOPRIL ERBUMINE
		Health Canada Licensed Natural Health Products Database	HealthCanadaNaturalProductNumber	<ul style="list-style-type: none"> • Melatonin 3 mg • Cod liver oil gummy • Cytetek Shan Zhu Yu powder
		Alternate SNOMED CT CA including subtypes of 373873005 Pharmaceutical / biologic product (product), 105590001 Substance (substance)	Alternate PharmaceuticalBiologicProductAndSubstance Code	<ul style="list-style-type: none"> • (+)-delta-cadinene synthase • 1,1,2-trichloroethane • 1,2-dichloroethane

Data element name	Data element definition	Terminology foundation	Value set	Value set examples
Medication Dose Value	The prescribed quantity of medication to be taken for each administration (e.g., 50)	n/a	n/a	n/a
Medication Dose Unit of Measure	The unit of measure for the medication dose per administration (e.g., mg, IU, capsule[s])	<p>SNOMED CT CA including subtypes of 408103002 Unit of drug administration (qualifier value) and the following concepts: 18492004 Canister, device (physical object), 49062001 Device (physical object), 350810002 Lancet (physical object), 463408005 Medication pen injector needle (physical object), 334947002 Nebulizer (physical object), 733006000 Pen (unit of presentation), 72070000 Ring, device (physical object), 61968008 Syringe, device (physical object)</p> <p>The Unified Code for Units of Measure (UCUM)</p>	PrescriptionDose QuantityUnit	<ul style="list-style-type: none"> • Capsule(s) • Drop(s) • mg

Data element name	Data element definition	Terminology foundation	Value set	Value set examples
Medication Route of Administration	The path by which the pharmaceutical product is taken in to or contacts the body (e.g., oral, intramuscular)	SNOMED CT CA including subtypes of 284009009 Route of administration value (qualifier value)	RouteOfAdministration	<ul style="list-style-type: none"> • Buccal route • Epidural route • Ileostomy route
Medication Timing	The frequency and timing of the medication to be taken (e.g., BID, TID, QD)	n/a	n/a	n/a
Medication End Date and Time	The date and time the medication was stopped, if available	n/a	n/a	n/a
Medication Reason	The sign, symptom or health condition that the medication is or was prescribed to manage, improve, treat or prevent.	SNOMED CT CA including subtypes of 272379006 Event (event), 243796009 Situation with explicit context (situation), 404684003 Clinical Finding (finding), 71388002 Procedure (procedure)	MedicationReasonCode	<ul style="list-style-type: none"> • Bacterial sepsis • Pneumonia and influenza • Pain of joint of knee

Note

n/a: Not applicable.

Social Determinants of Health (SDOH)

Data element name	Data element definition	Terminology foundation	Value set	Value set examples
Service Language	<p>The person's preferred language of service</p> <p>Additional guidance The ISO 639-3 language code list is the terminology foundation for all language codes. The CIHI Language Codes is a subset of the ISO 639-3 standard. It is based on Statistics Canada language groups and includes unique language codes that are relevant to Canada, such as Indigenous languages spoken in Canada.</p>	ISO 639-3 — Language Codes	CIHI Language Codes	<ul style="list-style-type: none"> • English • French • Inuktitut
Indigenous Identity	<p>The person's self-identification as First Nations, Inuk/Inuit and/or Métis</p> <p>Additional guidance Implementation of the Indigenous identity data standard should include data governance agreements, engagement with Indigenous groups and processes related to culturally safe and appropriate data collection.</p> <p>The Indigenous identity data standard is a minimum data collection standard. More granular information on specific populations and/or Nations within each category may be collected, as long as consistency is maintained by having these subcategories roll up to the minimum standard for reporting. Individuals can select all Indigenous identity group categories that apply.</p>	SNOMED CT CA including subtypes of 29311000087102 Indigenous identity group (social concept)	IndigenousIdentityCode	<ul style="list-style-type: none"> • First Nations • Inuk/Inuit • Métis

Data element name	Data element definition	Terminology foundation	Value set	Value set examples
Racialized Group	<p>A social construct used to judge and categorize people based on perceived differences in physical appearance in ways that create and maintain power differentials within social hierarchies. There is no scientifically supported biological basis for discrete racial groups. Due to the inherent complexity of race identity, a person's association with a racialized group is through self-identification.</p> <p>Additional guidance</p> <p>The collection of race-based data should involve community engagement to mitigate the risk of harm to individuals and communities, and to ensure the safe and appropriate use of the data.</p> <p>Individuals can select all racialized group categories that apply. The race-based data standard is a minimum data collection standard. More granular information on specific populations within each category may be collected, as long as consistency is maintained by having these subcategories roll up to the minimum standard for reporting.</p>	<p>SNOMED CT CA including 413464008 African race (racial group), subtypes of 413582008 Asian race (racial group), 413773004 Caucasian (racial group), 26631000087109 Indigenous (racial group), 26641000087103 Latino (racial group), 26651000087100 Middle Eastern (racial group)</p>	<p>RacializedGroupCode</p>	<ul style="list-style-type: none"> • East Asian • Indigenous • Latin American

Health Concerns

Data element name	Data element definition	Terminology foundation	Value set	Value set examples
Health Concern(s)	<p>Code(s) representing active and historical health-related conditions or issues requiring attention</p> <p>Additional guidance</p> <p>The Pan-Canadian Health Concern Value Set is a subset of concepts from the Canadian edition of SNOMED CT (SNOMED CT CA) and supports a structured, standardized pan-Canadian approach to the collection of primary health care data. The concepts in this value set have been mapped to ICD-10-CA, ICD-9 and the Canadian Emergency Department Diagnosis Shortlist (CED-DxS).</p> <p>ICD-10-CA is the recommended supporting classification. ICD-9 currently supports historical implementations for physician billing and should not be used for new implementations as it is no longer maintained.</p>	SNOMED CT CA including subtypes of 272379006 Event (event), 243796009 Situation with explicit context (situation), 404684003 Clinical Finding (finding)	HealthConditionCode For primary health care implementation: Pan-Canadian Health Concern Value Set (PHCVS)	<ul style="list-style-type: none"> • Bacterial sepsis • Pneumonia and influenza • Pain of joint of knee
		Alternate International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Canada (ICD-10-CA)	Alternate ICD-10-CA	<ul style="list-style-type: none"> • Other specified sepsis • Influenza with pneumonia, virus not identified • Pain in joint, lower leg
		Alternate International Statistical Classification of Diseases, Injuries, and Causes of Death, Ninth Revision (ICD-9)	Alternate (for exchange of data from existing billing systems only) ICD-9	<ul style="list-style-type: none"> • Septicaemia, other specified septicaemias • Influenza, with pneumonia • Other and unspecified disorder of joint, pain in joint
Health Concern Clinical Status	The current status of the health concern or condition (e.g., active, resolved)	Health Level 7® (HL7) Code System ConditionClinical StatusCodes	ConditionClinical StatusCodes	<ul style="list-style-type: none"> • Active • Recurrence • Relapse

Appendix: Canadian Core Data for Interoperability supporting architecture

This table lists additional data elements needed to support technical implementation of CACDI Version 1.

Person Information

Data element name	Data element definition	Terminology foundation	Value set	Value set examples
Person Identifier Assigner	The legal entity/organization (e.g., Veterans Affairs Canada, Ministry of Health Saskatchewan) responsible for assigning the person identifier	SNOMED CT CA including subtypes of 443470051000087109 Ministry of health (qualifier value), 5591000087105 Canadian federal-based (qualifier value)	ClientIdentifierAssigningAuthorityCode	<ul style="list-style-type: none"> • Veterans Affairs Canada • Ministry of Health Saskatchewan • Ministry of Health and Social Services Quebec
Person Identifier System	Establishes the namespace for the value (i.e., an absolute URL that describes a set of values that are unique)	n/a	n/a	n/a
Person Identifier Period	The start and end date for the identifier	n/a	n/a	n/a
Name Type	The use of the person's name (e.g., usual, official, old)	Health Level 7® (HL7) Code System NameUse	NameUse	<ul style="list-style-type: none"> • Usual • Official • Nickname • Temp
Effective Date and Time	The first date and time at which the information specified is documented as valid	n/a	n/a	n/a
Expiry Date and Time	The last date and time by which the information specified is documented as valid	n/a	n/a	n/a

Note

n/a: Not applicable.

Immunization

Data element name	Data element definition	Terminology foundation	Value set	Value set examples
Event Start Date and Time	The date and time that a health service event starts	n/a	n/a	n/a
Health Service Event Type	The categorization of the health service event	n/a	Supporting architecture	<ul style="list-style-type: none"> • Immunization • Medication event

Note

n/a: Not applicable.

Medication

Data element name	Data element definition	Terminology foundation	Value set	Value set examples
Code System URI	The Uniform Resource Identifier (URI) of the system that creates and maintains the value set codes	n/a	n/a	n/a
Medication Event Type	The categorization of the medication event as medication statement, medication request or medication administration	n/a	Supporting architecture	<ul style="list-style-type: none"> • Medication statement • Medication request

Note

n/a: Not applicable.



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