

A Primary Health Care Data Content Standard for Connected Care

Introducing the pan-Canadian Health Data Content Framework

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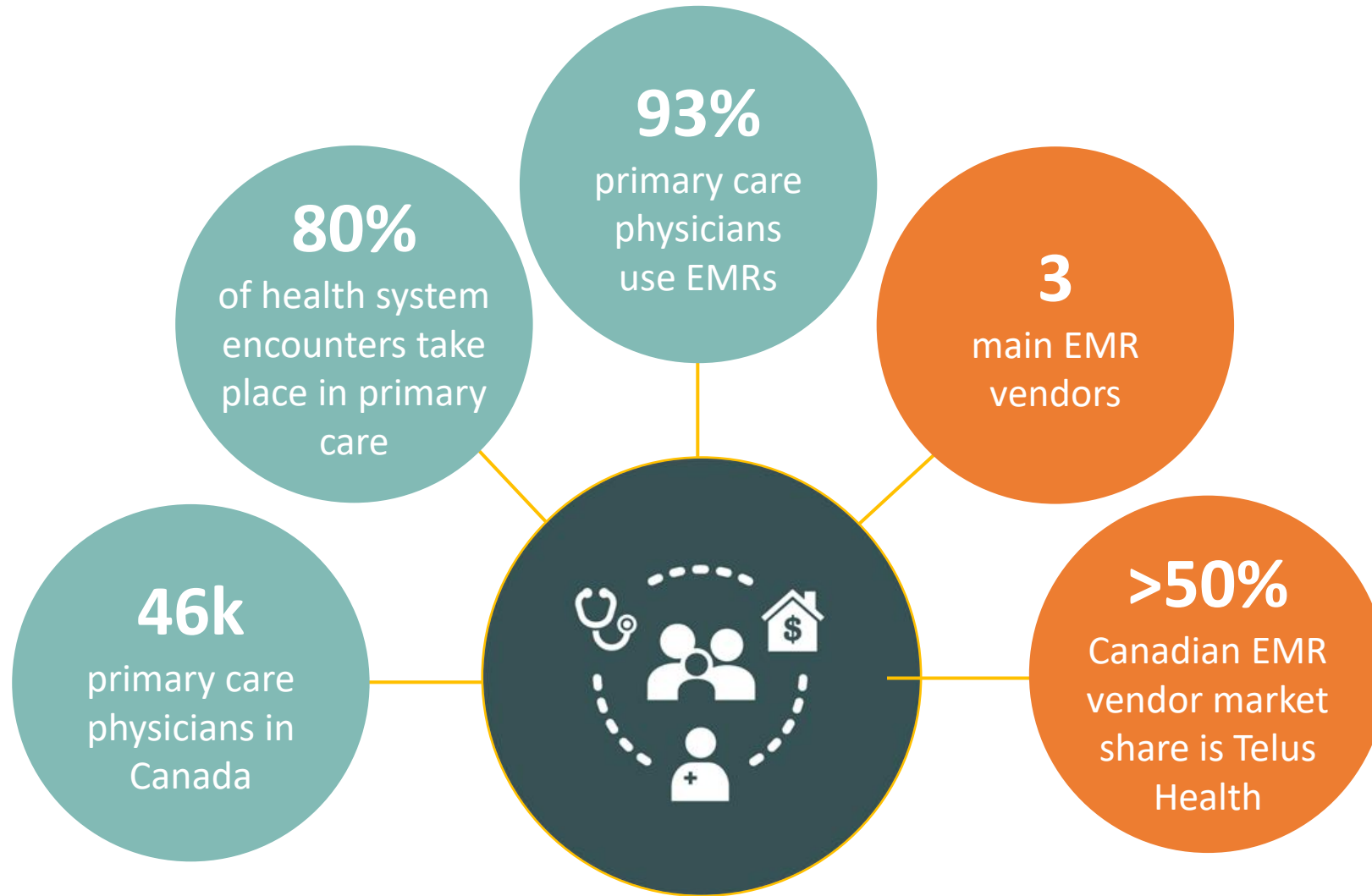
Overview



1. About CIHI and Primary Health Care Information
2. Connected care
3. Primary Health Care Data Content Standard
4. pan-Canadian Health Data Content Framework
5. Discussion
6. Questions

About primary health care data in Canada

Facts about primary health care EMR data in Canada



<1% of the Canadian population is represented in CIHI's EMR data

The Canadian landscape for primary health care EMRs is challenging

Primary health care is organized and delivered in various models across the country



EMR data in vendor systems may be structured or unstructured due to lack of standardization



Emerging data aggregators collect EMR data from vendors for health system use



Differences in content standards across aggregators and vendors make data integration for analysis difficult



Primary Health Care Data Content Standard

CIHI PHC data content standard, now and the future

Current

- Lists minimum data to be collected for CIHI's reporting needs

Gaps

- Overlooks a person's needs, desired health and well-being outcomes
- Does not address social determinants of health
- Does not align with the international patient summary or patient summary-CA

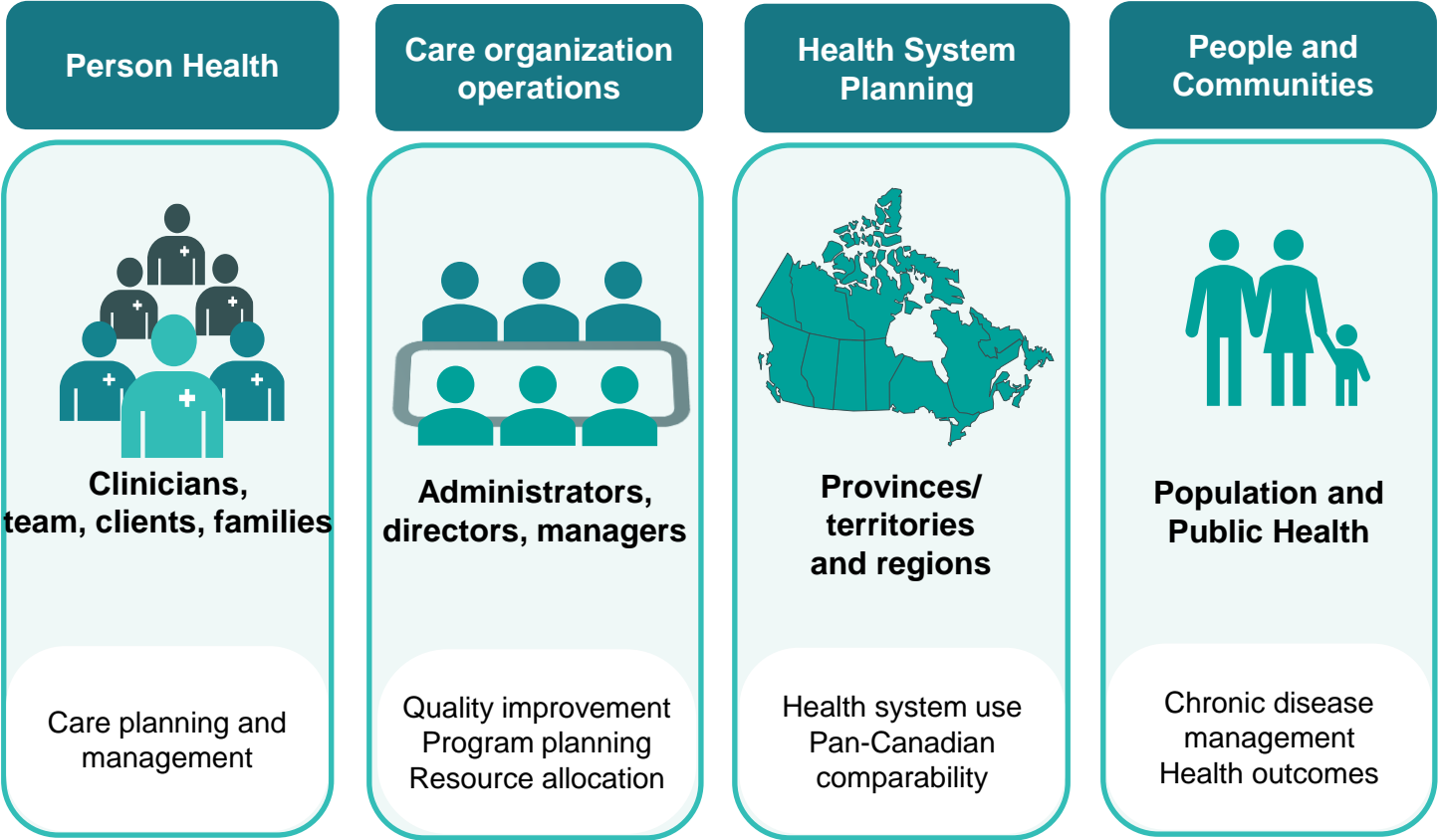
Future

- New Common Data Standard will reflect a whole system approach that includes individual, operational and system-level data and aligns with existing standards

Overview: Pan-Canadian Primary Health Care EMR Minimum Data Set, Version 1.1

Patient/Client	Clinician/Provider	Service delivery location	Visit/Encounter	Observation	Intervention	Lab tests	Diagnostic imaging	Referral	Prescribed medication	Immunization
Core										
<ul style="list-style-type: none"> • Patient Identifier and Type • Identifier Assigning Authority • Date of Birth • Gender • Status • Postal Code • Race • Indigenous Identity 	<ul style="list-style-type: none"> • Clinician Identifier and Type • Identifier Assigning Authority • Provider Type 	<ul style="list-style-type: none"> • Service Delivery Identifier • Service Delivery Postal Code 	<ul style="list-style-type: none"> • Reason for Visit • Visit Modality 	<ul style="list-style-type: none"> • Health Concern • Social Behaviour • Blood Pressure • Height • Weight • Clinician Assessment 	<ul style="list-style-type: none"> • Intervention (Treatment) 	<ul style="list-style-type: none"> • Lab Test Ordered • Lab Test Name • Lab Test Result 	<ul style="list-style-type: none"> • Diagnostic Imaging Test Ordered 	<ul style="list-style-type: none"> • Referral 	<ul style="list-style-type: none"> • Prescribed Medication 	<ul style="list-style-type: none"> • Vaccine Administered
Supplementary										
<ul style="list-style-type: none"> • Highest Education • Housing Status • Primary Language • Date of Death • Rostered Date • Ethnicity 	<ul style="list-style-type: none"> • Clinician Expertise 	<ul style="list-style-type: none"> • Service Delivery Name • Service Delivery Type of Service 	<ul style="list-style-type: none"> • Payment Source and Type • Billing Code 	<ul style="list-style-type: none"> • Family Member Health • Allergies/Intolerances • Waist Circumference 	<ul style="list-style-type: none"> • Intervention Refusal Reason 	<ul style="list-style-type: none"> • Lab Test Result Low/High Range 	n/a	n/a	<ul style="list-style-type: none"> • Medication Strength, Dose, Form, Frequency, Route, Refills • Reason Not Prescribed • Medication Compliance • Dispensed 	<ul style="list-style-type: none"> • Vaccine Administered Lot Number • Reason Vaccine Not Given

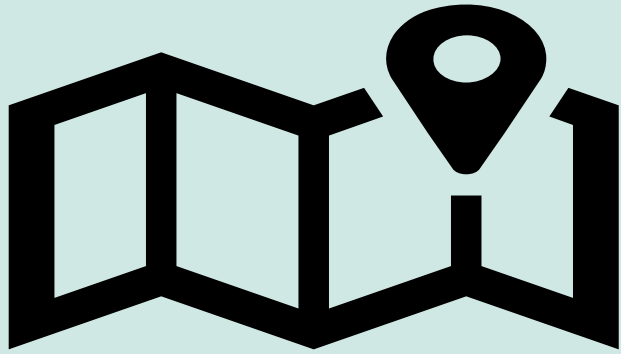
CIHI is building a **person-centric data content standard** for **primary health care** to address information needs across the health system



Implementation of health data standards produces information that can be used:

- ✓ By clients and families, to engage in care planning
- ✓ By clinicians and care teams, to inform and manage care provision
- ✓ By organizations, to inform quality initiatives and management of resources to drive continuous improvement efforts
- ✓ By the health system, to inform resource allocation, benchmarking and health outcomes by planners and policy-makers

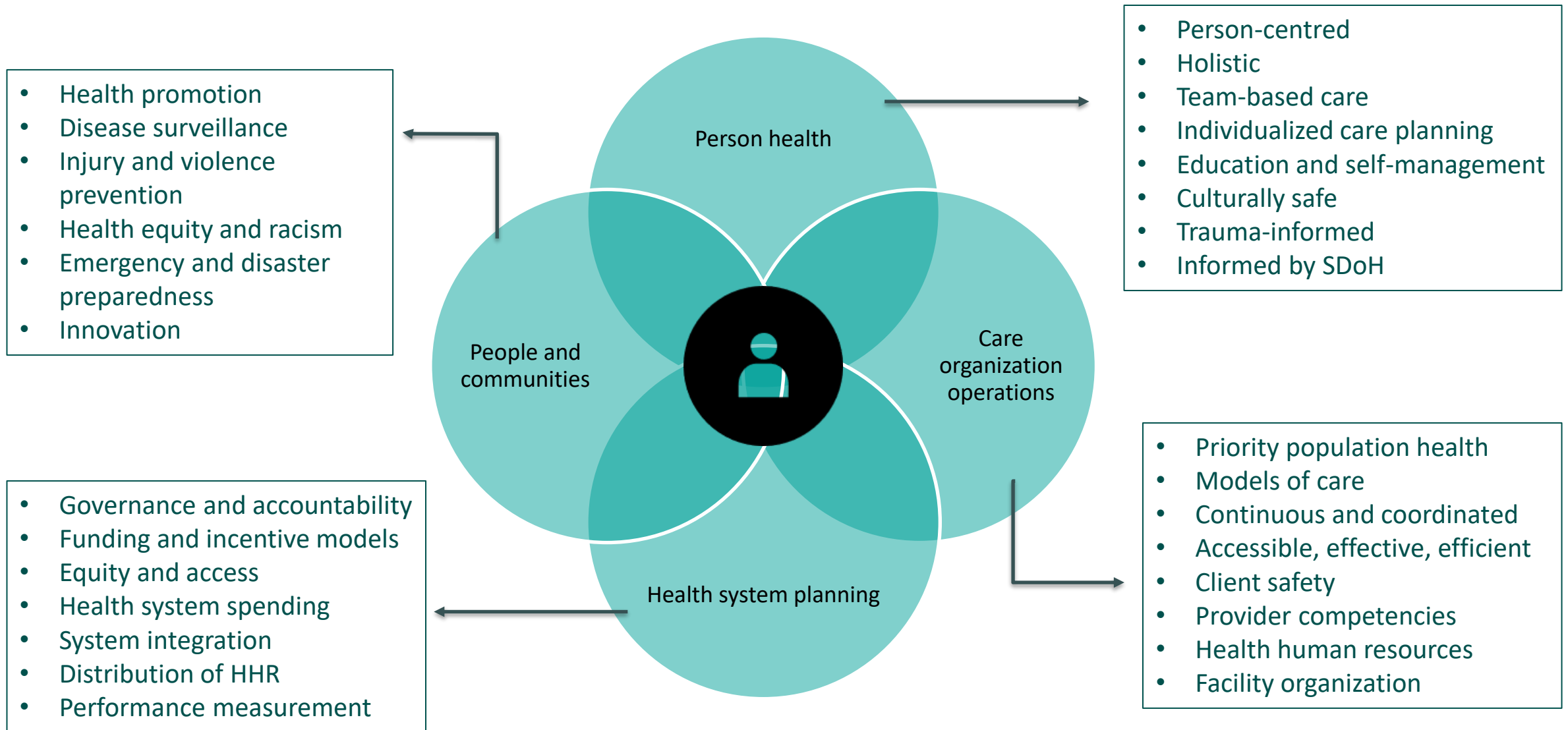
New Approach



The PHC data content standard:

- Is designed for implementation beyond health system use, including for clinical care.
- Includes data elements that CIHI does not collect.

Features of high-functioning primary health care systems



Features of high-functioning primary health care systems

Mega

People and communities

- How do we know what people and communities need from the health system to improve health outcomes?

Macro

Health system planning

- How do system partners work together to achieve population health?

Meso

Care organization operations

- How does the model of care support people and communities?

Micro

Person health

- How do people experience primary health care, and how does it support their health and wellness goals?

Core guiding principles

Person-centric with a multi-user design

Inclusive

Iteratively developed

Collaborative through broad stakeholder participation

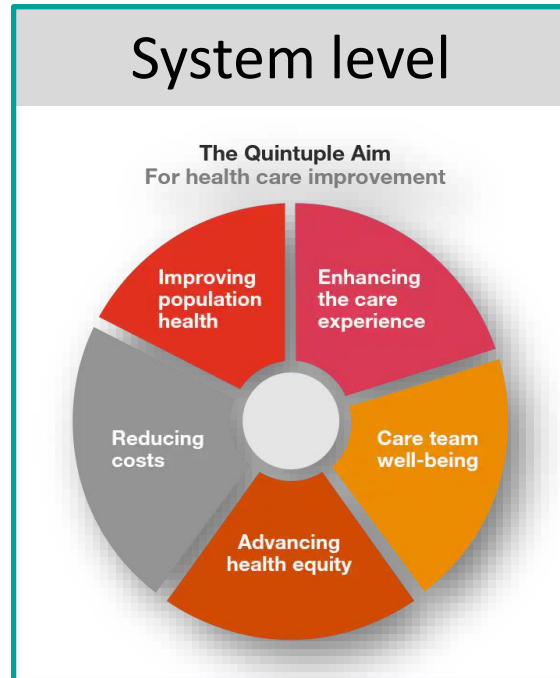
Managed with strong data governance

Integrated with cohesive data stewardship for robust data quality

Driven for multiple uses and the re-use of data

Pan-Canadian and interoperable across systems

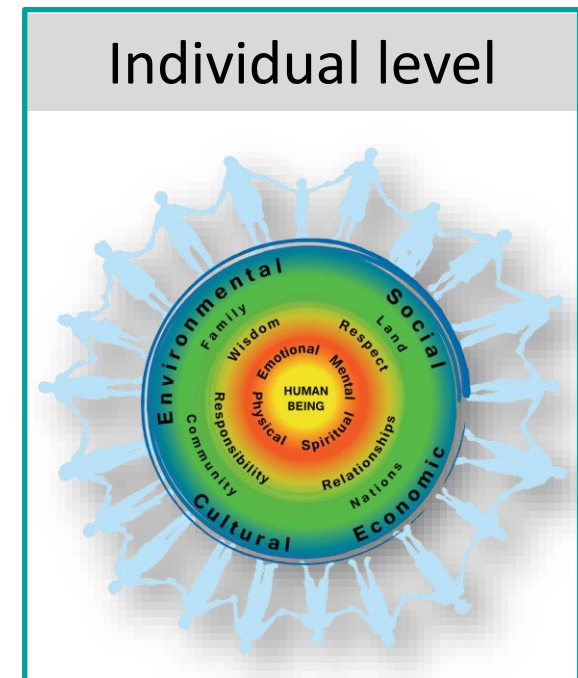
Guiding frameworks



Quintuple Aim
[The Quintuple Aim for Health Care Improvement.pdf](#)



Model for Health and Wellbeing
[Evaluation Framework 2019 small.pdf](#)
([allianceon.org](#))



First Nations Perspective on Health and Wellness
[First Nations Perspective on Health and Wellness \(fnha.ca\)](#)

Primary Health Care Data Content Standard: Approach

- “Plug and play” or “modular” approach based on the objectives of people and communities, providers and health systems
- A menu of data categories with associated data elements and values that reflect person health, care organization operations, health system planning and people and communities
- Reflect a whole system approach with embedded social determinants of health, health equity, cultural safety and wholistic health
- Implemented in a phased approach

Allergies and Intolerances

Harmful or undesired physiological responses associated with exposure to a substance.

Substance (Medication)
Substance (Drug Class)
Reaction

Assessment and Plan of Treatment

Health professional's conclusions and working assumptions that will guide treatment of the patient.

Assessment and Plan of Treatment
SDOH Assessment

Care Team Member(s)

Information on a person who participates or is expected to participate in the care of a patient.

Health Insurance Information

Data related to an individual's insurance coverage for health care.

Coverage Status
Coverage Type
Relationship to Subscriber
Member Identifier
Subscriber Identifier
Group Identifier
Payer Identifier

Health Status/Assessments

Assessments of a health-related matter of interest, importance, or worry to a patient, patient's family, or patient's healthcare provider that could identify a need, problem, or condition.

Health Concerns
Functional Status
Disability Status

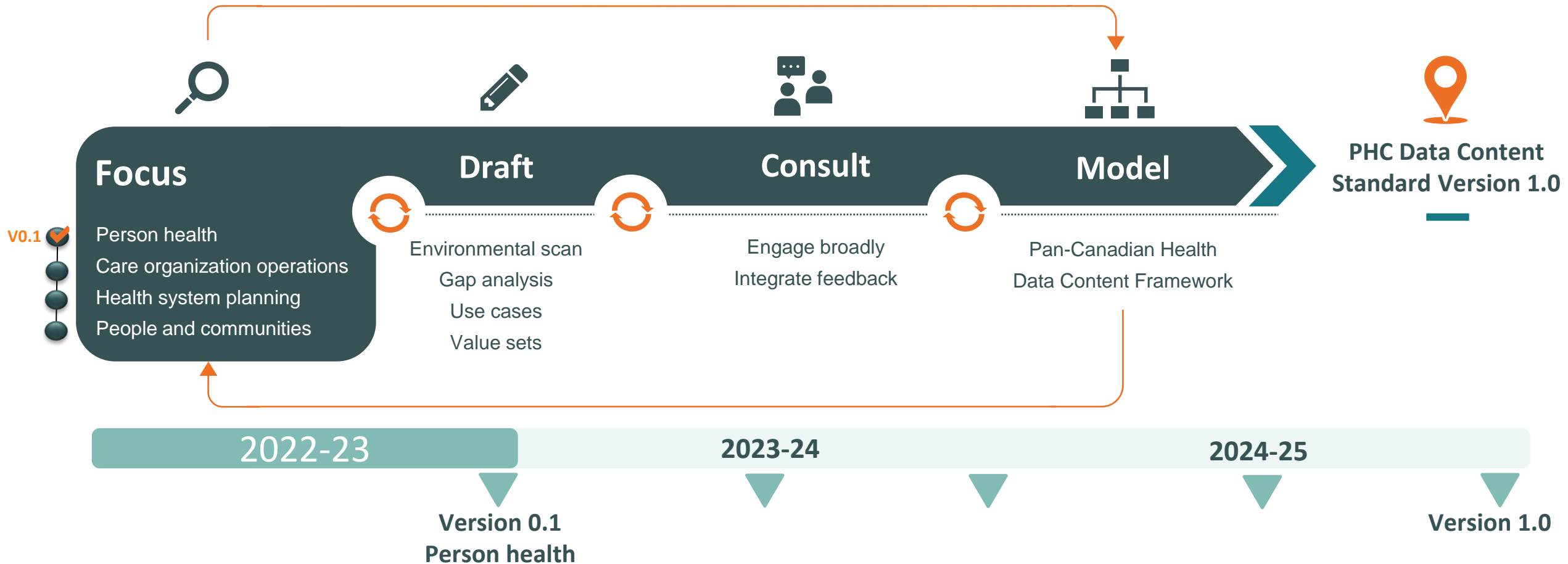
Patient Demographics/Information

Data used to categorize individuals for identification, records matching, and other purposes.

First Name
Last Name
Middle Name (including middle initial)
Name Suffix
Previous Name
Date of Birth
Date of Death
Race
Ethnicity
Tribal Affiliation
Sex
Sexual Orientation
Gender Identity
Preferred Language
Current Address
Previous Address
Phone Number
Phone Number Type

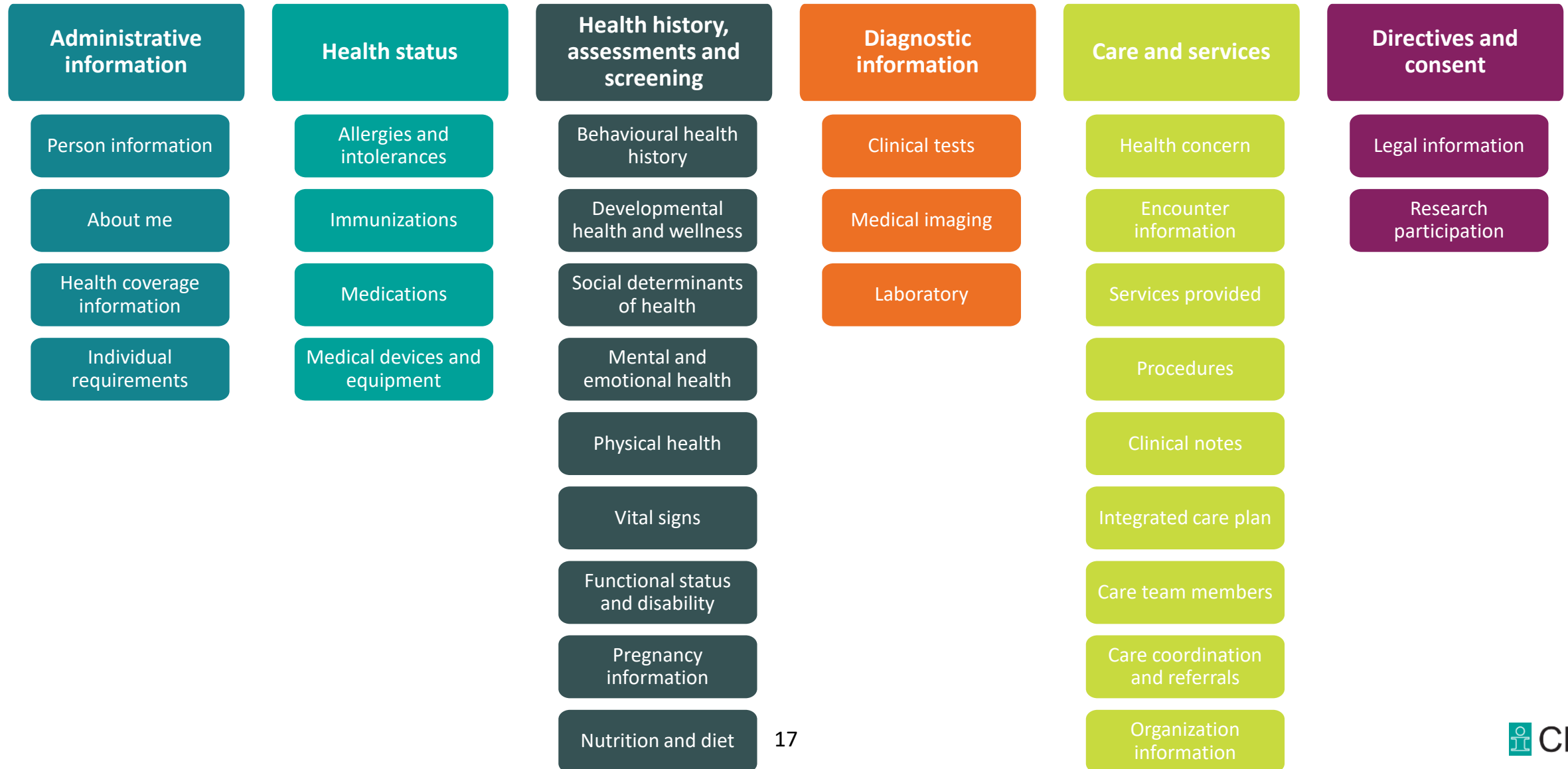
United States Core Data for Interoperability (USCDI) [United States Core Data for Interoperability \(USCDI\)](#) | [Interoperability Standards Advisory \(ISA\)](#) ([healthit.gov](#))

CIHI is using an agile, iterative, co-development approach with extensive consultation



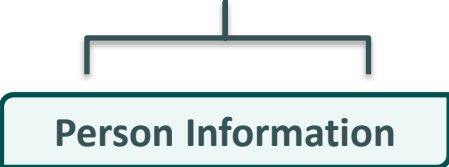
Data Content Standard

Person health data categories for PHC interoperability



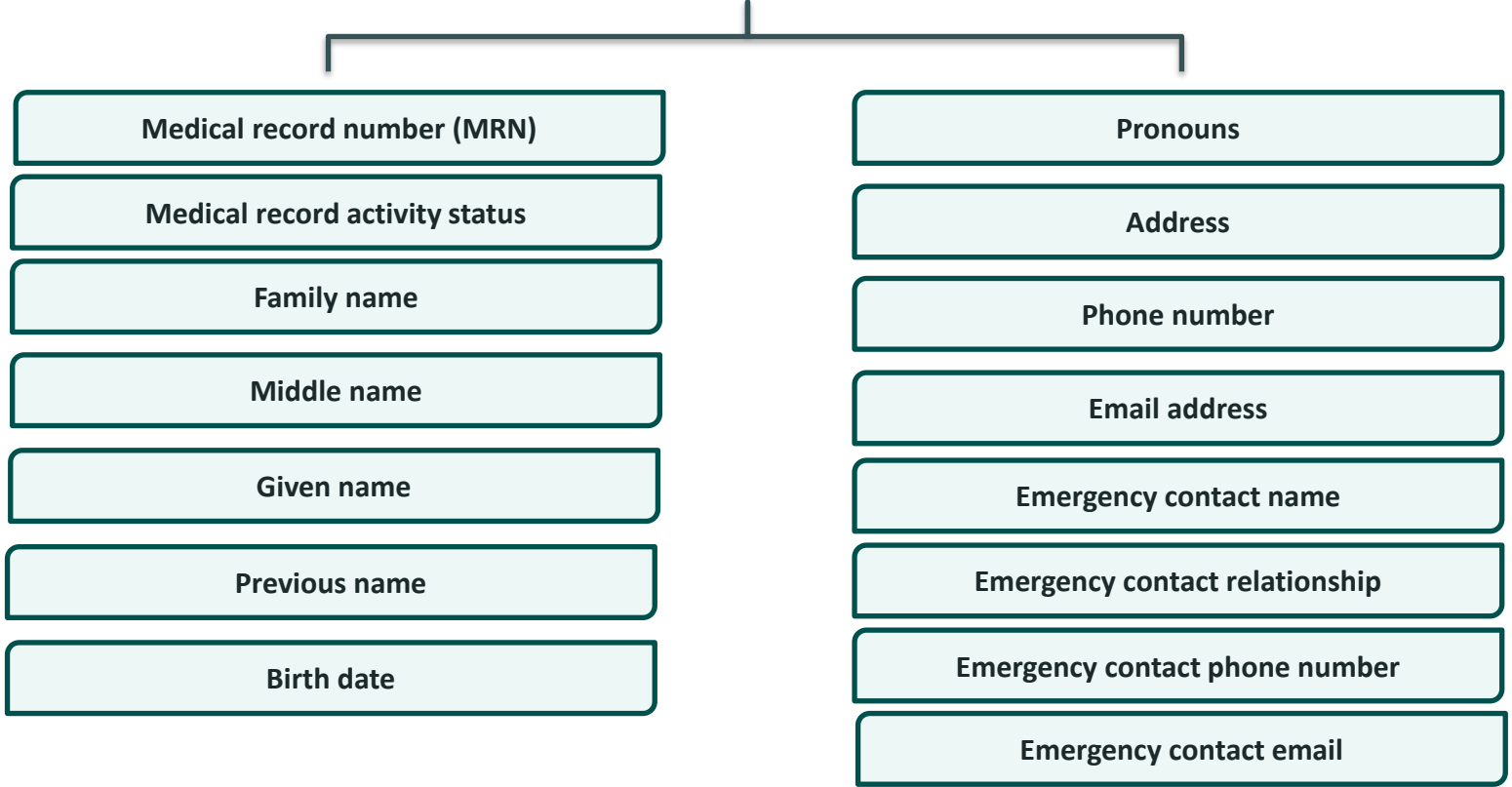
Categories were developed through environmental scan and mapping exercise

Data category



Definition:
Administrative information about an individual receiving care or other health-related services (source: PS-CA).

Data elements



The pan-Canadian Health Data Content Framework

Meet Jolene



Jolene is two months pregnant with her second child.

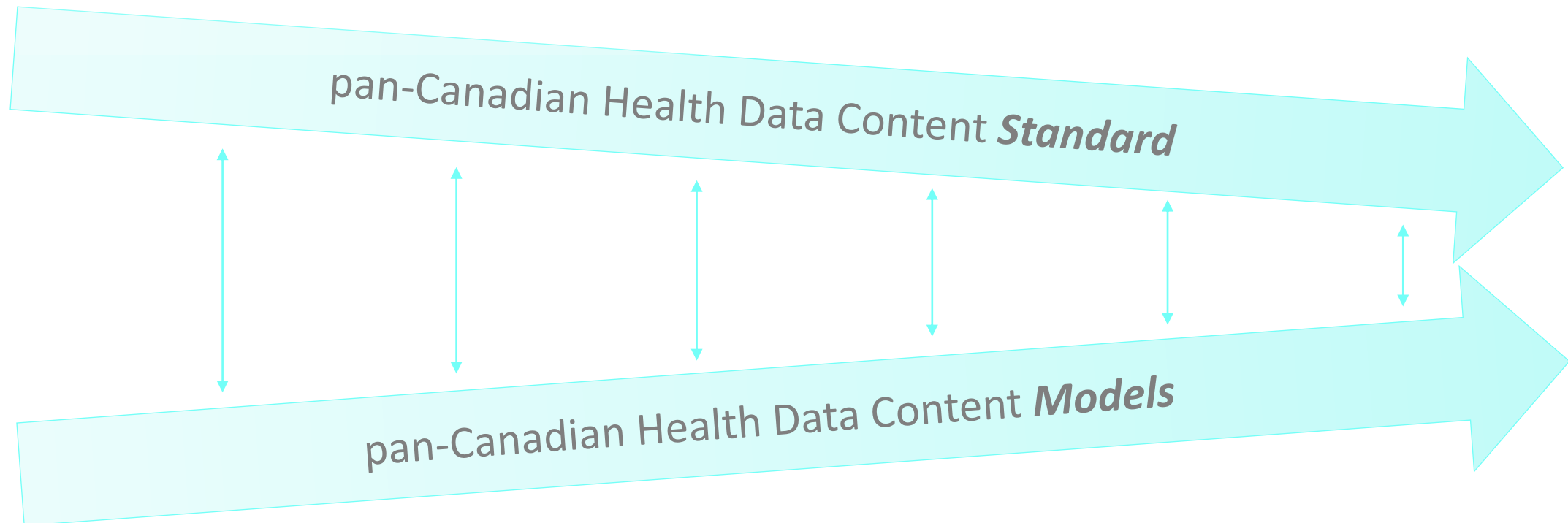
Jolene, her husband and 2-year-old child recently moved to a new community. Her life circumstances and her current physical health present risks to the well-being of both Jolene and to her developing fetus.

Over the coming year, Jolene will need the best care practices and for her health information to flow seamlessly between the providers she will need.

Let's explore how the *pan-Canadian Health Data Content Framework* has organized the data needed to better support the health of Canadians, like Jolene.

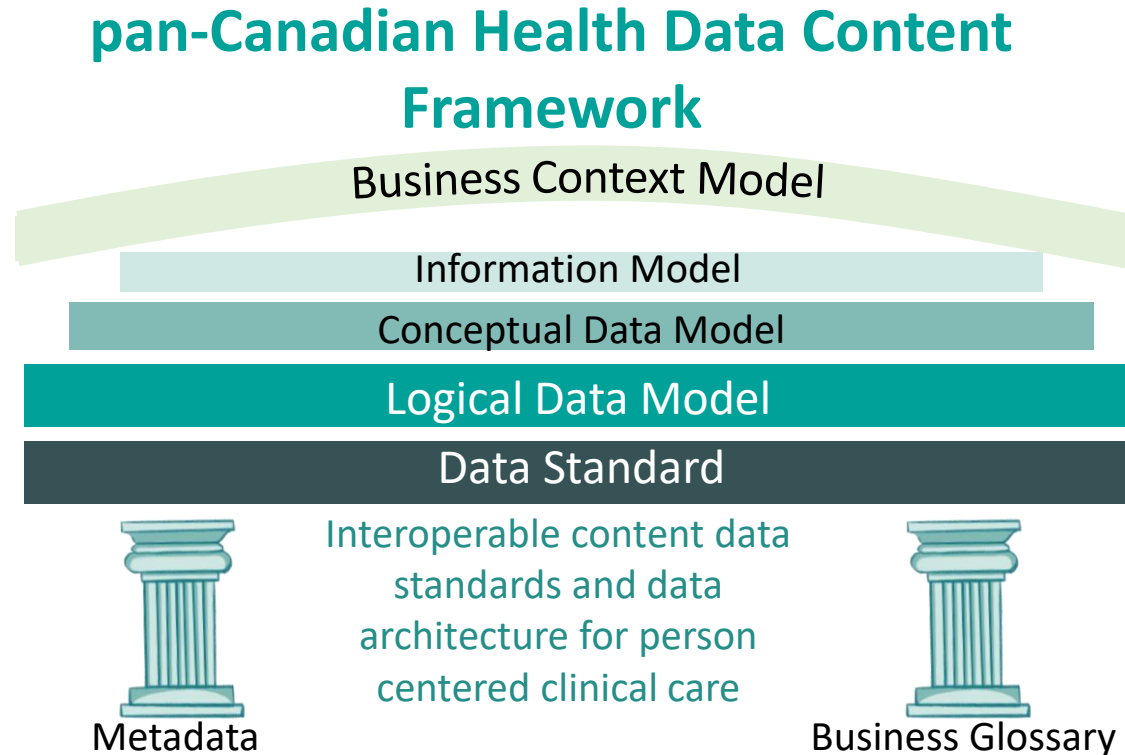
We have two current, inter-related streams of activity

Iterative process to identify the health categories, data elements and value sets necessary to support person-centric care



Iterative process to establish the data architecture necessary to properly structure the data standards to enable data flow across the health care system

Together, these 7 deliverables form a single, cohesive product



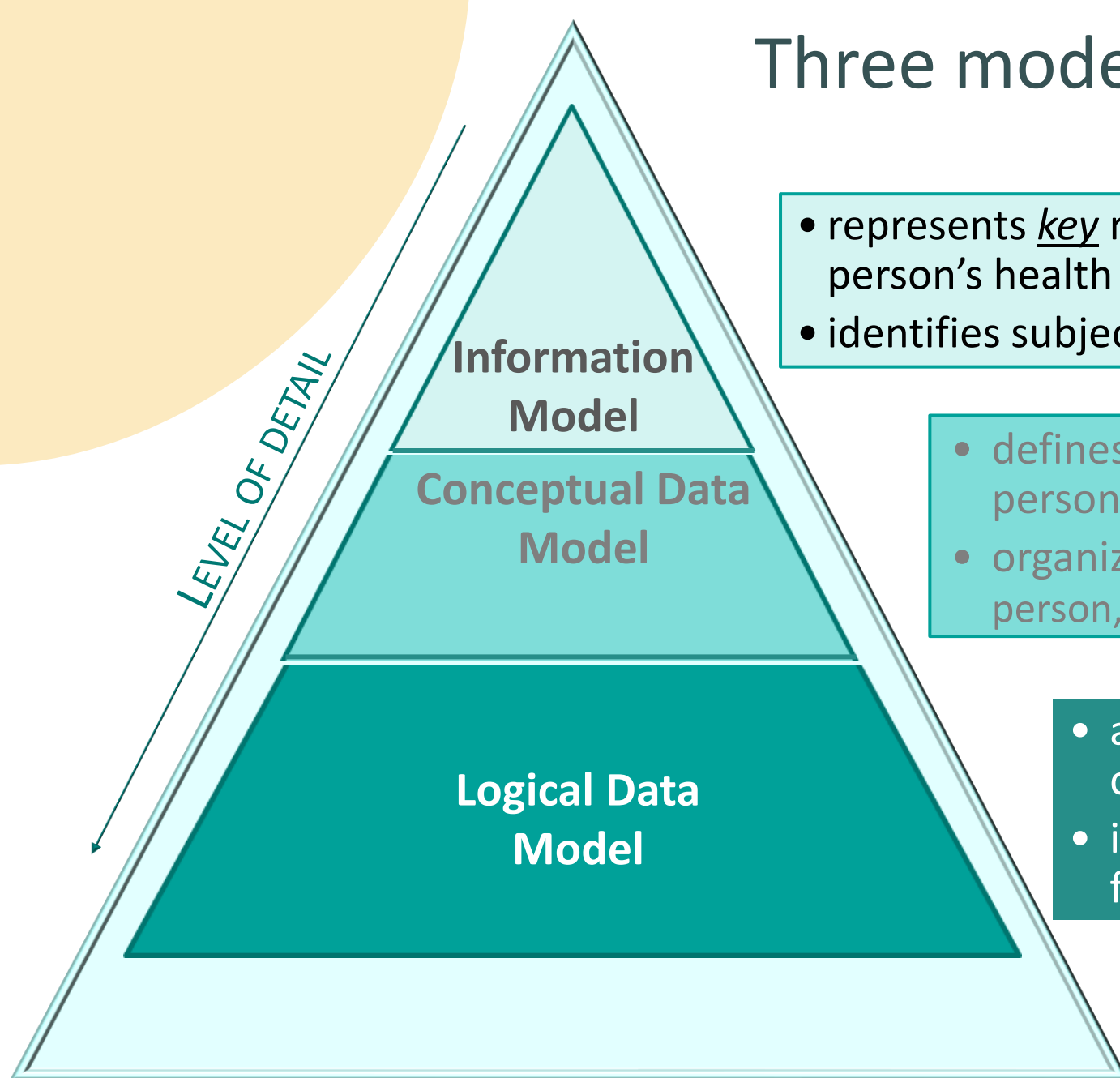
- provide person-centric data structure
- define the scope of the framework
- identify real-world concepts important to person health and how they relate
- underly and guide use of the content data standard
- lay the foundation to enable interoperability across Canadian healthcare systems

Three models will be delivered

- represents key real-world concepts important to a person's health and how they relate
- identifies subject areas to organize concepts

- defines all real-world concepts important to a person's health and how they relate
- organizes concepts in subject areas and at person, health operations, or health system levels

- adds concepts to classify and to fully represent complex relationships
- identifies and defines data attributes / elements for each concept



Each model adds more detail

A key
concept

Person

+ Person definition
+ 14 relationships *for the person*

Information
Model

Conceptual Data
Model

Person

+ 20 additional relationships for
the person

Logical Data
Model

Person

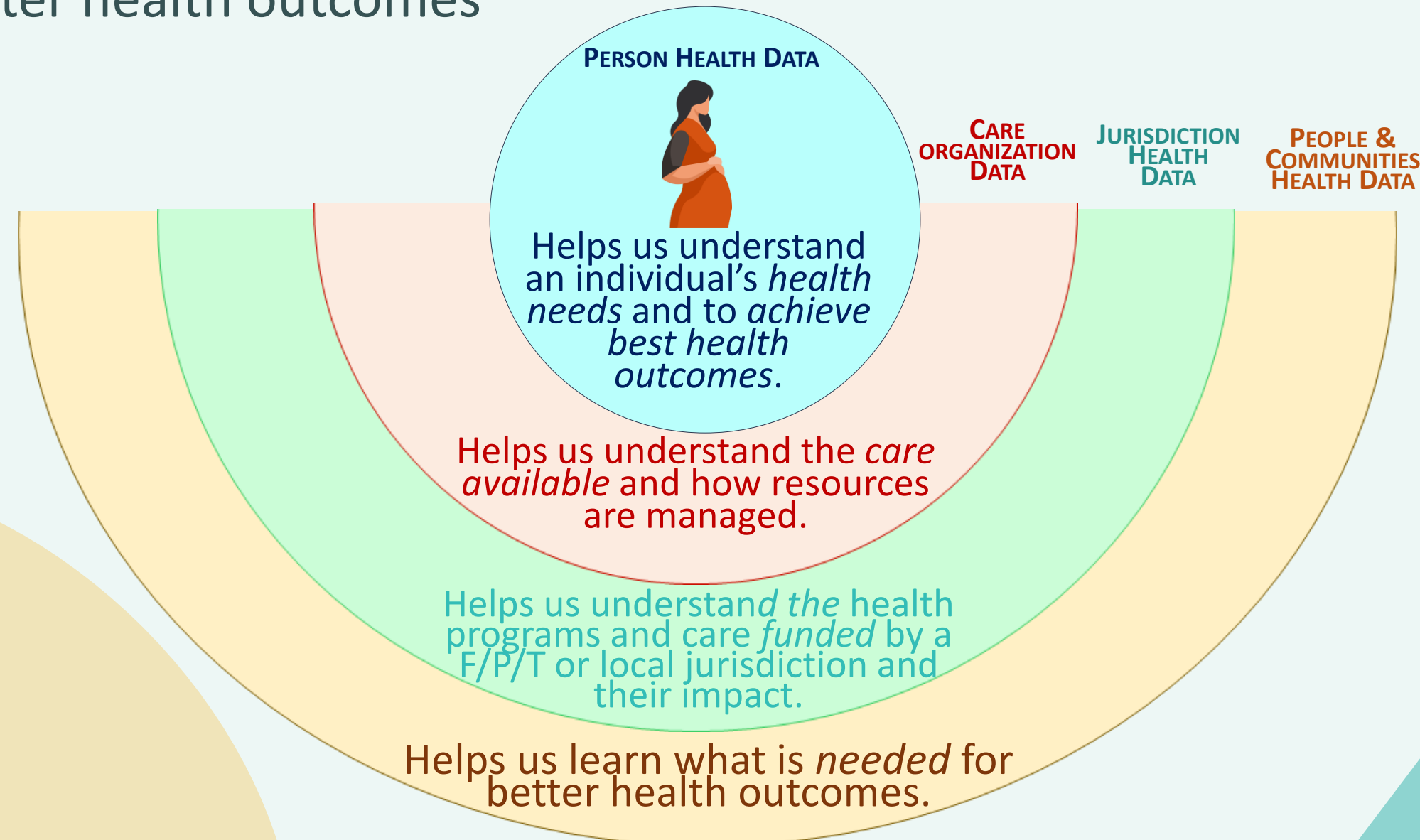
+ 5 data standard elements
(e.g., name, date of birth)
with robust definitions

The Data Models

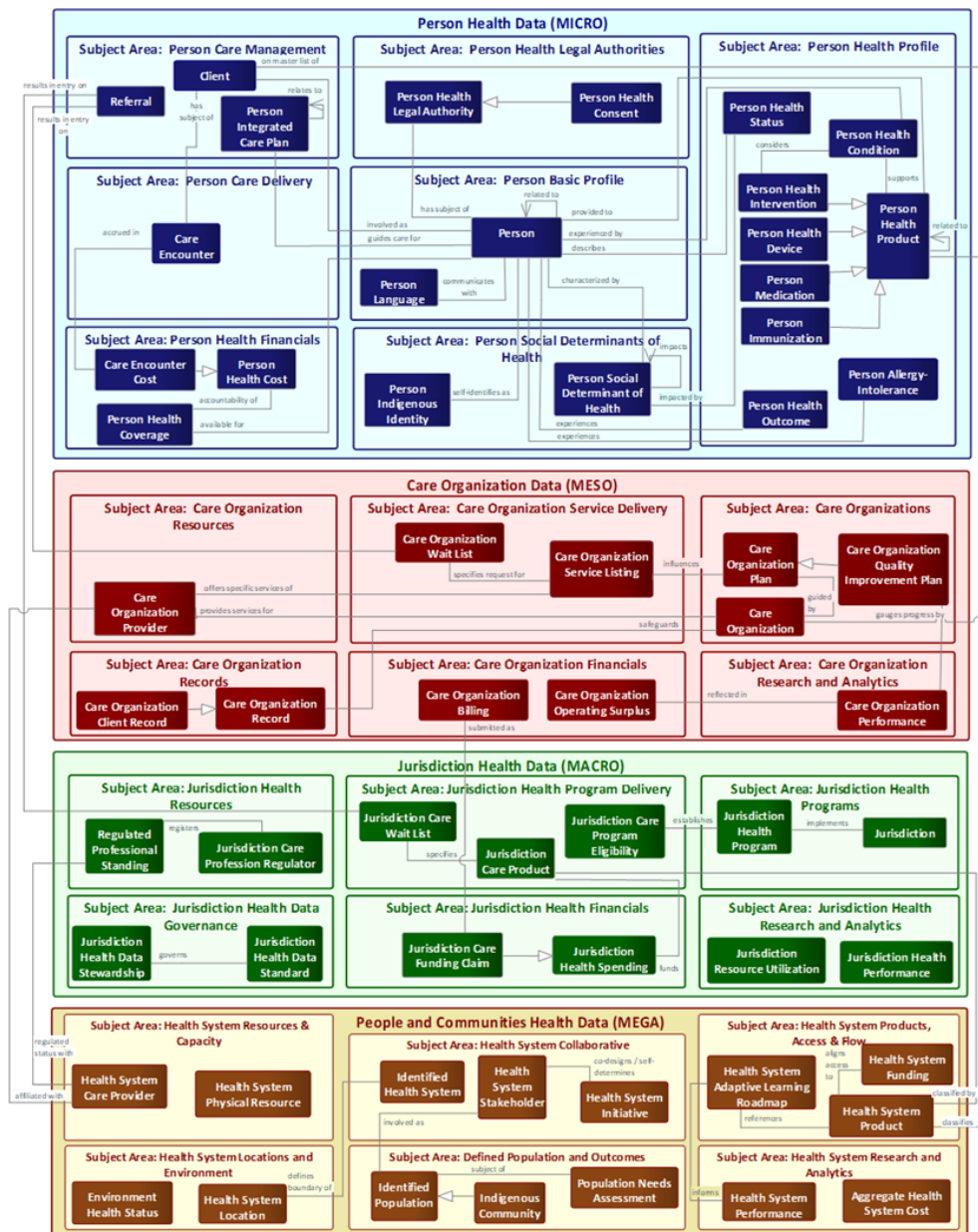
pan-Canadian Health Data Content Framework

LEVEL OF DETAIL

Consistent data is needed across all layers, Mega, Macro, Meso and Micro for better health outcomes



The information model identifies key concepts

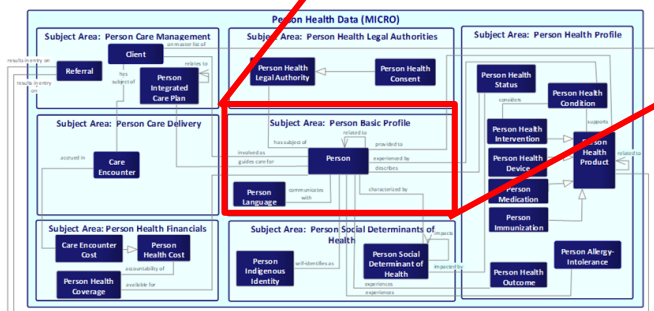
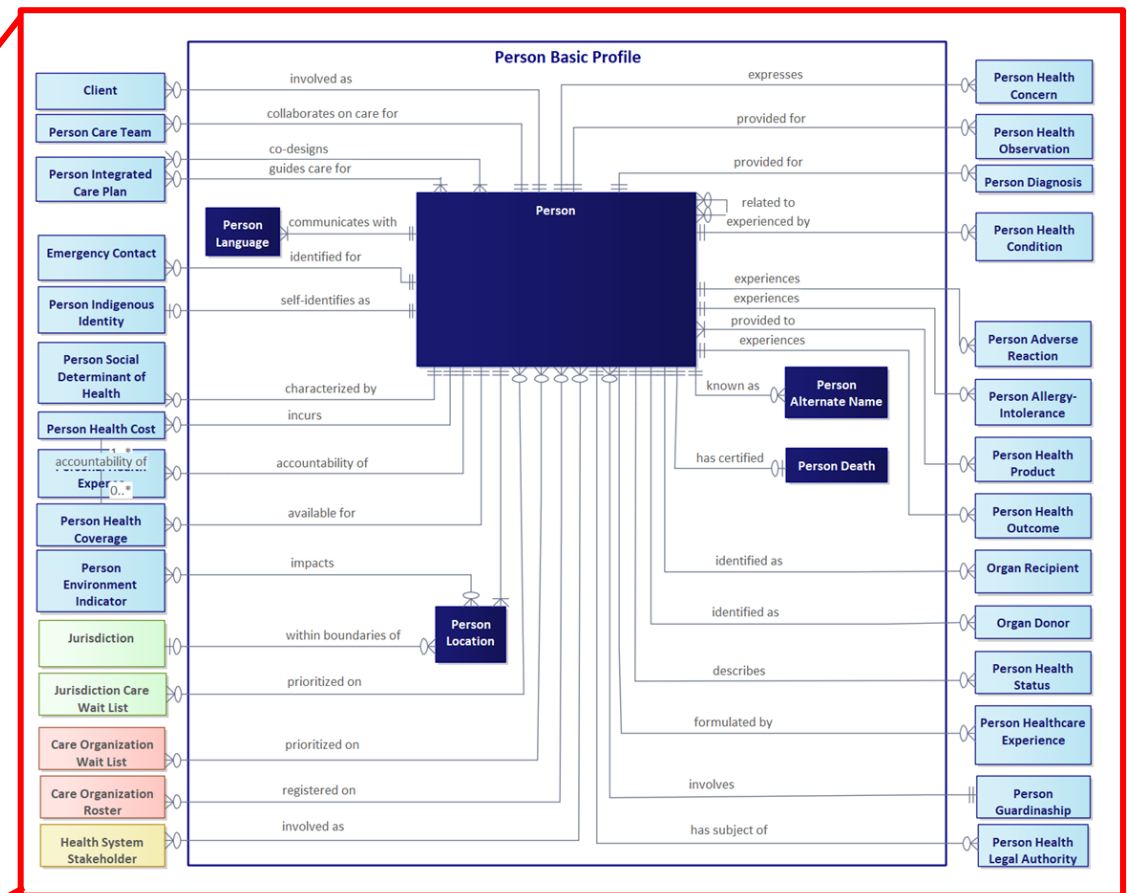


In the four layers important to person health:

- Person Health Data (Micro)
- Care Organization Data (Meso)
- Jurisdiction Health Data (Macro)
- People and Communities Health Data (Mega)

Within 25 subject areas (at this time)

The conceptual data model identifies all real-world concepts

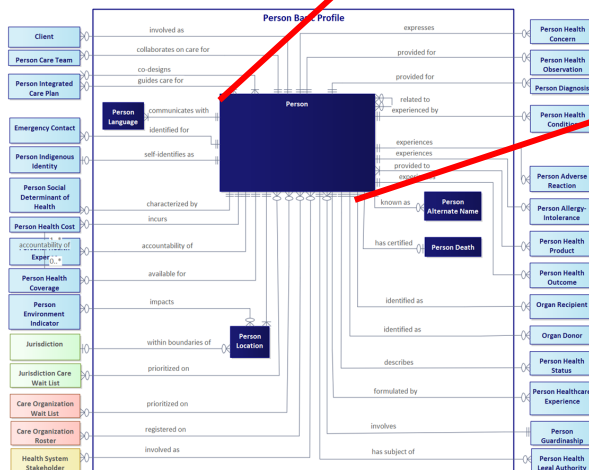


The Logical Data Model will layer in data elements and value sets

Logical Data Model will come later as a drill-down of the Conceptual Data Model

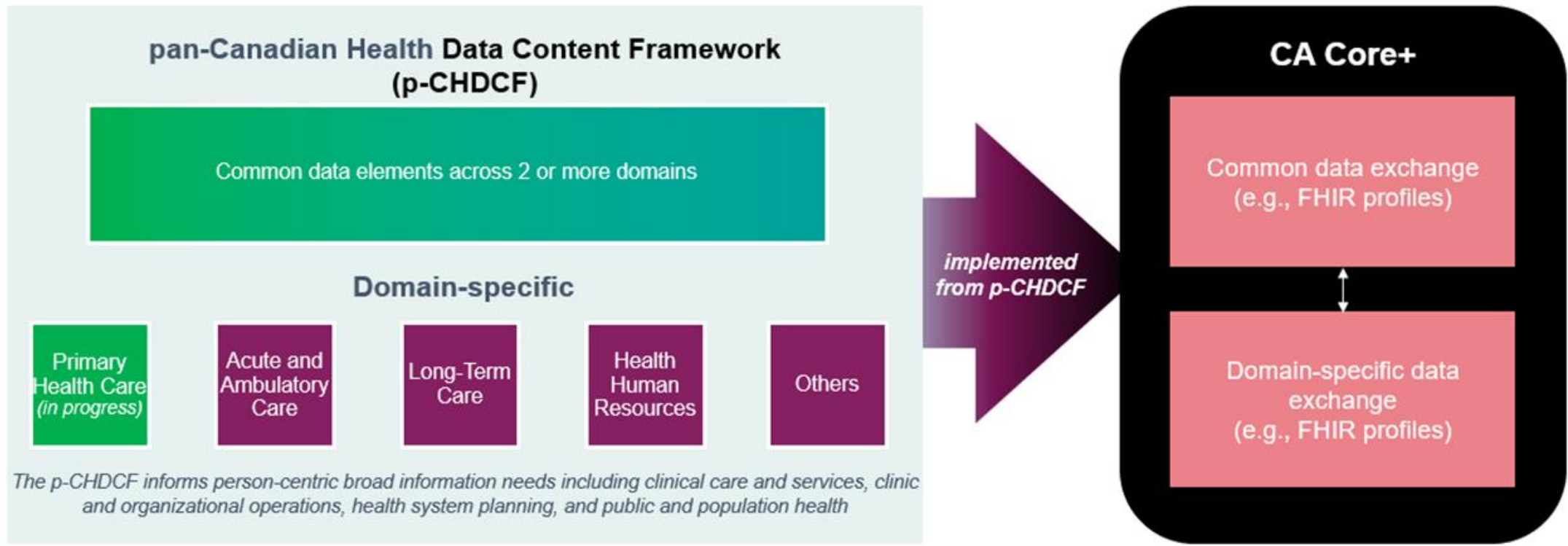
It will add concepts to classify and to fully represent complex relationships

It will identify and defines data attributes / elements for each concept



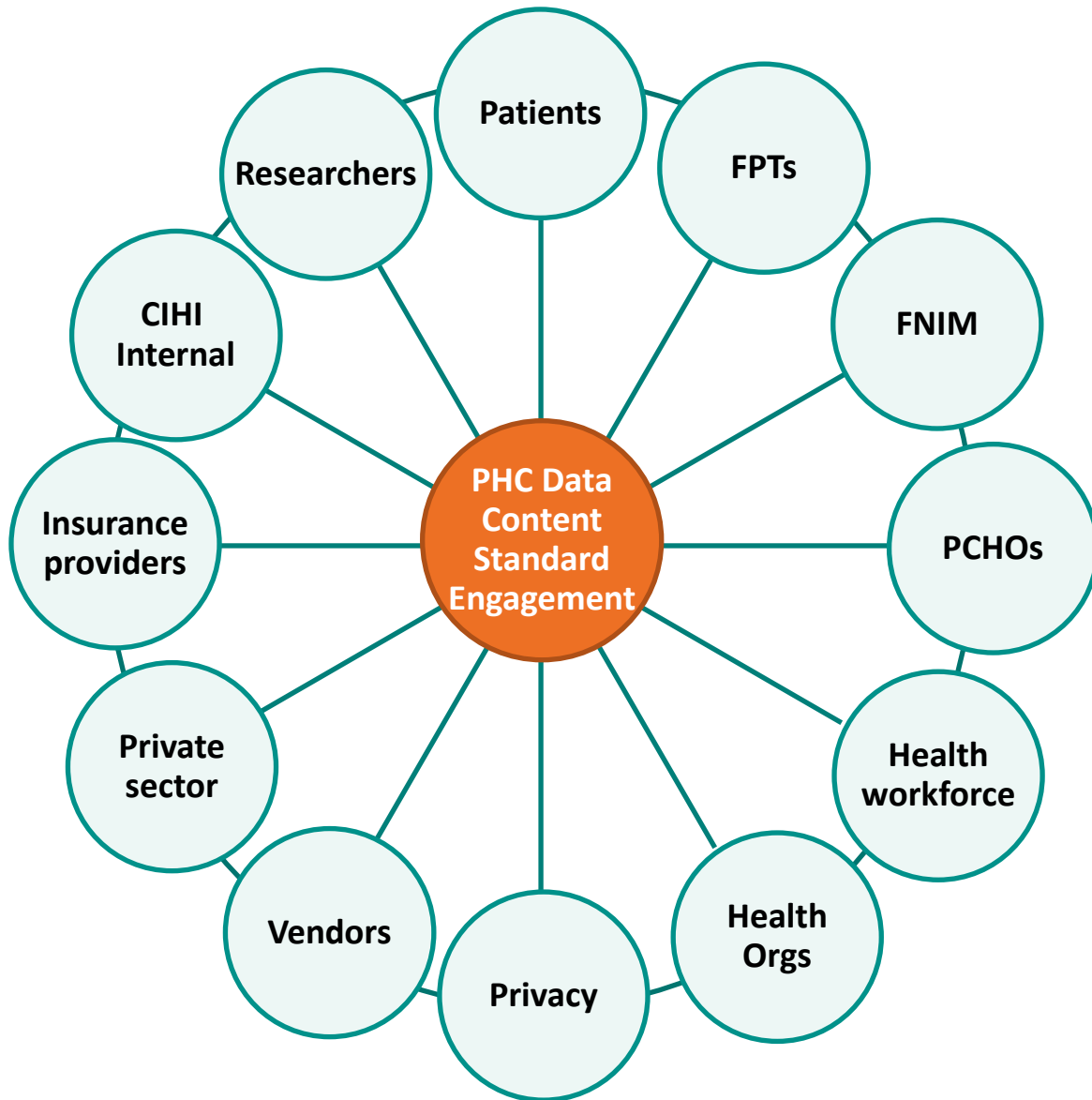
What we are working towards

A pan-Canadian Health Data Content Framework on FHIR



The **CA Core+** implements p-CHDCF (i.e., use-case driven data exchange standard that describes how the p-CHDCF can be exchanged), leveraging efforts of the jurisdictions and groups such as CA-Baseline

Broad engagement and consultation are key



Advancing a PHC Data Content Standard and support architecture will require **a coalition of partners** in public, private and not-for-profit sectors to leverage Canada's collective expertise, reduce duplication, and support implementation.

Timeline for PHC component of the p-CHDCF

TIMELINE OF PAN-CANADIAN HEALTH DATA CONTENT FRAMEWORK ACTIVITIES, FOR PRIMARY HEALTH CARE

BUILD AND REFINE

