Draft Pan-Canadian Health Data Content Framework

Information Model, Conceptual Data Model & Logical Data Model

Version 1, September 2024

(for review and reference only, not an official version)

Canadian Institute for Health Information
Institut canadien d'information sur la santé

Terms of use

Acknowledgements

Sincere gratitude is extended to the individuals and organizations who contributed to the development of the Pan-Canadian Health Data Content Framework. This collaborative effort would not have been possible without the support and expertise of key organizations, including the following:

- Canada Health Infoway
- Canadian Pharmacists Association
- Canadian Red Cross
- Constable Consulting Inc
- eHealth Centre of Excellence
- Health Data Coalition
- HL7 Canada Council
- LCI Health – Laroche Consulting
- Ontario Health
- Ontario Ministry of Health
- OntarioMD
- Provincial Health Services Authority
- Shared Health
- Statistics Canada

Special acknowledgment is also given to the people with lived and living experience, providers, researchers, Indigenous partners, provincial and territorial governments, policymakers and data architects who offered invaluable insights and feedback throughout the development process. Their contributions have been instrumental in advancing the Pan-Canadian Health Data Content Framework and ensuring it meets the diverse needs of Canada's health care landscape.

If you have any questions, or if you would like to participate in our consultations or provide feedback, please email us at connectedcare@cihi.ca.

Introduction

The Canadian Institute for Health Information (CIHI) is developing the Pan-Canadian Health Data Content Framework, which defines, standardizes, and models the health data required to enable connected care in Canada.

The Pan-Canadian Health Data Models are some of the products packaged in the Pan-Canadian Health Data Content Framework.

What is the Information Model?

The Pan-Canadian Health Data Content Information Model (IM) is a high-level model which highlights the key real-world concepts that are important to understanding a person's health. It establishes subject areas for organizing concepts from the data content standard. The subject areas in the Information Model are grouped into layers, each representing data as seen from different health care perspectives: Person Health (Micro), Care Organization (Meso), Health care Jurisdiction (Macro), and the Health care system (Mega). Some concepts in each layer are related to concepts in other layers. However, such relationships are not meant to be exhaustive and are only included to show the overall connections between all health care data.

The scope of the Information Model is intended to cover the entire Canadian health care system. As such, it will contain main topics not yet detailed in the conceptual and logical data models. As the Information Model is intended to provide an overview of all major health care concepts, it will not include the depth of detail included in the conceptual data model or logical data model.

Since the March 2024 release, the Information Model has been restructured to better align with the data categories established within the Pan-Canadian Health Data Content Standard. This artifact has not been reviewed with subject matter experts and has a lower maturity level (0: In development) in comparison with the other data models (1: Draft).

What is the Conceptual Data Model?

The Pan-Canadian Health Conceptual Data Model (CDM) is a high-level model that organizes key health and supporting information concepts. This model provides more detail than the Information Model but does not include the detailed attributions that are specified in the Logical Data Model.

The complete conceptual data model view diagram provides an overview of all entities and relationships detailed within the data models.

What is the Logical Data Model?

The Pan-Canadian Health Logical Data Model (LDM) is a technology-agnostic, semantically rich logical data model that organizes and standardizes health data concepts and how they relate to each other and to the real world. This model, which is integrated with Pan-Canadian Health Data Content Standard, will be a foundational component for data management and data exchange. The model is designed to support future development while still reflecting current real-world scenarios.

This is a Common Data Model that provides a comprehensive foundation to specify how data is organized and represented across the health care continuum. It promotes data integrity and quality by establishing common rules and constraints. The holistic scope of the

model will contribute to better patient care by enabling implementation of standardized comprehensive health records.

The shared language established by the models, in conjunction with the Business Glossary, will enable a mutual understanding of data and will standardize data management, analytics, and interoperability. The simplification and reuse of data management and analytical practices can foster cost reduction and increased efficiency.

A cornerstone of the data models' design is the use of a person-centric approach to ensure precise representation of data about patients and other persons, as required for providing high-quality health care services. The person-centric approach was expanded into the Person-In-A-Role design, allowing for flexible data models that can handle the same person playing one or more roles (e.g. patient, provider). The Party-Role standard data model pattern was used to model entities and relationships. The Party-Role pattern also broadens the concept of ‘person’ into ‘party’ to include organizations and groups, thus allowing for additional model flexibility.

Audiences

The audiences for the Logical Data Model consist of decision-makers, policymakers, researchers, health care institutions, IT staff, clinical solution vendor technical staff, experts involved in standards development and data architecture, software developers, and those interested in e-health and digital health modernization initiatives, and anyone who would like more information about the Pan-Canadian Health Data Content Framework.

The data models increase in detail from Information Model to Conceptual Data Model to Logical Data Model. Clinical audiences and the general public may find it beneficial to view the Information Model and the Conceptual Data Model first to orient themselves as to the general structure and layout of those models, before diving into the Logical Data Model.

Development approach

An environmental scan was conducted for existing health standards produced by Canadian organizations, international organizations, and various other health authorities. A model structure was established that contains key concepts from those standards, which are also documented in the Pan-Canadian Health Data Content Framework’s data content standard, on which the model is based. The model’s structure was validated by internal and external stakeholders and was iteratively refined based on the feedback received.

The model strives to reflect both the current realities of the Canadian health care system and how it could be improved upon in a future ideal state. It remains technology-agnostic with only the inclusion of generic data types and business metadata. Technical attributes, such as primary and foreign keys to link tables and databases, were not included and implementors will need to add further detail as required by their physical system.

Architecture Principles

When developing the data models, the following characteristics served as guiding principles for all design choices.

- **Flexibility:** Establish a common data model that can be further specialized based on individual needs.
- **Consistency:** Provide coherent, non-contradictory representation of data through model entities, attributes, relationships, rules, value sets, and metadata.
- **Simplicity:** Design to facilitate clear understanding and easy adoption.
- **Abstraction:** Manage the level of abstraction that is required to properly represent entities, relationships, and other model elements.
- **Clear Definition:** Develop definitions that promote common understanding and facilitate proper adoption – definitions of modelled information are fully documented in the Business Glossary.
- **Evolution:** Design with agility and scalability in mind, using techniques such as inheritance or metadata to seamlessly add new attributes.
- **Accuracy and Traceability:** Provide up-to-date, comprehensive documentation and metadata to ensure common correct understanding of the model.

Help us shape the Data Models

Your feedback is critical to the development of the data models. We are asking the public to help us identify key missing concepts, provide feedback on key concept definitions, and validate core relationships at a high level.

Please complete the feedback survey at this link.

Logical & Conceptual Data Model

Composition

The logical and conceptual data models covers the following subject areas:

1. Address and Location
2. Allergy and Intolerance
3. Drug Product
4. Geography
5. Health Service Event

6. Immunization
7. Medication Request, Statement, Administration
8. Organization Information
9. Patient Encounter
10. Patient Health Concern
11. Person Information
12. Social Determinants of Health Concepts
13. Social Determinants of Health Assessment

Definitions & Naming Conventions

The definitions of attributes and entities in the Logical Data Model (LDM) describe the data concepts represented in the model and are linked to one or more terms within the business glossary.

A standard naming convention is applied across the LDM to ensure clear understanding of entities and attributes. A few details are outlined below to aid reader understanding.

Entity:

- Metadata value sets with complex structure will be emphasized as an individual entity.
- Bridge entities will be composed of the names of both entities they connect.

Attribute:

- Business dates are titled “entity name” effective date or “entity name” expiry date.
- Attributes are typically prefixed by entity-specific characteristics (generally but not necessarily the name of the entity) to distinguish them from other similar attributes. However, such prefixing applies only when the meaning of an attribute involves the entity to which it belongs.
    - For example, in the Patient Allergy-Intolerance entity, the attribute name Patient Allergy-Intolerance Resolution Date contains the prefix Patient, which is an entity-specific characteristic, since different patients may have different resolution dates for the same allergy or intolerance.
    - On the other hand, the attribute Allergy-Intolerance Code in the same entity does not contain the entity prefix (which would necessarily begin with Patient) since the meaning of an allergy-intolerance – product or substance – does not involve patients having that condition.

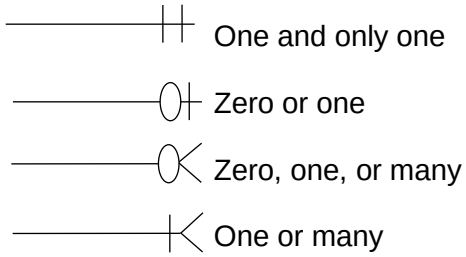
It follows from the above that:

- Attributes with the same name have same meaning.

Relationships

Association:

Plain lines in the Logical and Conceptual Data Models represent association relationships between entities. Information engineering is used to depict cardinalities in these relationships. This includes zero to one, one to one, zero to many and one to many relationships.



Any such cardinality applies to the entity which is the nearest to its symbol in a diagram. Every relationship thus has 2 cardinality symbols, one at either end.

The direction of a relationship is depicted by an arrow near its name.

For example, the Patient Health Concern subject area contains the relationship “has recorded” from Patient Health Concern entity to Health Concern Evidence entity. Its cardinalities, as their symbols indicate, are:

- One and only one near the Patient Health Concern entity.
- Zero, one, or many near the Health Concern Evidence entity.

Therefore, each Patient Health Concern has zero, one, or many instances of Health Concern Evidence (e.g. an Xray, an MRI scan, a patient history file). Conversely, each instance of Health Concern Evidence applies to one and only one Patient Health Concern.

Stated simply, a Patient Health Concern may have recorded Health Concern Evidence(s). Conversely, Health Concern Evidence is always recorded for a single Patient Health Concern.

Generalization:

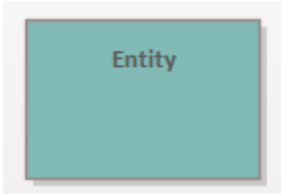
Generalization relationships have an arrow point from the child to the parent.

This means that the child entity is a special case (subtype) of the parent entity.

For example, in the Drug Product subject area, Substance is a (special case of) Drug. Consequently, all properties of the parent entity Drug – all its attributes and all the relationships from or to it – also apply to the child entity Substance.

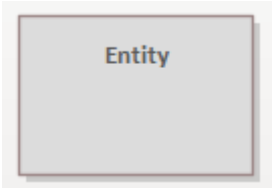
Legend

1. **Entity**: An encapsulation of data recognized by a domain expert as a representation of a discrete concept. Examples include "immunization", "metadata", and "business glossary."
    a. **Green Entities:** Entities detailed in the subject area diagram

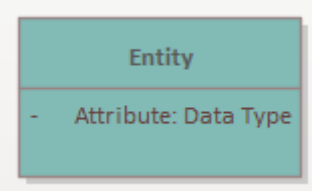


    b. **Brown Entities**: Entities detailed in another subject area diagram

    c. **Gray Entities**: Entities to be detailed in a future release



2. **Attribute** (in Logical Data Model only): A characteristic of an entity, providing more specific information to distinguish it from other entities.



    a. Each attribute will have an associated data type.

Data Type

ISO 11404 was used as a key reference in developing the following data types for the logical data model.

- String: A sequence of characters, numbers, or symbols.

- Codeable concept: A combination of code system and value set code which uniquely identifies a concept within the value set.
- Date: A day, month, and year.
- Date time: Date and time together.
- Decimal: A non-negative number with 0 or more significant digits after the decimal point.
- Integer: A non-negative number with no significant digits after the decimal point.
- Identifier: A string or number that uniquely identifies a person, item, or location within an identifier system.
- Indicator: A true or false value.
- Polygon: A sequence of coordinates to denote the boundary of a geographic shape.

CACDI View

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 the Fast Health Care Interoperability Resources (FHIR) profiles created by Canada Health Infoway (also known as CA Core+) to facilitate the meaningful exchange of health care information. Together, the efforts of the Canadian Institute for Health Information (CIHI) and of Canada Health Infoway, 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.

The CACDI view of the Logical and Conceptual Data Models details the concepts, value sets, and relationships identified within the CACDI. In the CACDI view of the model, attributes will be tagged as “Essential for Exchange” or “Recommended for Exchange”.

No Absent

When populating an entity, all its attributes marked with “No Absent” should have a meaningful value; null and absent values are not considered meaningful values. Attributes are categorized as “No Absent” if they are required for patient safety, to meet a regulatory requirement, or directly impact the meaning and understanding of the entity.

How to Navigate the Model

Viewing the HTML

1. Download the zip file
2. Extract the zip file
3. Open the index.html file using a web browser

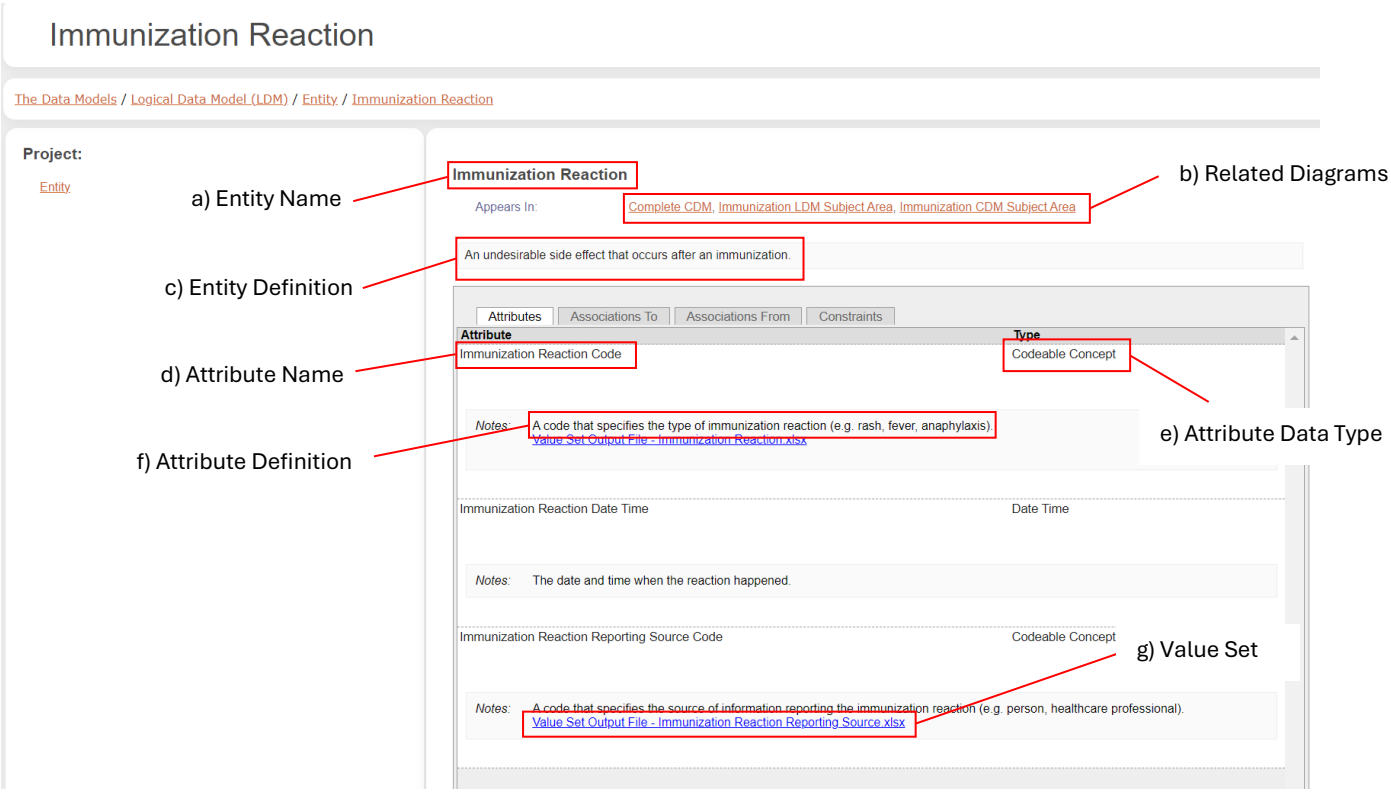
Selecting a Diagram

4. Open the Diagram folder using the index on the left-hand side of the browser window
5. Click on the diagram of interest to view it

Selecting an Entity

1. Open the Entity folder using the index on the left-hand side of the browser window
2. Click on the entity of interest to view details associated with it

Entity Components



a) Entity Name: Name of the entity detailed on the page.

b) Connected Diagrams: Lists all diagrams in which the entity appears.

c) Entity Definition: A description of the entity to aid understanding.

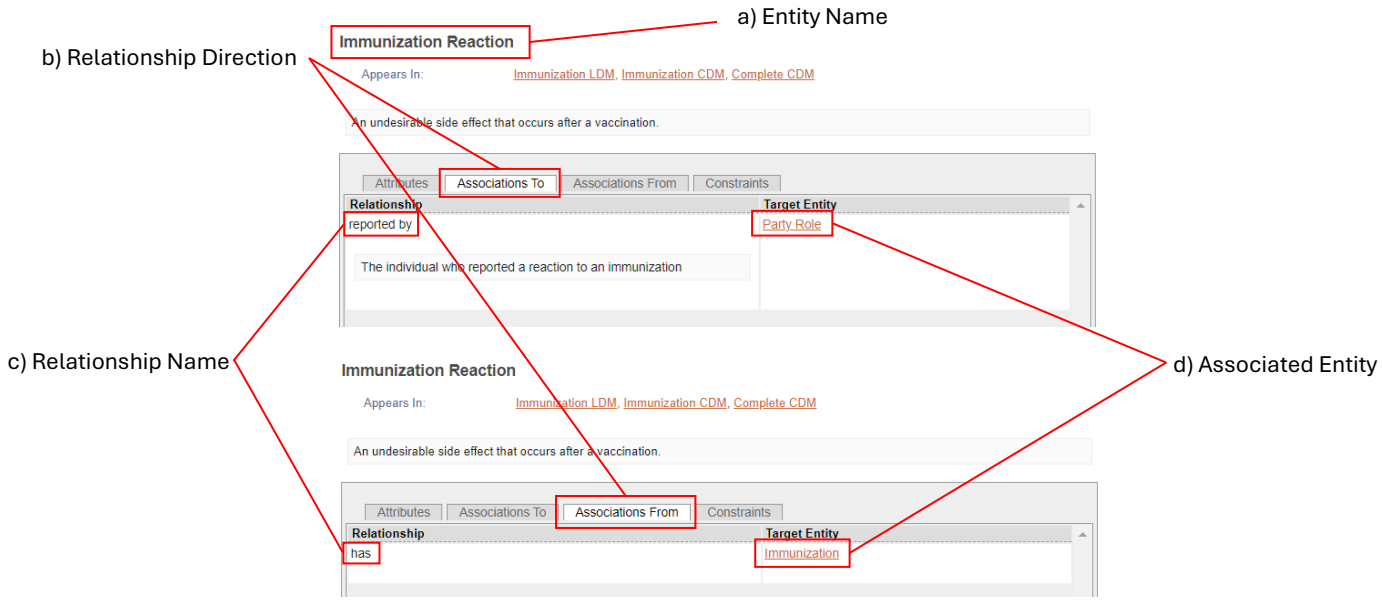
d) Attribute Name: Name of the attribute associated with the entity.

e) Attribute Data Type: The data type of the attribute.

f) Attribute Definition: A description of the attribute to aid understanding.

g) Value Set: Open and download the attached excel file to view value sets associated with each codeable concept.

Entity – Association



a) Entity Name: Name of the entity detailed on the page.

b) Relationship Direction: Indicates the direction in which the reader should read the relationship. Association to relationships start with a) Entity Name while association from relationships start with d) Associated Entity. If present, generalizations will be found in the “Other Links” tab.

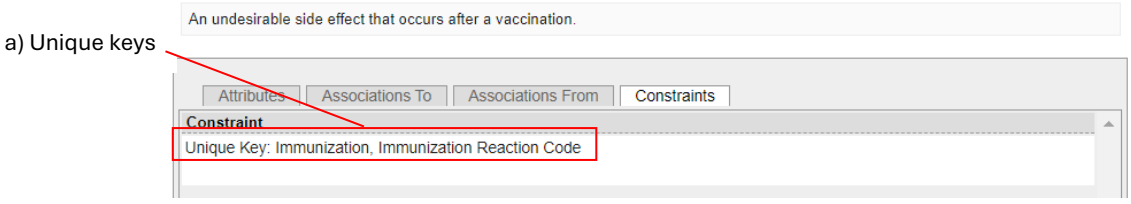
   a. Association to: Patient Encounter is part of Episode of Care

   b. Association from: Appointment for Patient Encounter

c) Relationship Name: The type of relationship being detailed.

d) Associated Entity: The entity related to the one detailed on the page.

Entity – Constraints



a) Unique keys: Unique business keys for each entity are identified via constraints. Entities that only have a technical key (e.g. Record ID) will not have a documented unique key.

Maturity

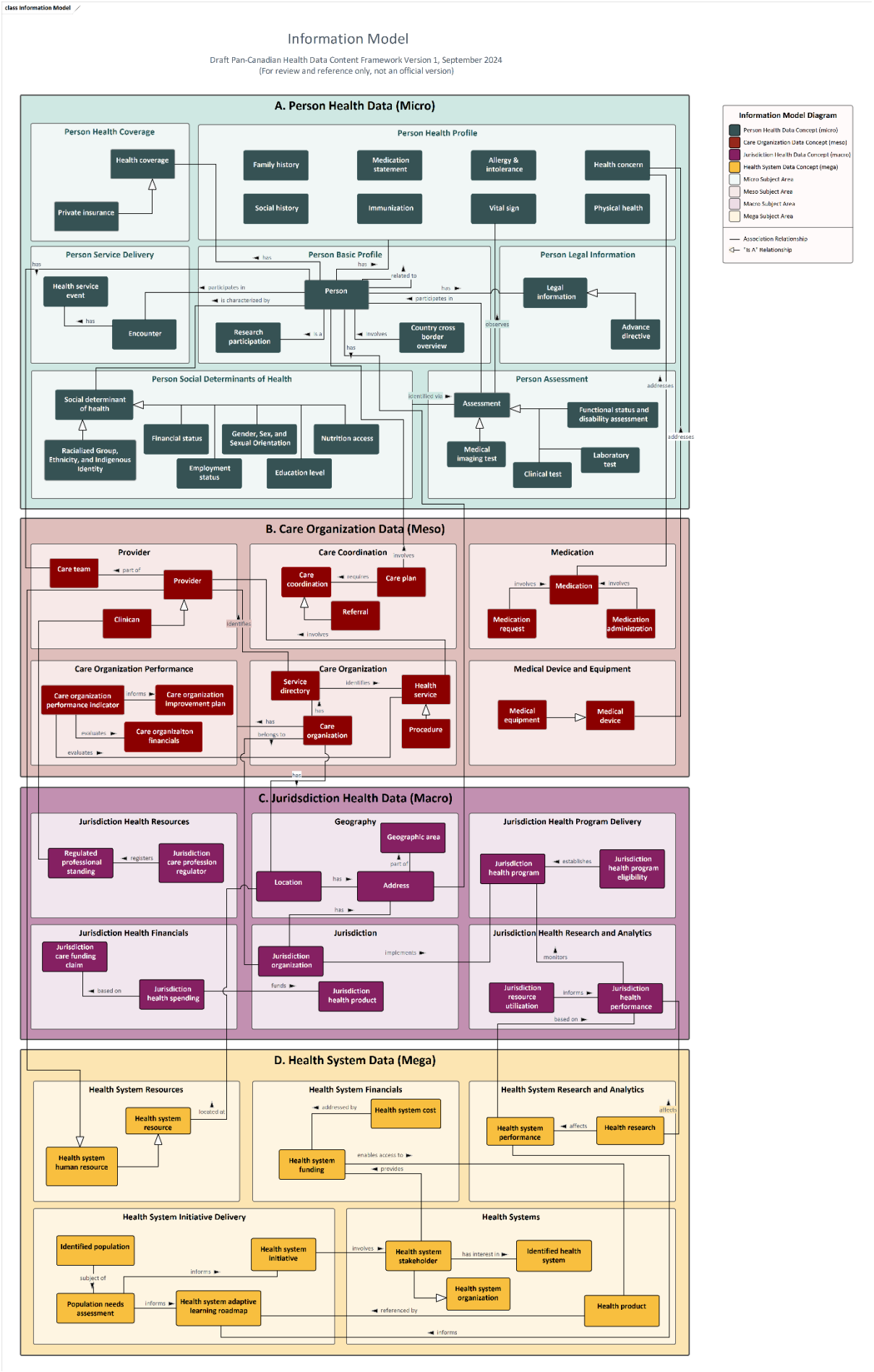
A maturity model (Table 1) was designed to transparently document the readiness of artifacts within the framework, including data elements, value sets, definitions, and data architecture components. The maturity model facilitates tracking the evolution of those artifacts over time, enabling continuous refinement and enhancement based on feedback and emerging needs. The maturity of the framework's deliverables will be re-evaluated with each release. The maturity level of the Information Model is 0: In development and the maturity level of the Conceptual Data Model and Logical Data Model is 1: Draft.

Table 1 Maturity model

Stage of maturity	Definition
Future development	Coming soon
0: In development	Artifact is a work in progress
1: Draft	Artifact incorporates input from experts
2: Proposed	Artifact has been through at least one round of open public review
3: Ready for use	Artifact is ready for implementation

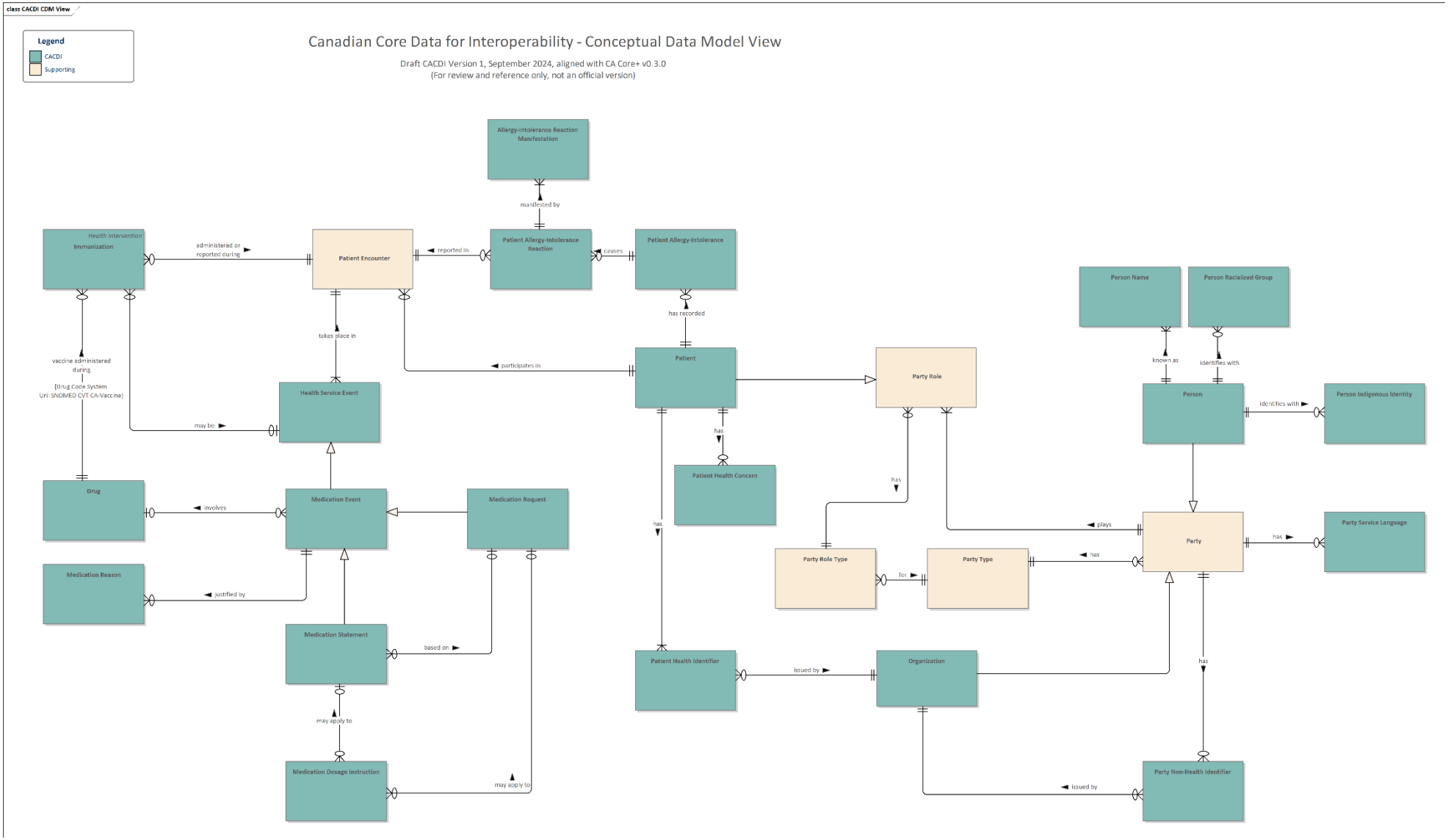
Appendix A: Static Information Model

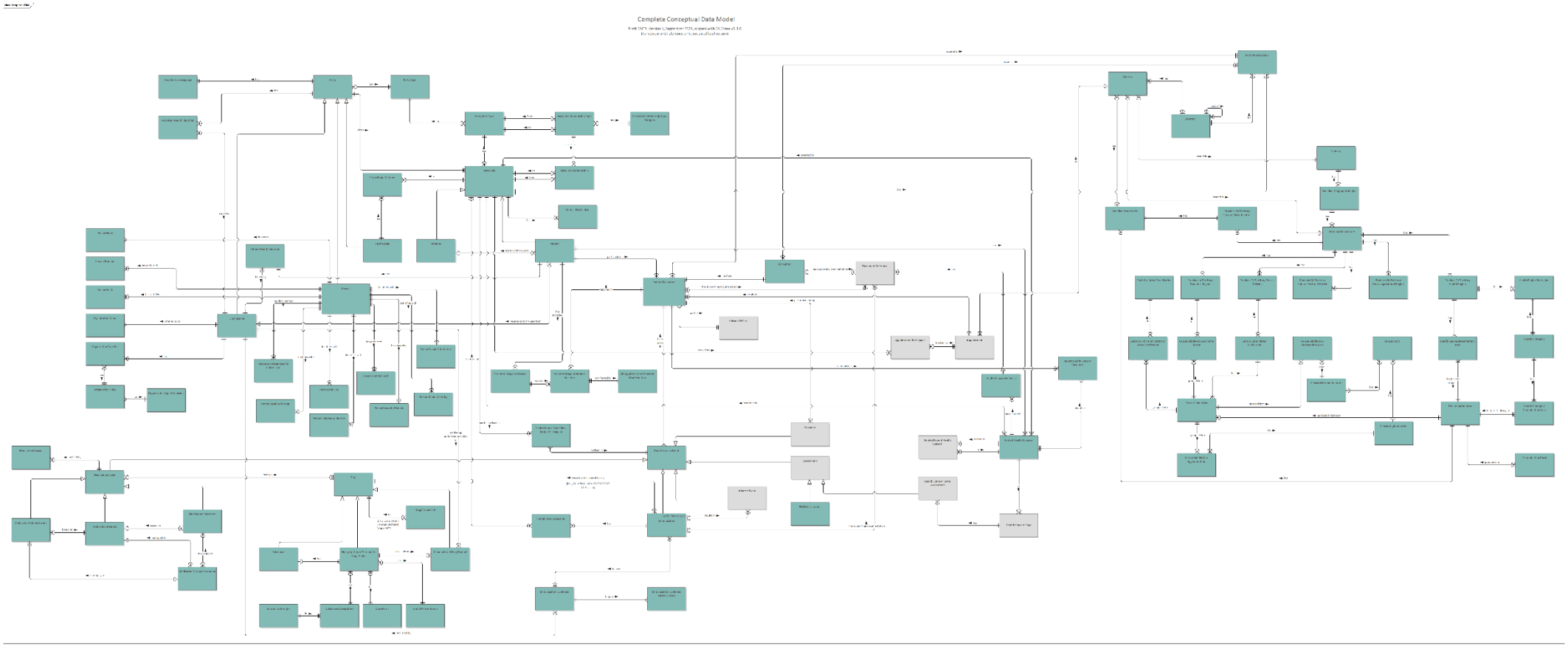
For details, definitions, and an interactive model, please refer to the zipped data model HTML file.



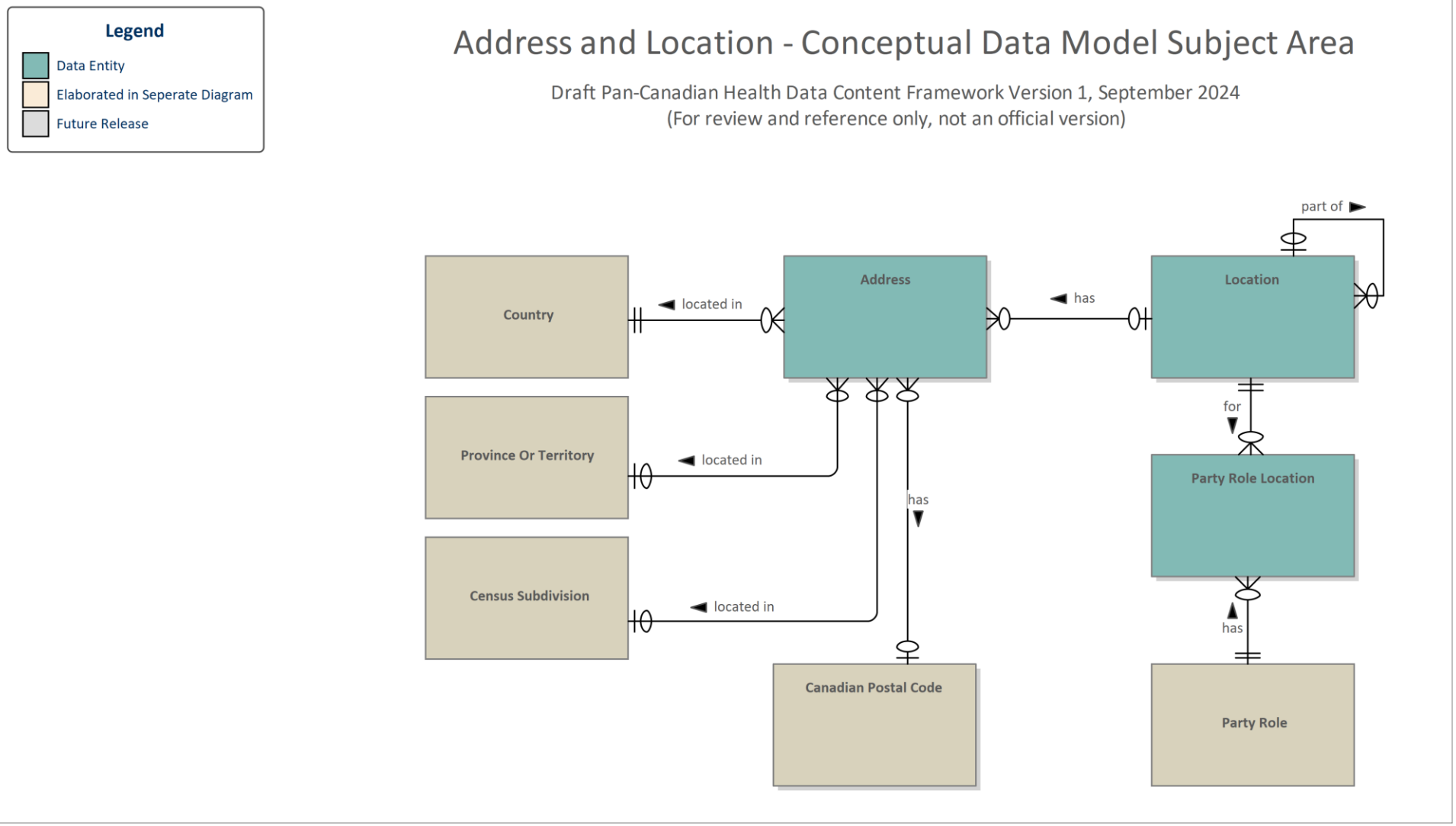
Appendix B: Static Conceptual Data Model

For details, definitions, and an interactive model, please refer to the zipped data model HTML file.

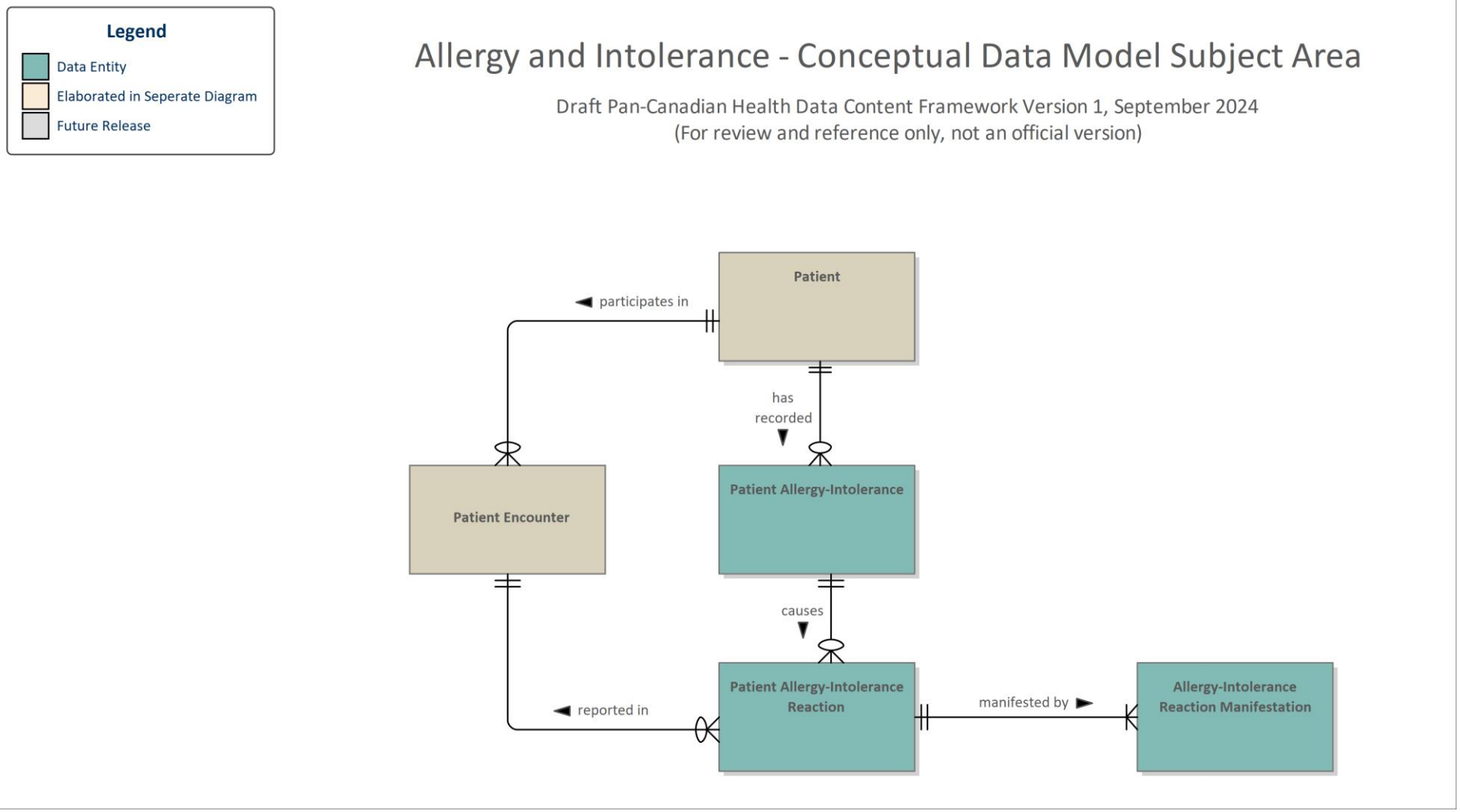


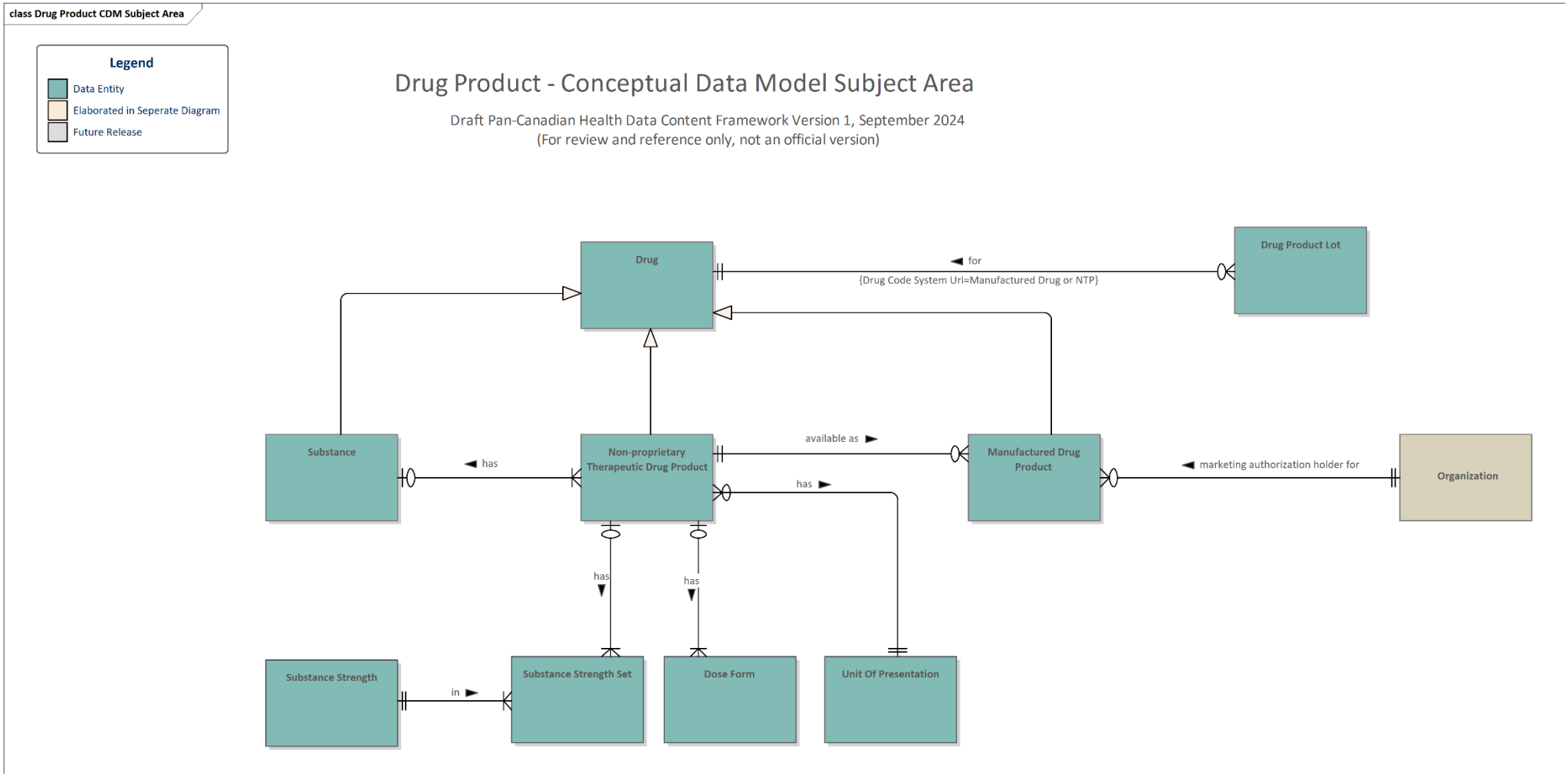

Complete Conceptual Data Model

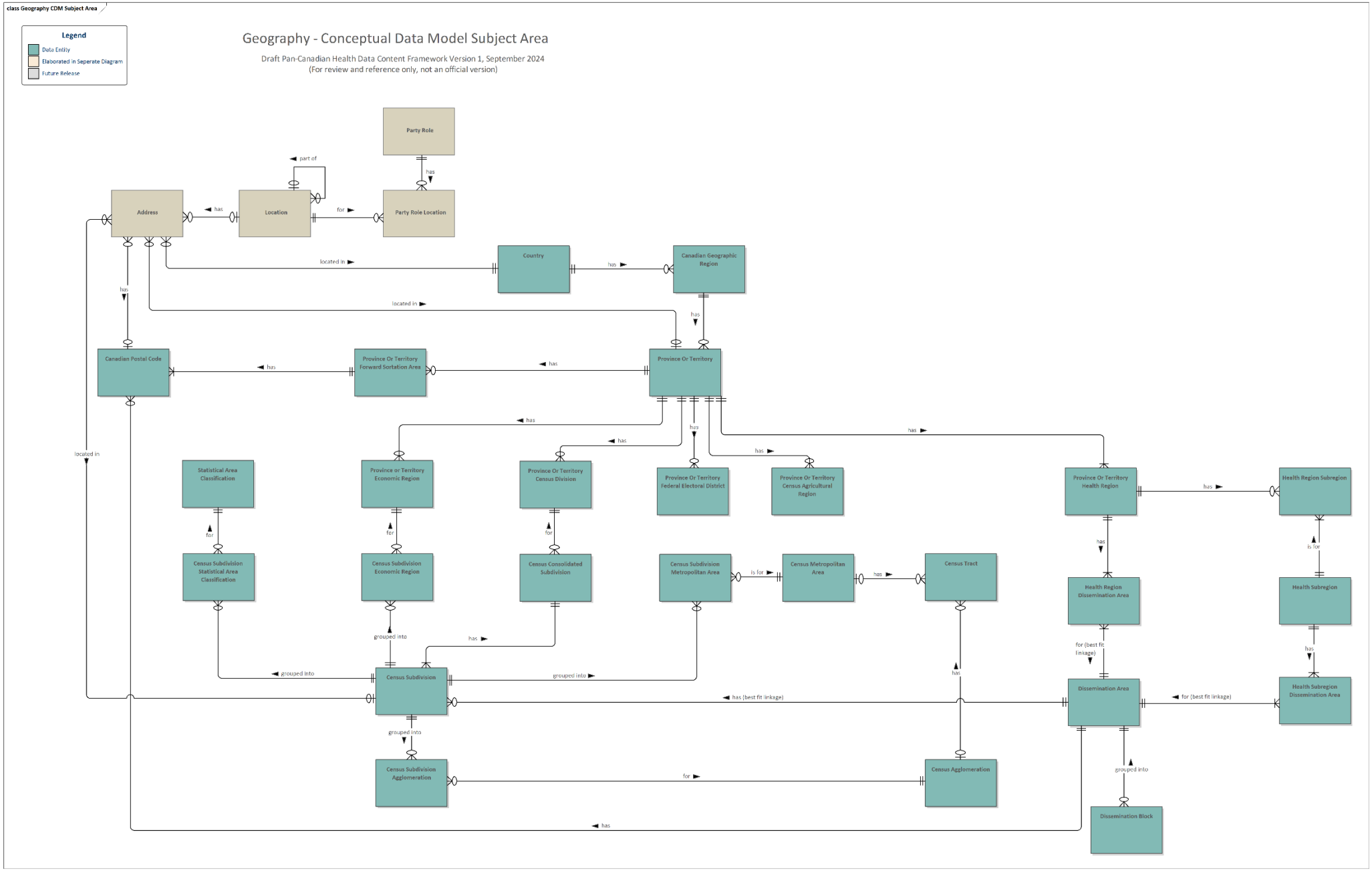
class Address and Location CDM Subject Area

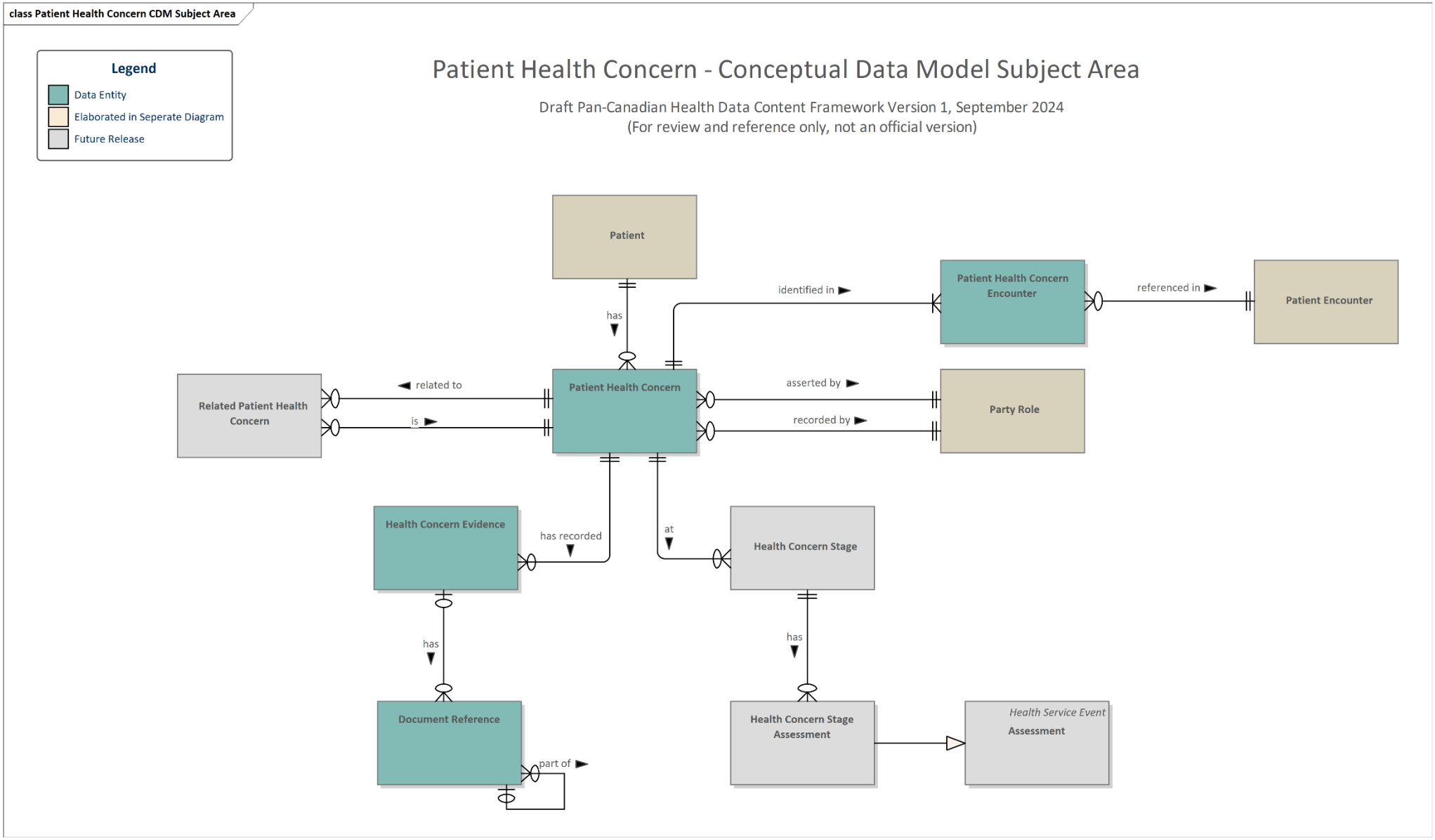


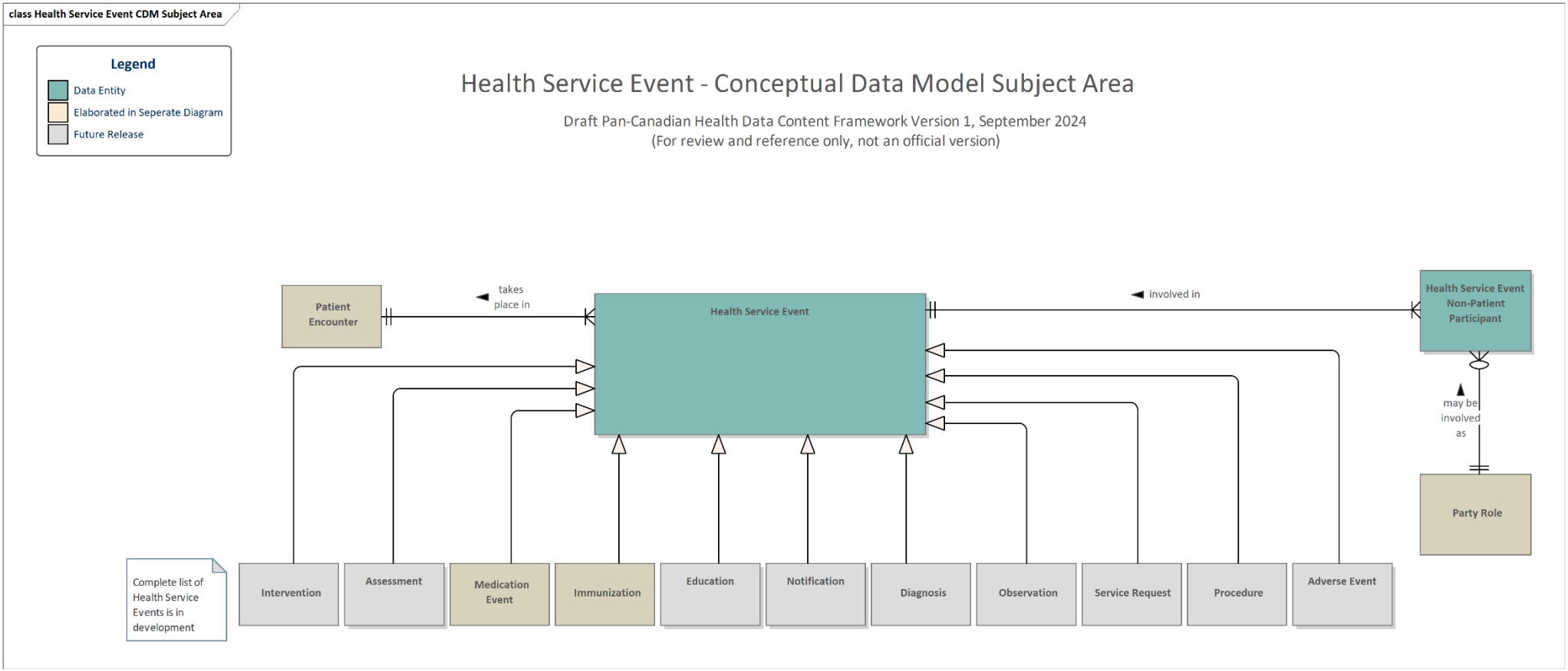
class Allergy and Intolerance CDM Subject Area

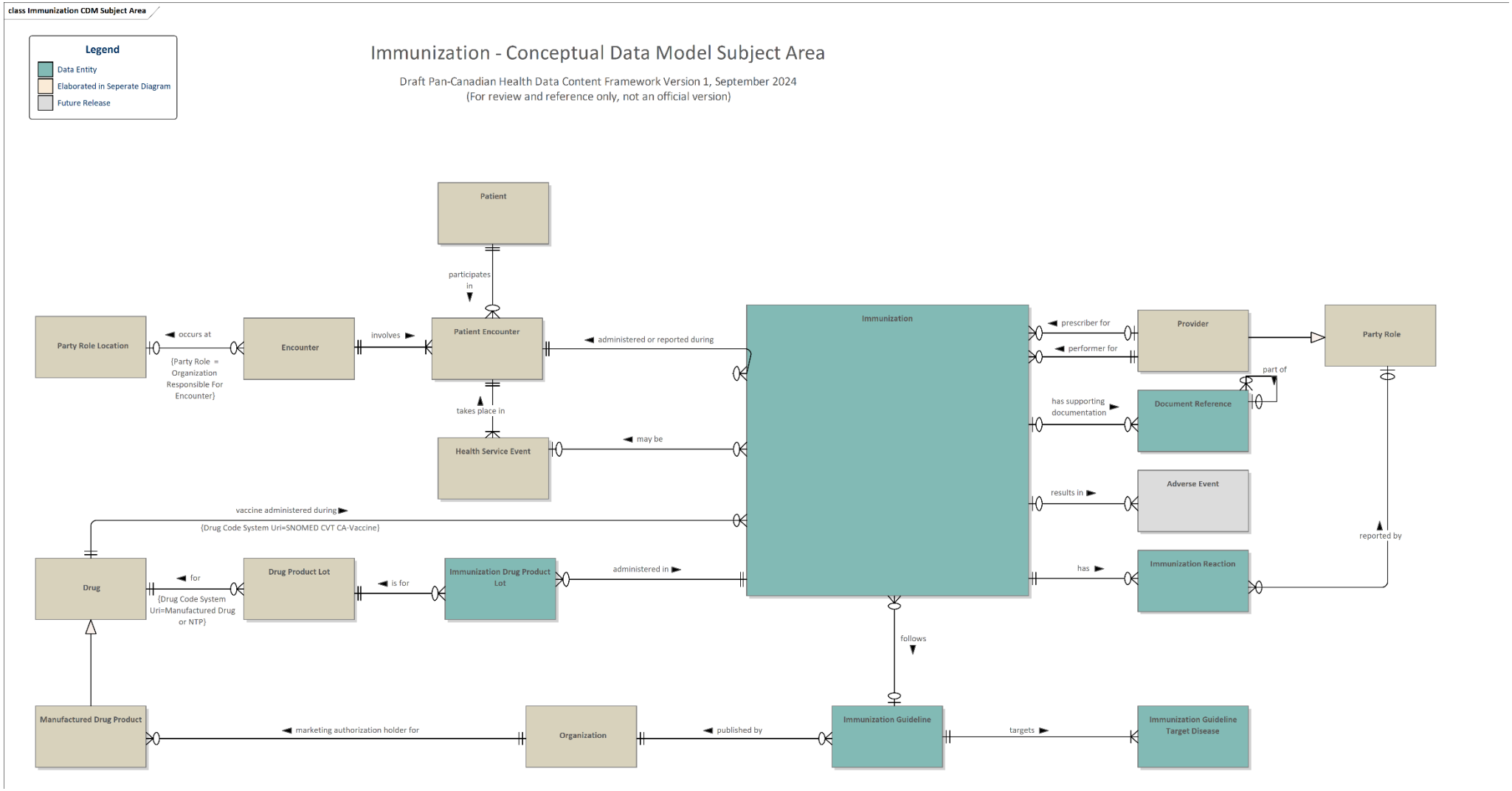



class Drug Product CDM Subject Area
Legend
Data Entity
Elaborated in Seperate Diagram
Future Release
Drug Product - Conceptual Data Model Subject Area
Draft Pan-Canadian Health Data Content Framework Version 1, September 2024
(For review and reference only, not an official version)
Drug
for
{Drug Code System Uri=Manufactured Drug or NTP}
Drug Product Lot
Substance
has
Non-proprietary Therapeutic Drug Product
available as
Manufactured Drug Product
marketing authorization holder for
Organization
has
has
has
has
Substance Strength
in
Substance Strength Set
Dose Form
Unit Of Presentation

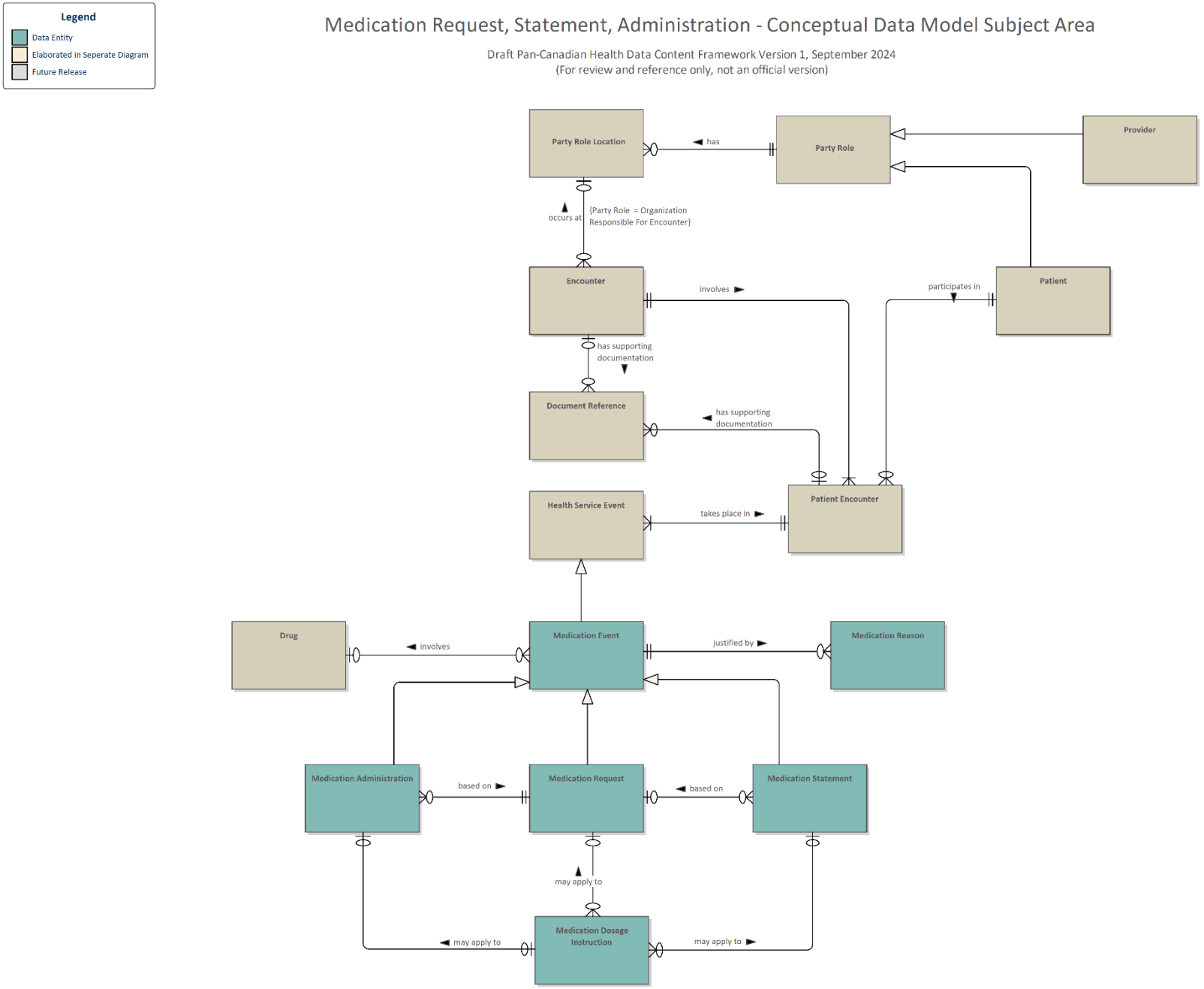

class Geography CDM Subject Area
Legend
Data Entity
Elaborated in Seperate Diagram
Future Release
Geography - Conceptual Data Model Subject Area
Draft Pan-Canadian Health Data Content Framework Version 1, September 2024
(For review and reference only, not an official version)
Party Role
part of
has
Address
has
Location
for
Party Role Location
located in
Country
has
Canadian Geographic Region
has
located in
has
Canadian Postal Code
has
Province Or Territory Forward Sortation Area
has
Province Or Territory
has
has
has
has
has
located in
Statistical Area Classification
Province or Territory Economic Region
Province Or Territory Census Division
Province Or Territory Federal Electoral District
Province Or Territory Census Agricultural Region
Province Or Territory Health Region
has
Health Region Subregion
for
for
for
has
is for
Census Subdivision Statistical Area Classification
Census Subdivision Economic Region
Census Consolidated Subdivision
Census Subdivision Metropolitan Area
is for
Census Metropolitan Area
has
Census Tract
Health Region Dissemination Area
Health Subregion
grouped into
has
for (best fit linkage)
has
grouped into
has
Census Subdivision
grouped into
has (best fit linkage)
has
Dissemination Area
for (best fit linkage)
Health Subregion Dissemination Area
grouped into
Census Subdivision Agglomeration
for
Census Agglomeration
grouped into
Dissemination Block
has

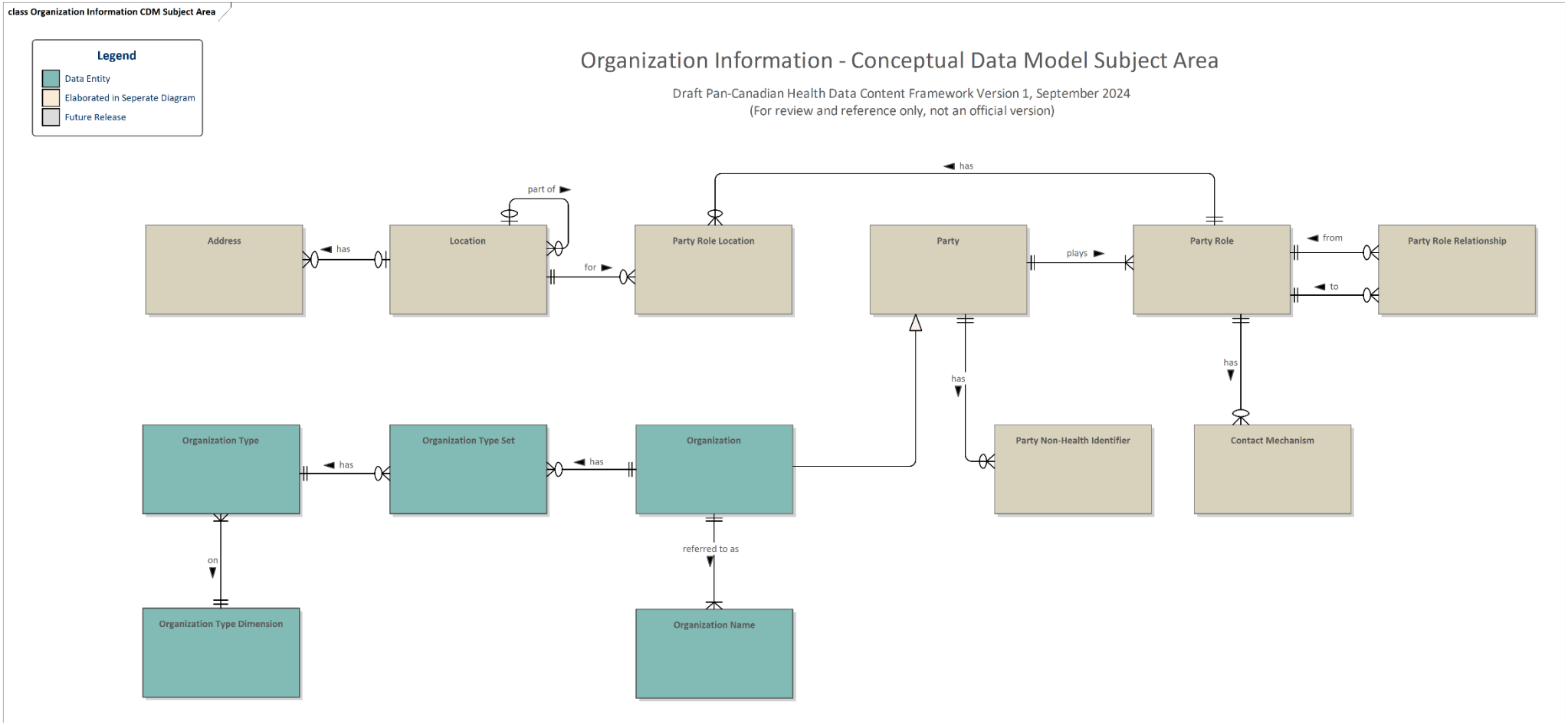

class Patient Health Concern CDM Subject Area
Legend
Data Entity
Elaborated in Seperate Diagram
Future Release
Patient Health Concern - Conceptual Data Model Subject Area
Draft Pan-Canadian Health Data Content Framework Version 1, September 2024
(For review and reference only, not an official version)
Patient
has
identified in
Patient Health Concern Encounter
referenced in
Patient Encounter
Related Patient Health Concern
related to
is
Patient Health Concern
asserted by
recorded by
Party Role
Health Concern Evidence
has recorded
at
Health Concern Stage
has
has
Document Reference
part of
Health Concern Stage Assessment
Health Service Event
Assessment


class Health Service Event CDM Subject Area
Legend
Data Entity
Elaborated in Seperate Diagram
Future Release
Health Service Event - Conceptual Data Model Subject Area
Draft Pan-Canadian Health Data Content Framework Version 1, September 2024
(For review and reference only, not an official version)
Patient Encounter
takes place in
Health Service Event
involved in
Health Service Event Non-Patient Participant
may be involved as
Party Role
Complete list of Health Service Events is in development
Intervention
Assessment
Medication Event
Immunization
Education
Notification
Diagnosis
Observation
Service Request
Procedure
Adverse Event


class Immunization CDM Subject Area
Legend
Data Entity
Elaborated in Seperate Diagram
Future Release
Immunization - Conceptual Data Model Subject Area
Draft Pan-Canadian Health Data Content Framework Version 1, September 2024
(For review and reference only, not an official version)
Patient
participates in
Party Role Location
occurs at
{Party Role = Organization Responsible For Encounter}
Encounter
involves
Patient Encounter
administered or reported during
takes place in
Health Service Event
may be
Immunization
prescriber for
performer for
Provider
Party Role
part of
has supporting documentation
Document Reference
results in
Adverse Event
reported by
vaccine administered during
{Drug Code System Uri=SNOMED CVT CA-Vaccine}
Drug
for
{Drug Code System Uri=Manufactured Drug or NTP}
Drug Product Lot
is for
Immunization Drug Product Lot
administered in
has
Immunization Reaction
follows
Manufactured Drug Product
marketing authorization holder for
Organization
published by
Immunization Guideline
targets
Immunization Guideline Target Disease

class Medication Request Statement, Administration CDM Subject Area

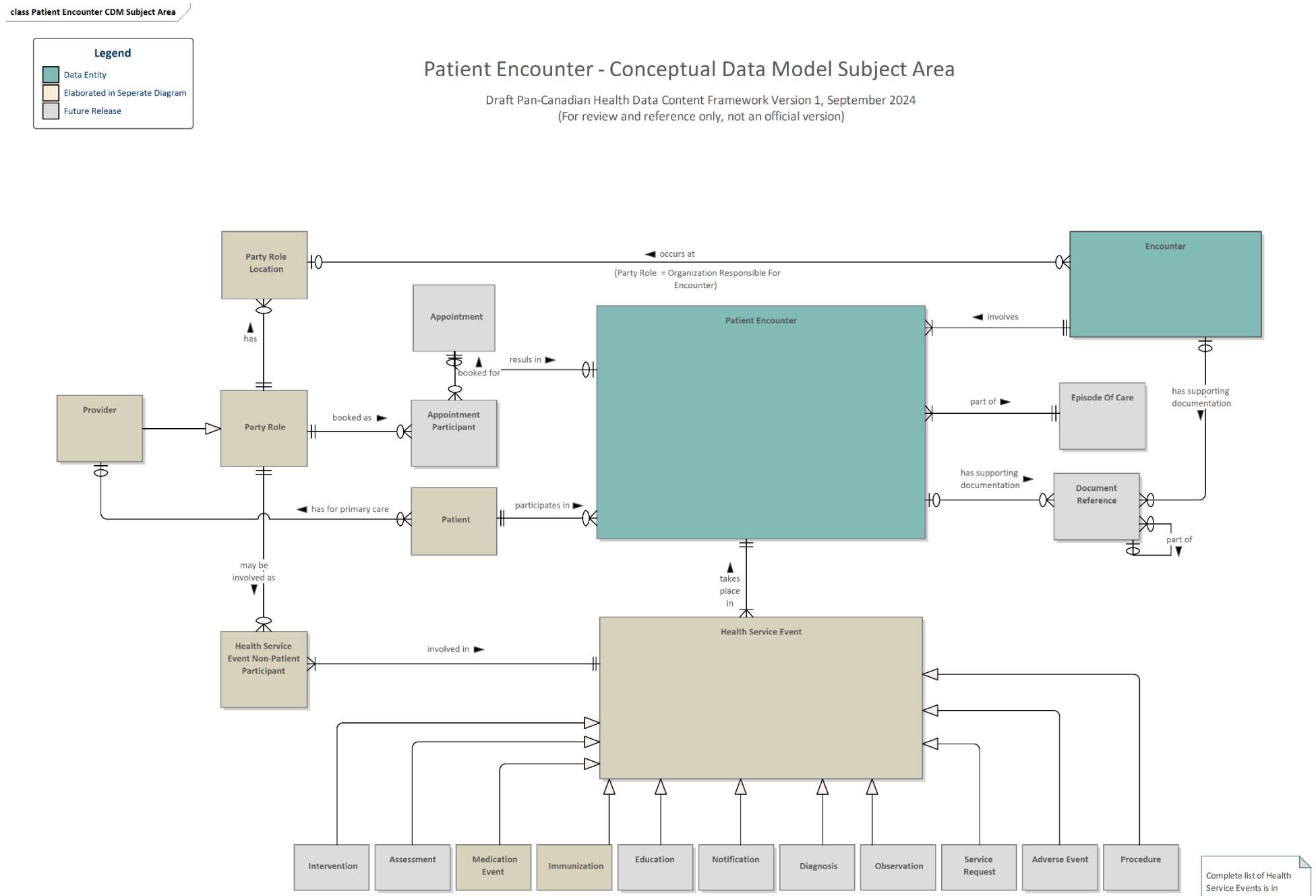



class Organization Information CDM Subject Area
Legend
Data Entity
Elaborated in Seperate Diagram
Future Release
Organization Information - Conceptual Data Model Subject Area
Draft Pan-Canadian Health Data Content Framework Version 1, September 2024
(For review and reference only, not an official version)
has
part of
Address
has
Location
for
Party Role Location
Party
plays
Party Role
from
to
Party Role Relationship
has
has
has
Organization Type
has
Organization Type Set
has
Organization
Party Non-Health Identifier
Contact Mechanism
on
referred to as
Organization Type Dimension
Organization Name

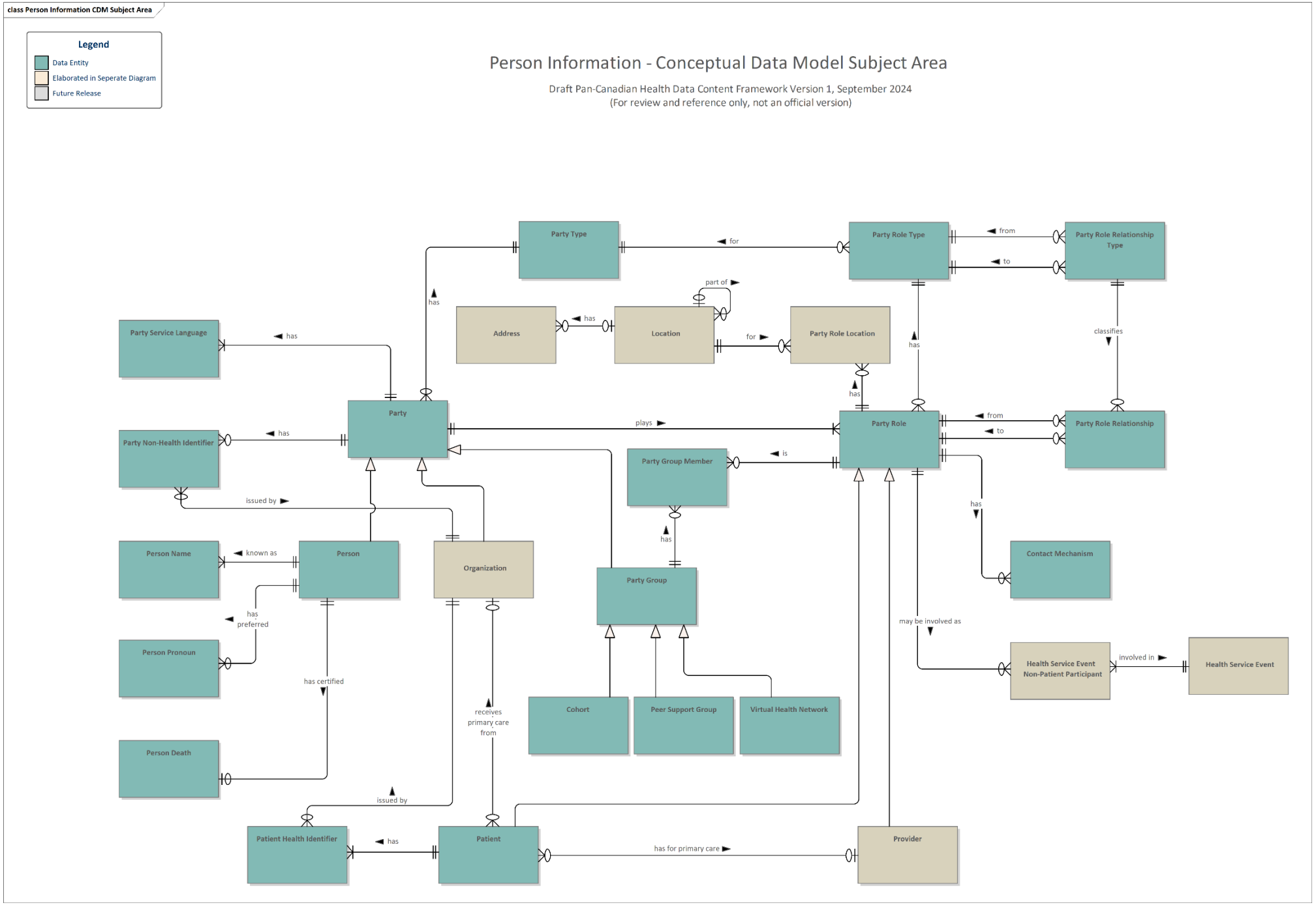
class Patient Encounter CDM Subject Area

Patient Encounter - Conceptual Data Model Subject Area

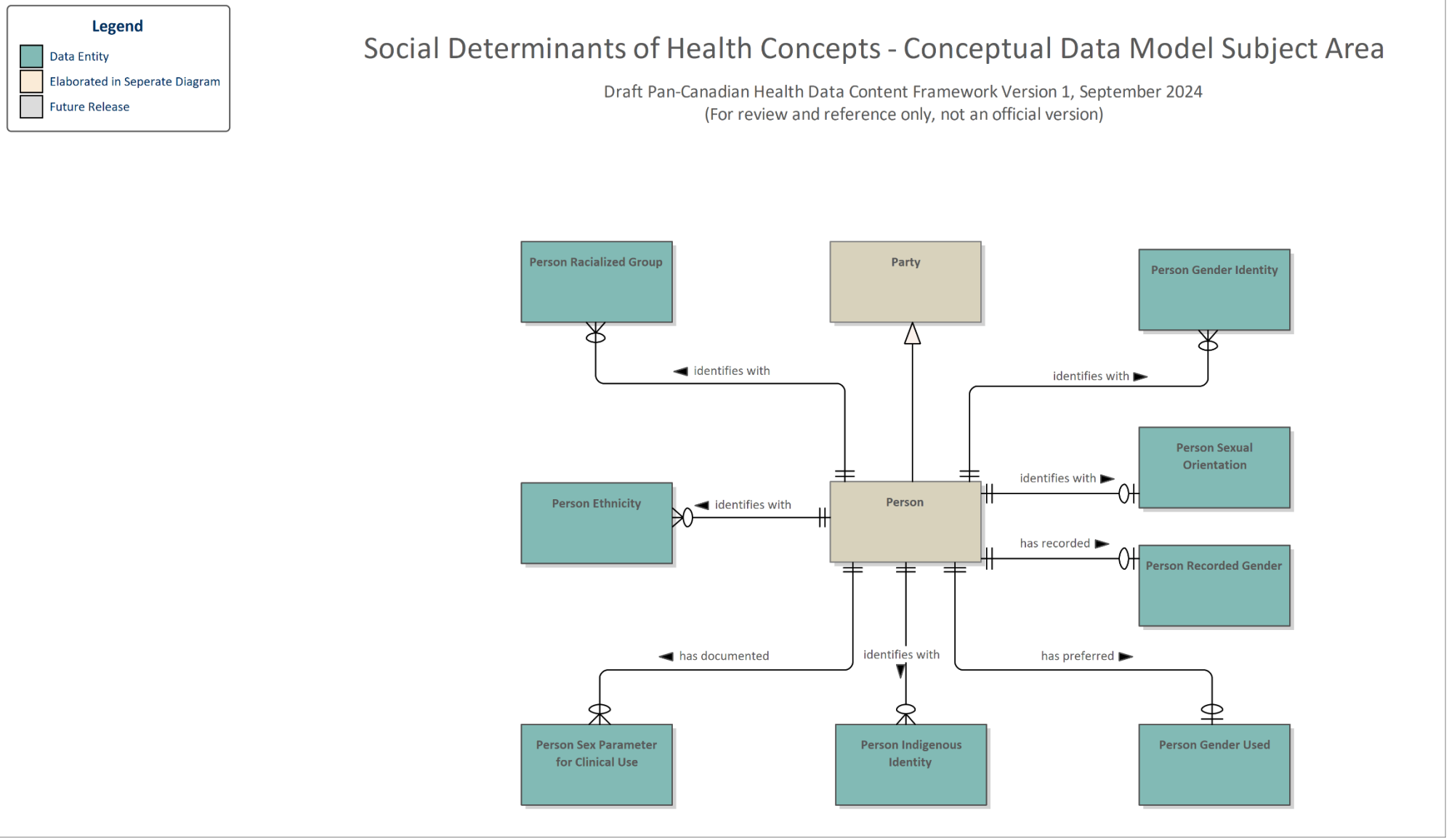
Draft Pan-Canadian Health Data Content Framework Version 1, September 2024
(For review and reference only, not an official version)

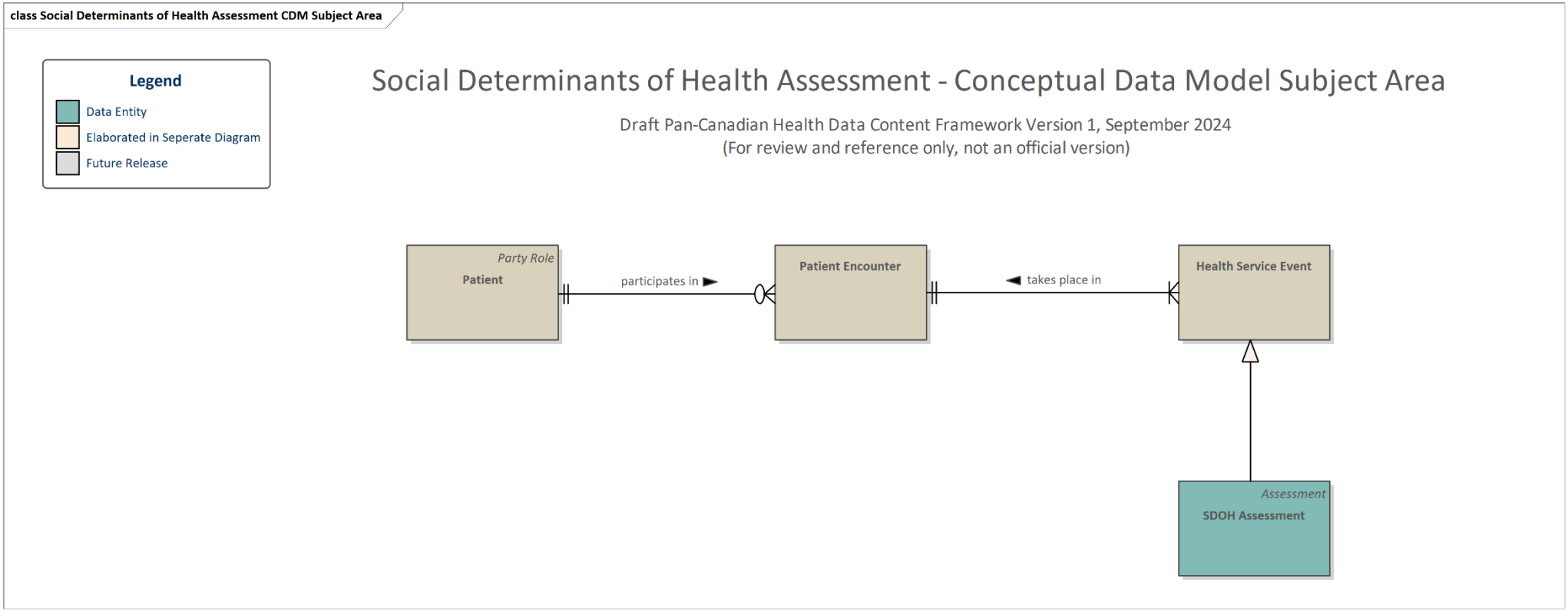


class Person Information CDM Subject Area



class Social Determinants of Health Concepts CDM Subject Area




class Social Determinants of Health Assessment CDM Subject Area
Legend
Data Entity
Elaborated in Seperate Diagram
Future Release
Social Determinants of Health Assessment - Conceptual Data Model Subject Area
Draft Pan-Canadian Health Data Content Framework Version 1, September 2024
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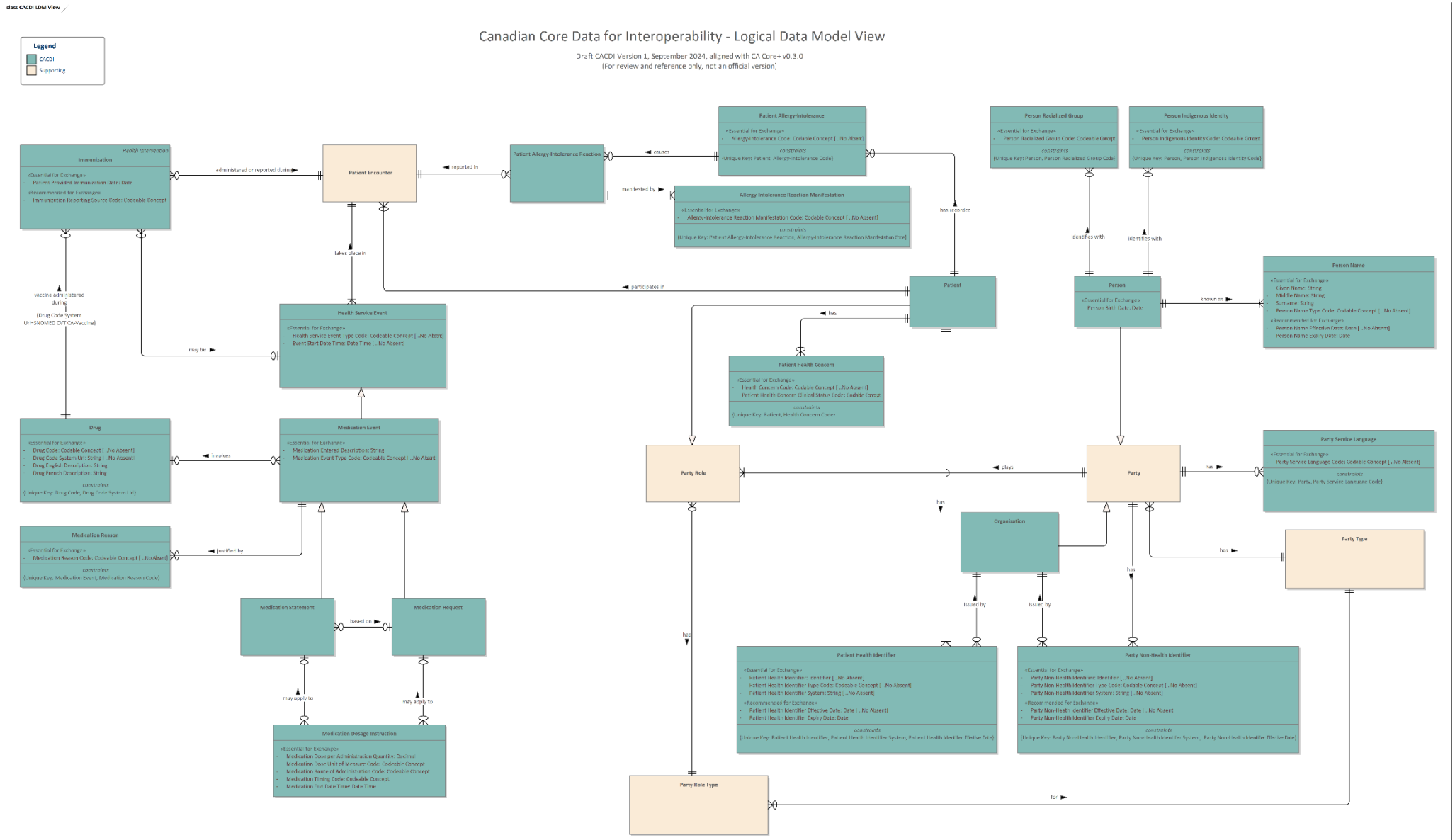
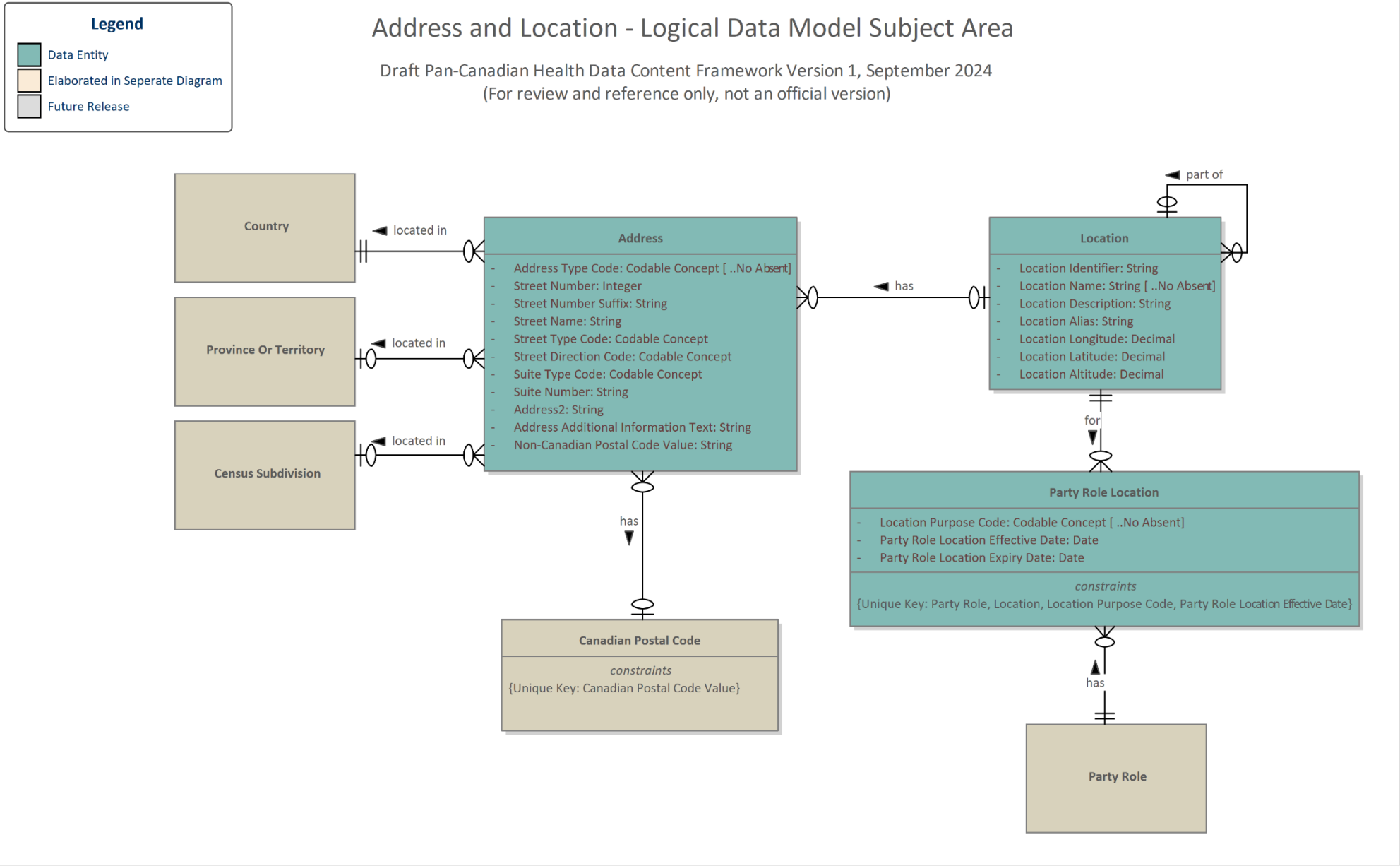
Party Role
Patient
participates in
Patient Encounter
takes place in
Health Service Event
Assessment
SDOH Assessment

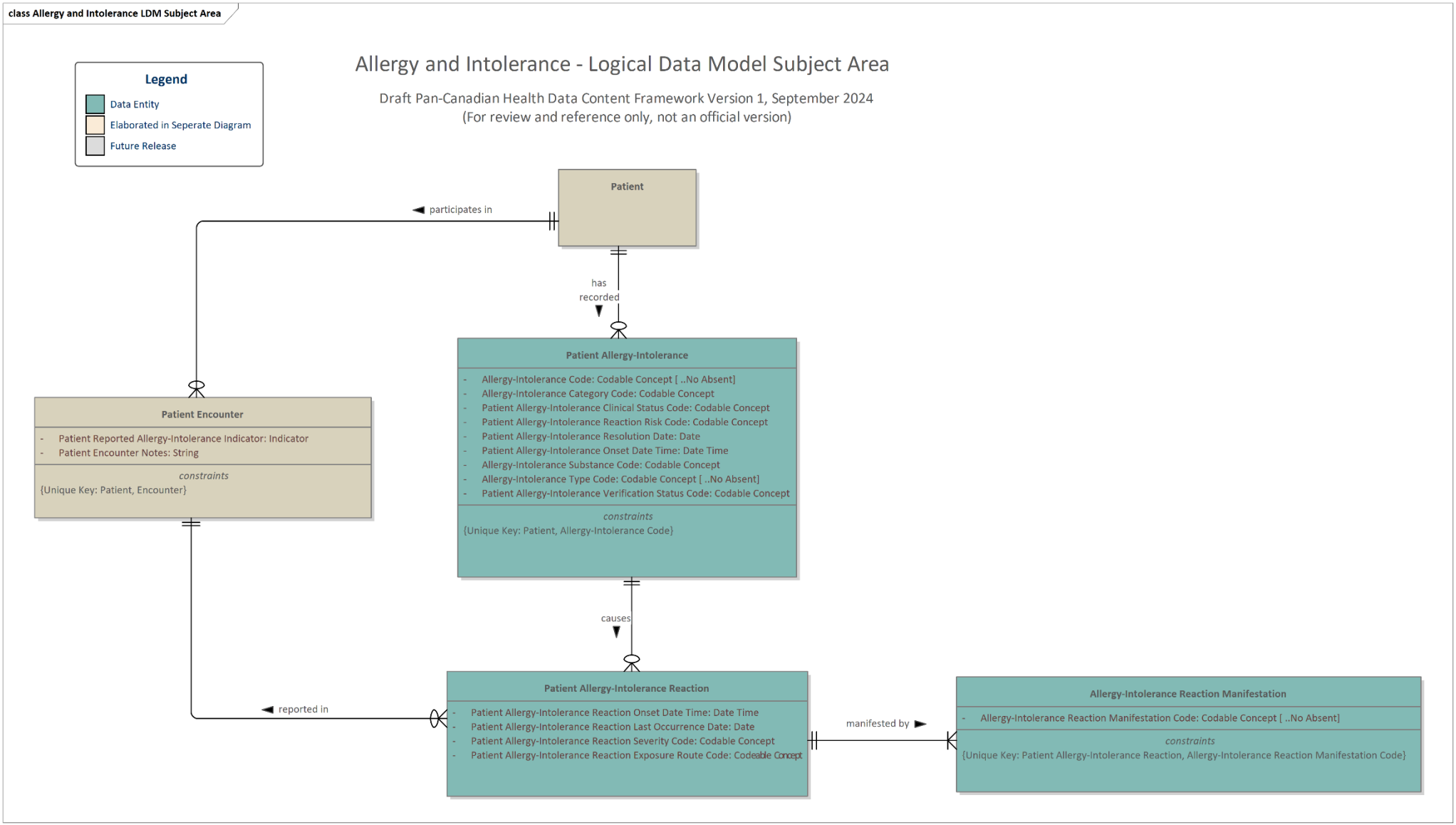
Appendix C: Static Logical Data Model

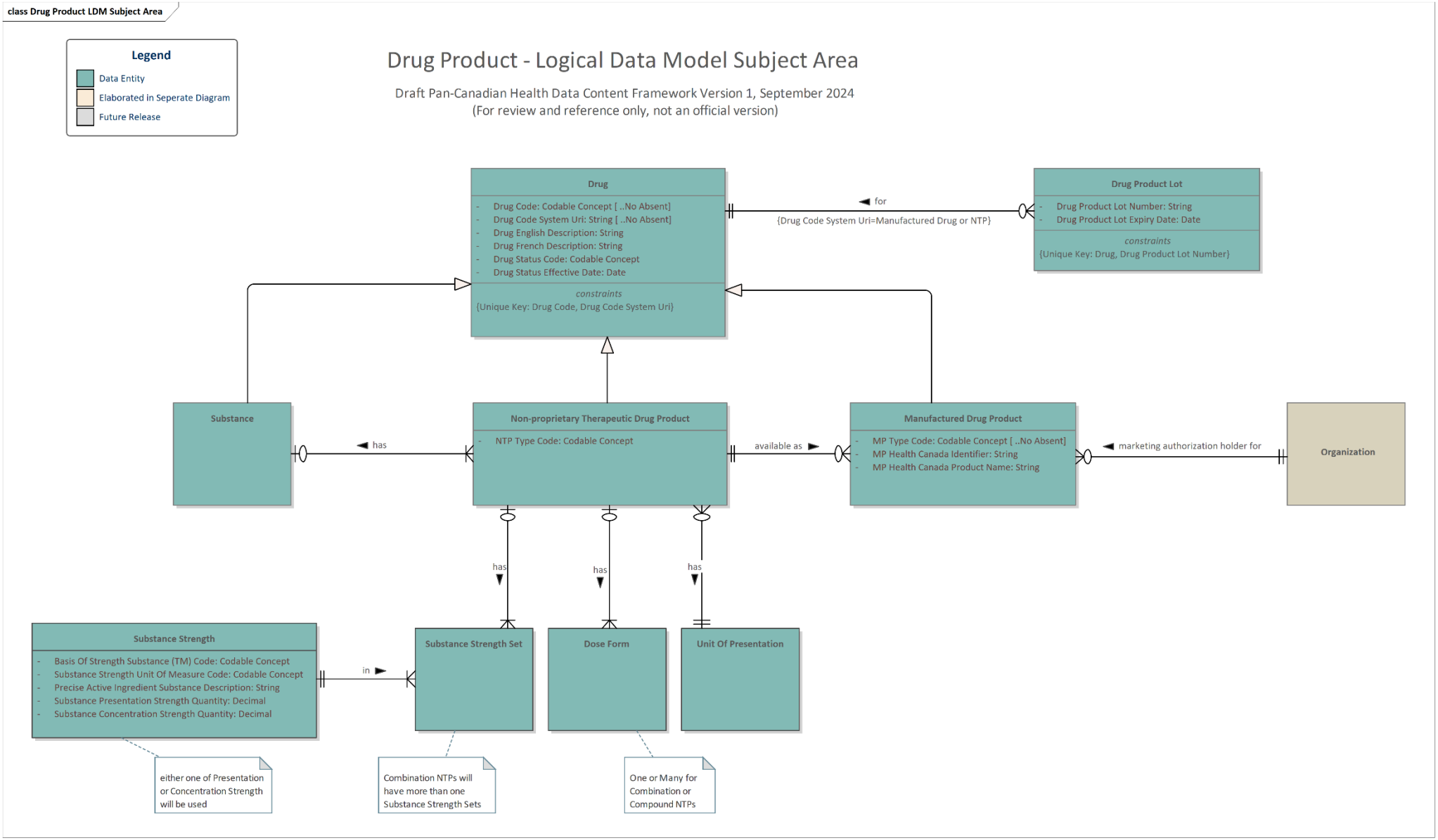
For details, definitions, and an interactable model, please refer to the zipped data model HTML file.

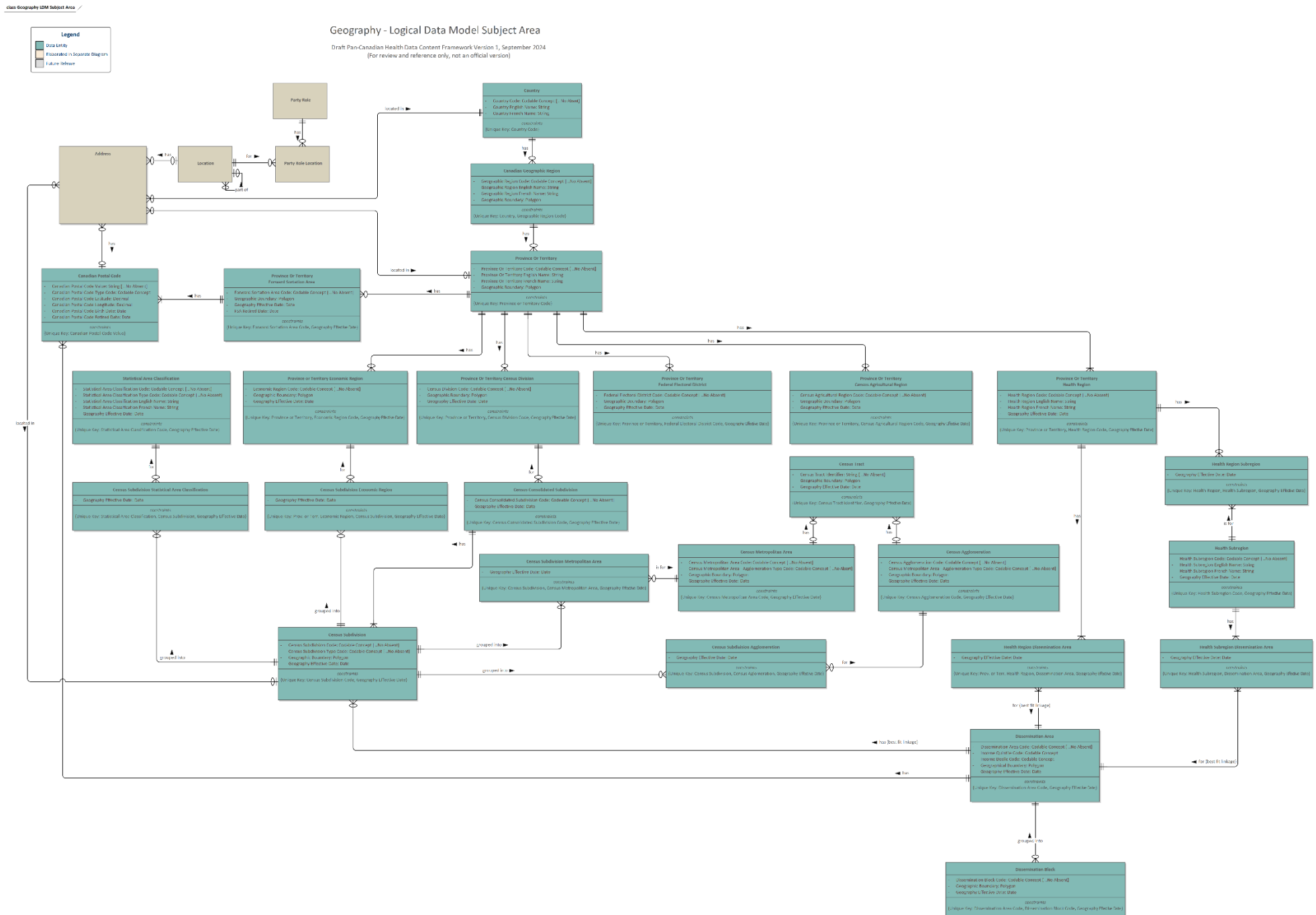


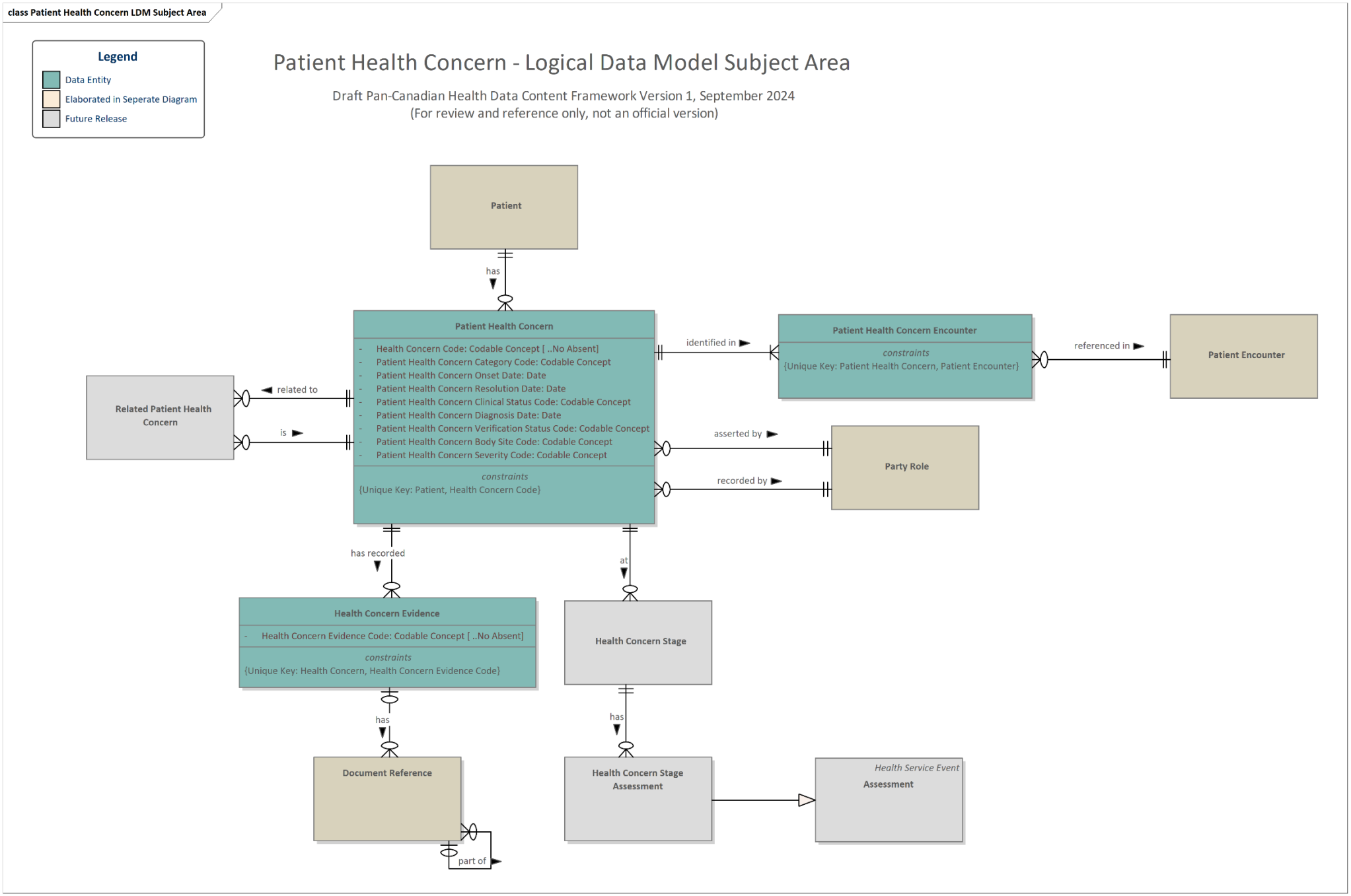
class Address and Location LDM Subject Area

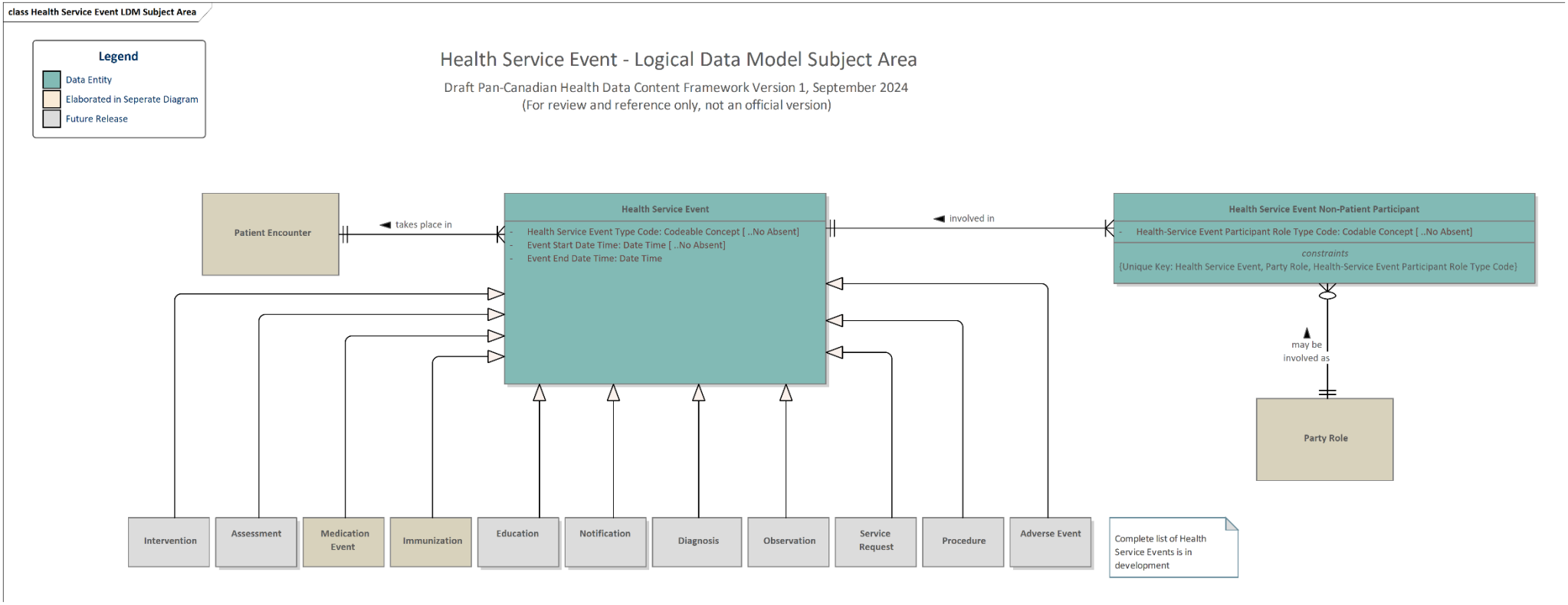


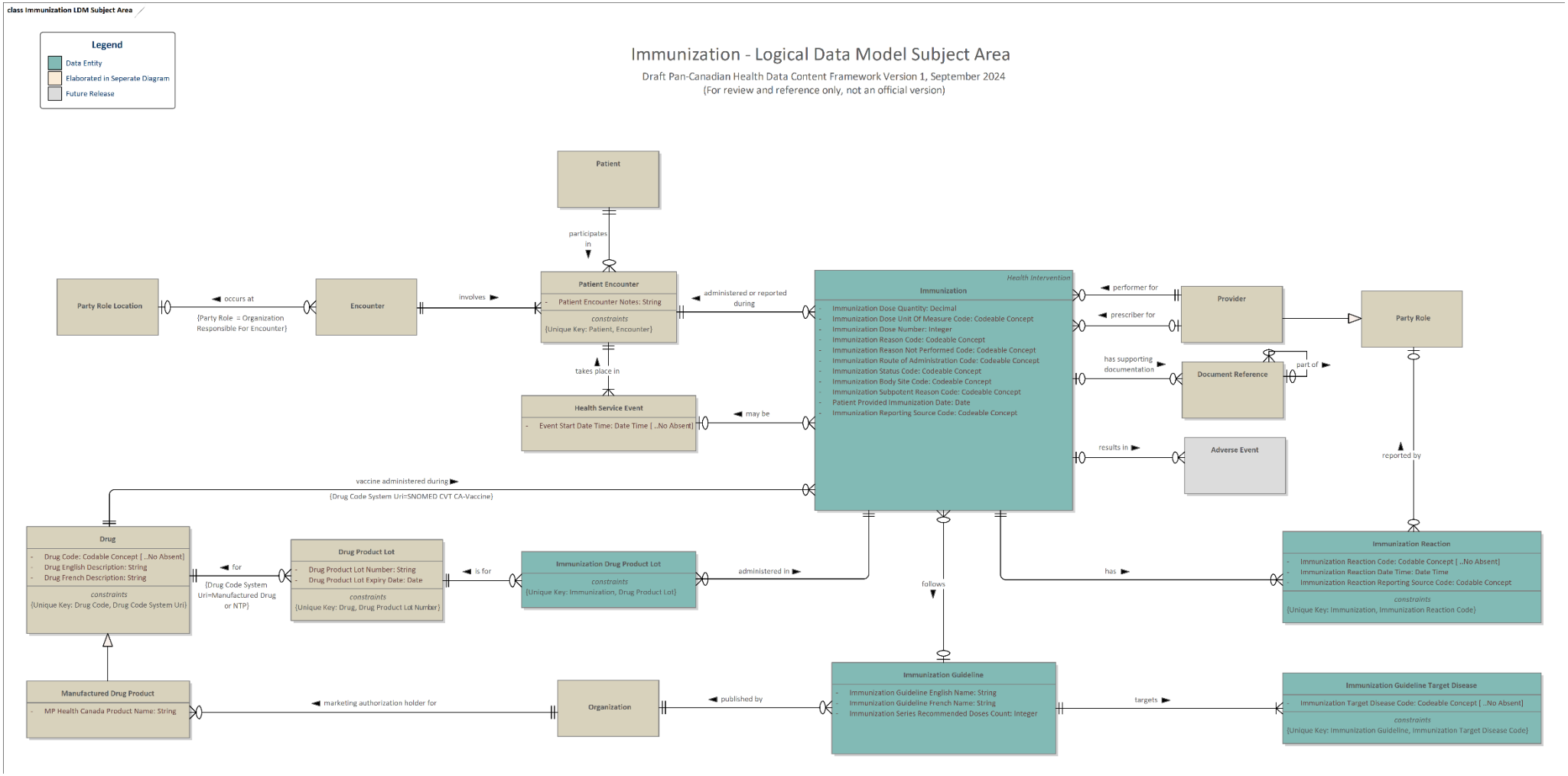

class Allergy and Intolerance LDM Subject Area
Allergy and Intolerance - Logical Data Model Subject Area
Draft Pan-Canadian Health Data Content Framework Version 1, September 2024
(For review and reference only, not an official version)
Legend
Data Entity
Elaborated in Seperate Diagram
Future Release
Patient
participates in
has recorded
Patient Allergy-Intolerance
- Allergy-Intolerance Code: Codable Concept [..No Absent]
- Allergy-Intolerance Category Code: Codable Concept
- Patient Allergy-Intolerance Clinical Status Code: Codable Concept
- Patient Allergy-Intolerance Reaction Risk Code: Codable Concept
- Patient Allergy-Intolerance Resolution Date: Date
- Patient Allergy-Intolerance Onset Date Time: Date Time
- Allergy-Intolerance Substance Code: Codable Concept
- Allergy-Intolerance Type Code: Codable Concept [..No Absent]
- Patient Allergy-Intolerance Verification Status Code: Codable Concept
constraints
{Unique Key: Patient, Allergy-Intolerance Code}
Patient Encounter
- Patient Reported Allergy-Intolerance Indicator: Indicator
- Patient Encounter Notes: String
constraints
{Unique Key: Patient, Encounter}
causes
reported in
Patient Allergy-Intolerance Reaction
- Patient Allergy-Intolerance Reaction Onset Date Time: Date Time
- Patient Allergy-Intolerance Reaction Last Occurrence Date: Date
- Patient Allergy-Intolerance Reaction Severity Code: Codable Concept
- Patient Allergy-Intolerance Reaction Exposure Route Code: Codeable Concept
manifested by
Allergy-Intolerance Reaction Manifestation
- Allergy-Intolerance Reaction Manifestation Code: Codable Concept [..No Absent]
constraints
{Unique Key: Patient Allergy-Intolerance Reaction, Allergy-Intolerance Reaction Manifestation Code}


class Drug Product LDM Subject Area
Legend
Data Entity
Elaborated in Seperate Diagram
Future Release
Drug Product - Logical Data Model Subject Area
Draft Pan-Canadian Health Data Content Framework Version 1, September 2024
(For review and reference only, not an official version)
Drug
- Drug Code: Codable Concept [..No Absent]
- Drug Code System Uri: String [..No Absent]
- Drug English Description: String
- Drug French Description: String
- Drug Status Code: Codable Concept
- Drug Status Effective Date: Date
constraints
{Unique Key: Drug Code, Drug Code System Uri}
for
{Drug Code System Uri=Manufactured Drug or NTP}
Drug Product Lot
- Drug Product Lot Number: String
- Drug Product Lot Expiry Date: Date
constraints
{Unique Key: Drug, Drug Product Lot Number}
Substance
has
Non-proprietary Therapeutic Drug Product
- NTP Type Code: Codable Concept
available as
Manufactured Drug Product
- MP Type Code: Codable Concept [..No Absent]
- MP Health Canada Identifier: String
- MP Health Canada Product Name: String
marketing authorization holder for
Organization
has
has
has
Substance Strength
- Basis Of Strength Substance (TM) Code: Codable Concept
- Substance Strength Unit Of Measure Code: Codable Concept
- Precise Active Ingredient Substance Description: String
- Substance Presentation Strength Quantity: Decimal
- Substance Concentration Strength Quantity: Decimal
in
Substance Strength Set
Dose Form
Unit Of Presentation
either one of Presentation or Concentration Strength will be used
Combination NTPs will have more than one Substance Strength Sets
One or Many for Combination or Compound NTPs


class Geography LDM Subject Area
Legend
Data Entity
Elaborated in Separate Diagram
Future Release
Geography - Logical Data Model Subject Area
Draft Pan-Canadian Health Data Content Framework Version 1, September 2024
(For review and reference only, not an official version)
Party Role
Country
Address
Location
Party Role Location
Canadian Geographic Region
Province Or Territory
Canadian Postal Code
Province Or Territory Forward Sortation Area
Statistical Area Classification
Province or Territory Economic Region
Province Or Territory Census Division
Province Or Territory Federal Electoral District
Province Or Territory Census Agricultural Region
Province Or Territory Health Region
Census Tract
Health Region Subregion
Census Subdivision Statistical Area Classification
Census Subdivision Economic Region
Census Consolidated Subdivision
Census Subdivision Metropolitan Area
Census Metropolitan Area
Census Agglomeration
Health Subregion
Census Subdivision
Census Subdivision Agglomeration
Health Region Dissemination Area
Health Subregion Dissemination Area
Dissemination Area
Dissemination Block
has
located in
for
part of
grouped into
is for
has (best fit linkage)
for (best fit linkage)


class Patient Health Concern LDM Subject Area
Legend
Data Entity
Elaborated in Seperate Diagram
Future Release
Patient Health Concern - Logical Data Model Subject Area
Draft Pan-Canadian Health Data Content Framework Version 1, September 2024
(For review and reference only, not an official version)
Patient
has
Patient Health Concern
- Health Concern Code: Codable Concept [..No Absent]
- Patient Health Concern Category Code: Codable Concept
- Patient Health Concern Onset Date: Date
- Patient Health Concern Resolution Date: Date
- Patient Health Concern Clinical Status Code: Codable Concept
- Patient Health Concern Diagnosis Date: Date
- Patient Health Concern Verification Status Code: Codable Concept
- Patient Health Concern Body Site Code: Codable Concept
- Patient Health Concern Severity Code: Codable Concept
constraints
{Unique Key: Patient, Health Concern Code}
identified in
Patient Health Concern Encounter
constraints
{Unique Key: Patient Health Concern, Patient Encounter}
referenced in
Patient Encounter
Related Patient Health Concern
related to
is
asserted by
recorded by
Party Role
has recorded
at
Health Concern Evidence
- Health Concern Evidence Code: Codable Concept [..No Absent]
constraints
{Unique Key: Health Concern, Health Concern Evidence Code}
Health Concern Stage
has
has
Document Reference
Health Concern Stage Assessment
Health Service Event
Assessment
part of


class Health Service Event LDM Subject Area
Legend
Data Entity
Elaborated in Seperate Diagram
Future Release
Health Service Event - Logical Data Model Subject Area
Draft Pan-Canadian Health Data Content Framework Version 1, September 2024
(For review and reference only, not an official version)
Patient Encounter
takes place in
Health Service Event
- Health Service Event Type Code: Codeable Concept [..No Absent]
- Event Start Date Time: Date Time [..No Absent]
- Event End Date Time: Date Time
involved in
Health Service Event Non-Patient Participant
- Health-Service Event Participant Role Type Code: Codable Concept [..No Absent]
constraints
{Unique Key: Health Service Event, Party Role, Health-Service Event Participant Role Type Code}
may be involved as
Party Role
Intervention
Assessment
Medication Event
Immunization
Education
Notification
Diagnosis
Observation
Service Request
Procedure
Adverse Event
Complete list of Health Service Events is in development


class Immunization LDM Subject Area
Legend
Data Entity
Elaborated in Seperate Diagram
Future Release
Immunization - Logical Data Model Subject Area
Draft Pan-Canadian Health Data Content Framework Version 1, September 2024
(For review and reference only, not an official version)
Patient
participates in
Party Role Location
occurs at
{Party Role = Organization Responsible For Encounter}
Encounter
involves
Patient Encounter
- Patient Encounter Notes: String
constraints
{Unique Key: Patient, Encounter}
administered or reported during
takes place in
Health Service Event
- Event Start Date Time: Date Time [..No Absent]
may be
Health Intervention
Immunization
- Immunization Dose Quantity: Decimal
- Immunization Dose Unit Of Measure Code: Codeable Concept
- Immunization Dose Number: Integer
- Immunization Reason Code: Codeable Concept
- Immunization Reason Not Performed Code: Codeable Concept
- Immunization Route of Administration Code: Codeable Concept
- Immunization Status Code: Codeable Concept
- Immunization Body Site Code: Codeable Concept
- Immunization Subpotent Reason Code: Codeable Concept
- Patient Provided Immunization Date: Date
- Immunization Reporting Source Code: Codeable Concept
performer for
prescriber for
Provider
Party Role
has supporting documentation
Document Reference
part of
results in
Adverse Event
reported by
vaccine administered during
{Drug Code System Uri=SNOMED CVT CA-Vaccine}
Drug
- Drug Code: Codable Concept [..No Absent]
- Drug English Description: String
- Drug French Description: String
constraints
{Unique Key: Drug Code, Drug Code System Uri}
for
{Drug Code System Uri=Manufactured Drug or NTP}
Drug Product Lot
- Drug Product Lot Number: String
- Drug Product Lot Expiry Date: Date
constraints
{Unique Key: Drug, Drug Product Lot Number}
is for
Immunization Drug Product Lot
constraints
{Unique Key: Immunization, Drug Product Lot}
administered in
follows
has
Immunization Reaction
- Immunization Reaction Code: Codable Concept [..No Absent]
- Immunization Reaction Date Time: Date Time
- Immunization Reaction Reporting Source Code: Codable Concept
constraints
{Unique Key: Immunization, Immunization Reaction Code}
Manufactured Drug Product
- MP Health Canada Product Name: String
marketing authorization holder for
Organization
published by
Immunization Guideline
- Immunization Guideline English Name: String
- Immunization Guideline French Name: String
- Immunization Series Recommended Doses Count: Integer
targets
Immunization Guideline Target Disease
- Immunization Target Disease Code: Codeable Concept [..No Absent]
constraints
{Unique Key: Immunization Guideline, Immunization Target Disease Code}

class Medication Request, Statement, Administration LDM Subject Area

Legend
- Data Entity
- Elaborated In Seperate Diagram
- Future Release

Medication Request, Statement, Administration - Logical Data Model Subject Area

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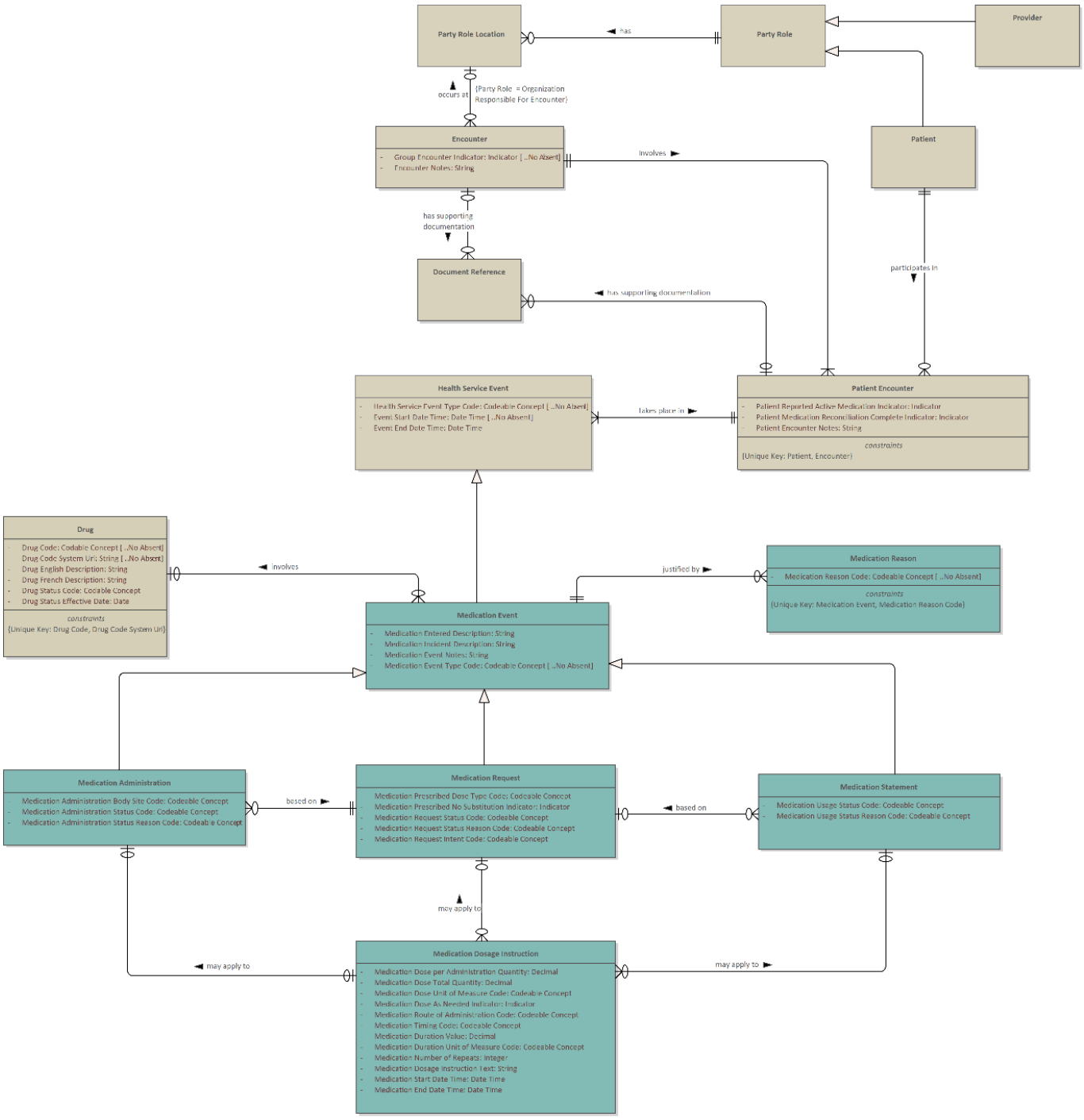
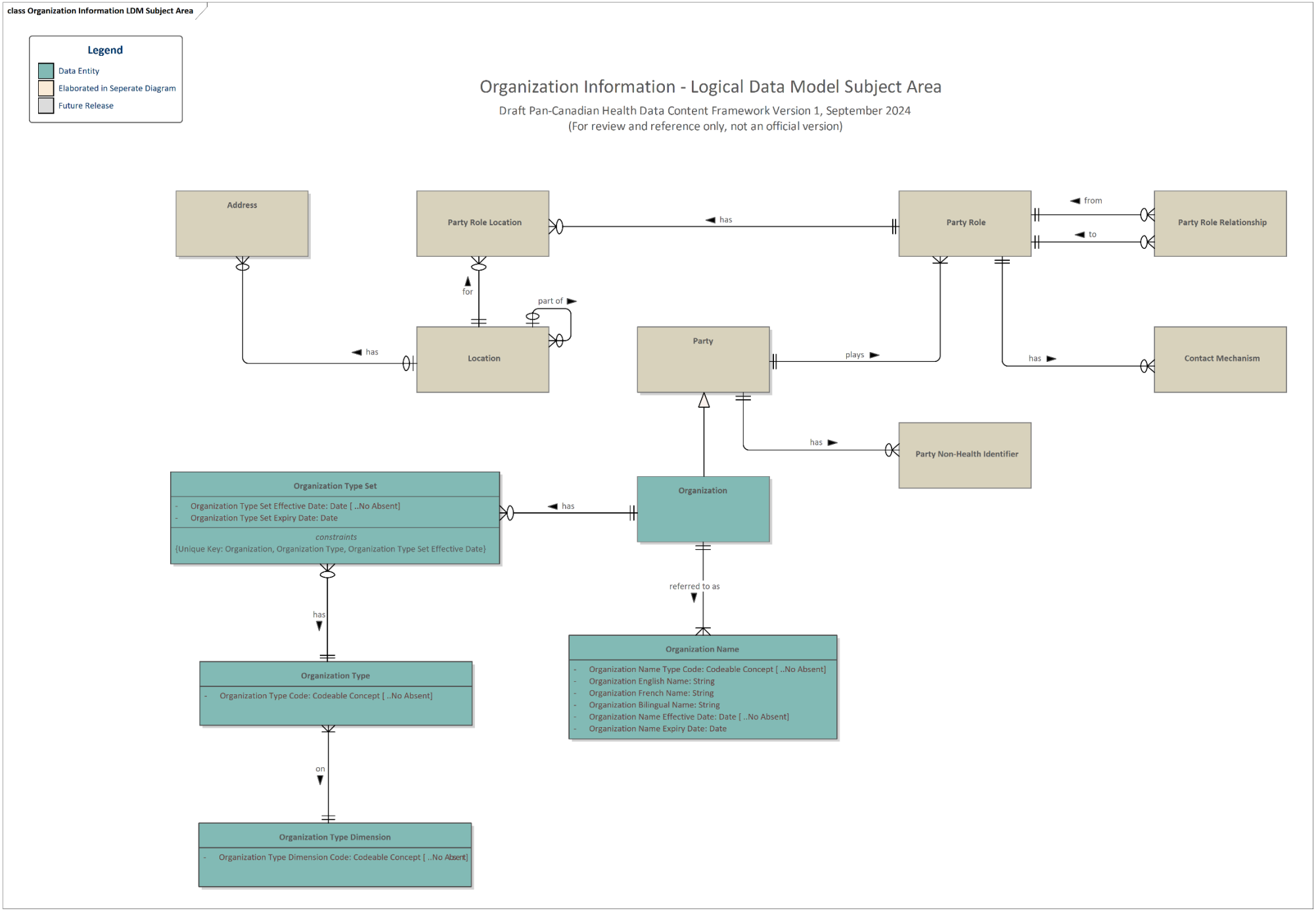
(For review and reference only, not an official version)




class Organization Information LDM Subject Area
Legend
Data Entity
Elaborated in Seperate Diagram
Future Release
Organization Information - Logical Data Model Subject Area
Draft Pan-Canadian Health Data Content Framework Version 1, September 2024
(For review and reference only, not an official version)
Address
Party Role Location
has
Party Role
from
to
Party Role Relationship
for
part of
has
Location
Party
plays
has
Contact Mechanism
has
Party Non-Health Identifier
Organization Type Set
- Organization Type Set Effective Date: Date [..No Absent]
- Organization Type Set Expiry Date: Date
constraints
{Unique Key: Organization, Organization Type, Organization Type Set Effective Date}
has
Organization
has
referred to as
Organization Type
- Organization Type Code: Codeable Concept [..No Absent]
Organization Name
- Organization Name Type Code: Codeable Concept [..No Absent]
- Organization English Name: String
- Organization French Name: String
- Organization Bilingual Name: String
- Organization Name Effective Date: Date [..No Absent]
- Organization Name Expiry Date: Date
on
Organization Type Dimension
- Organization Type Dimension Code: Codeable Concept [..No Absent]

class Patient Encounter LDM Subject Area

Patient Encounter - Logical Data Model Subject Area

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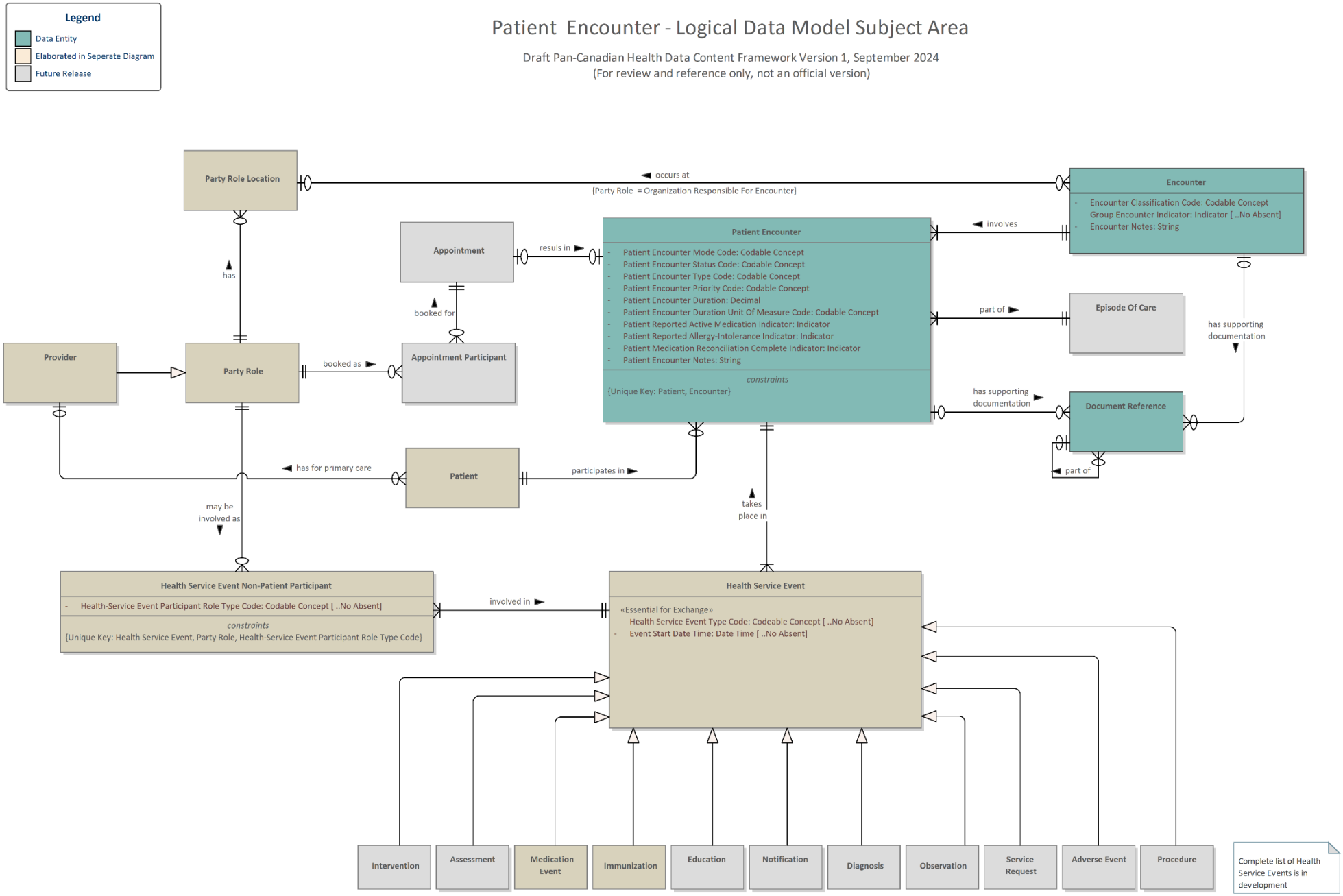
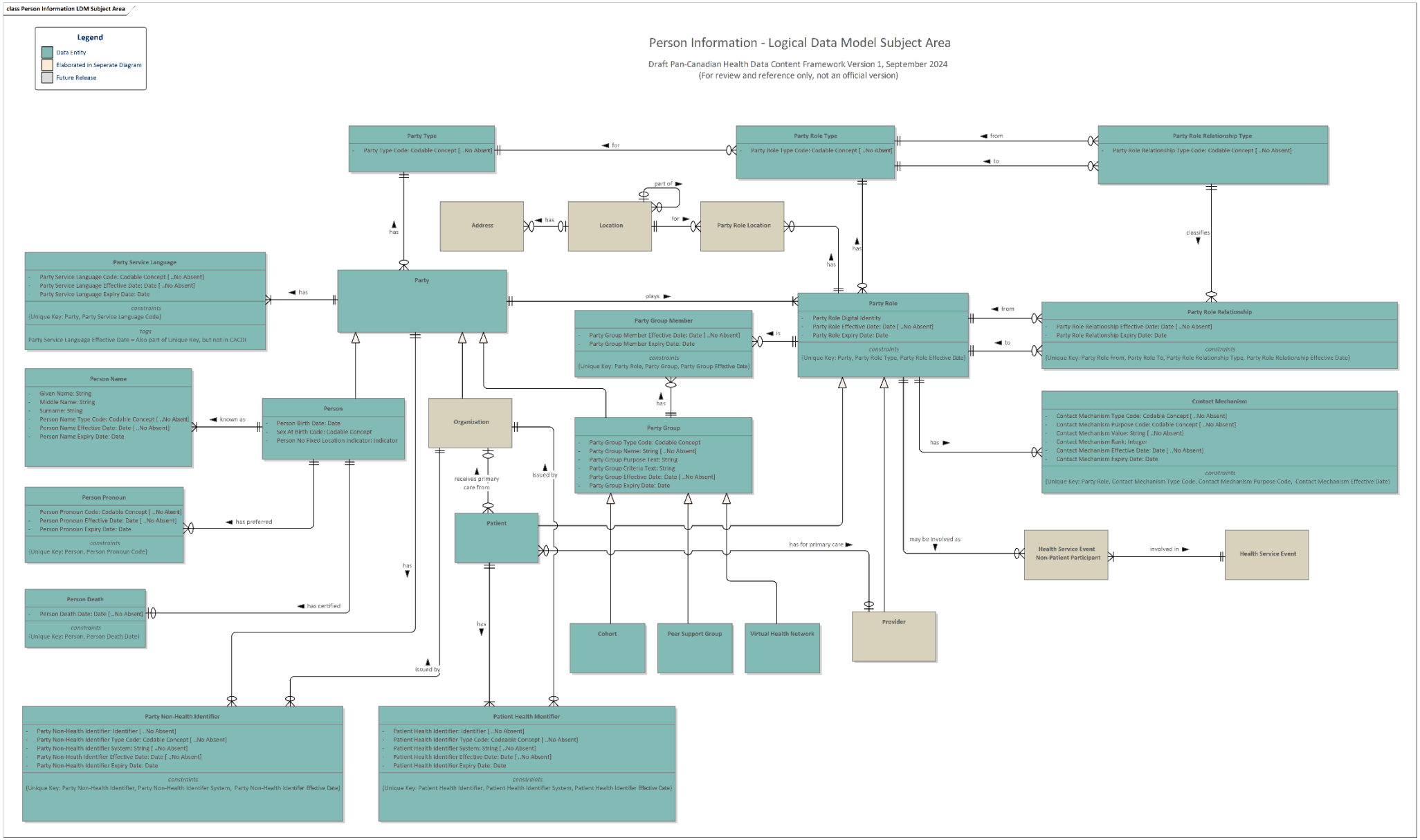
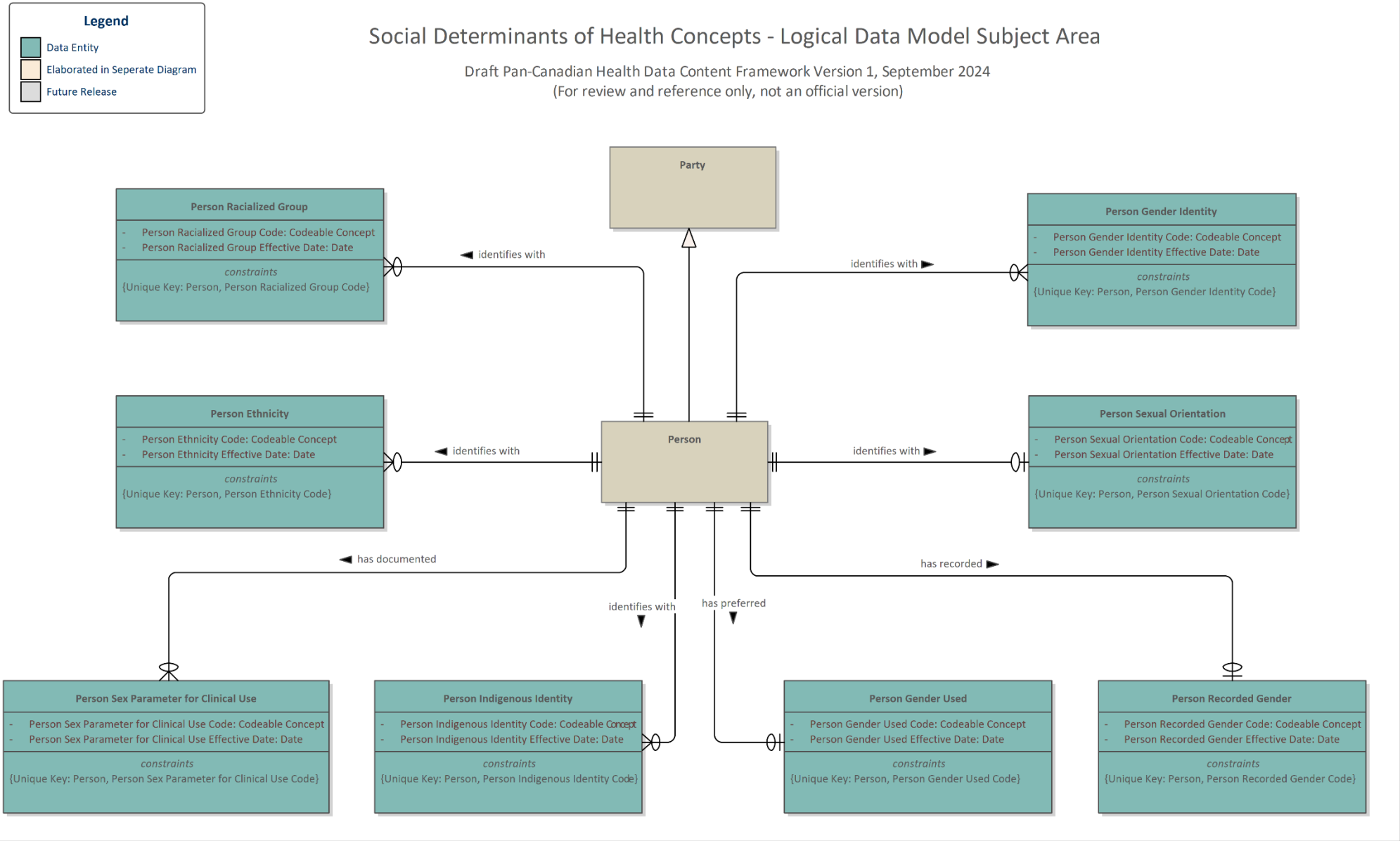
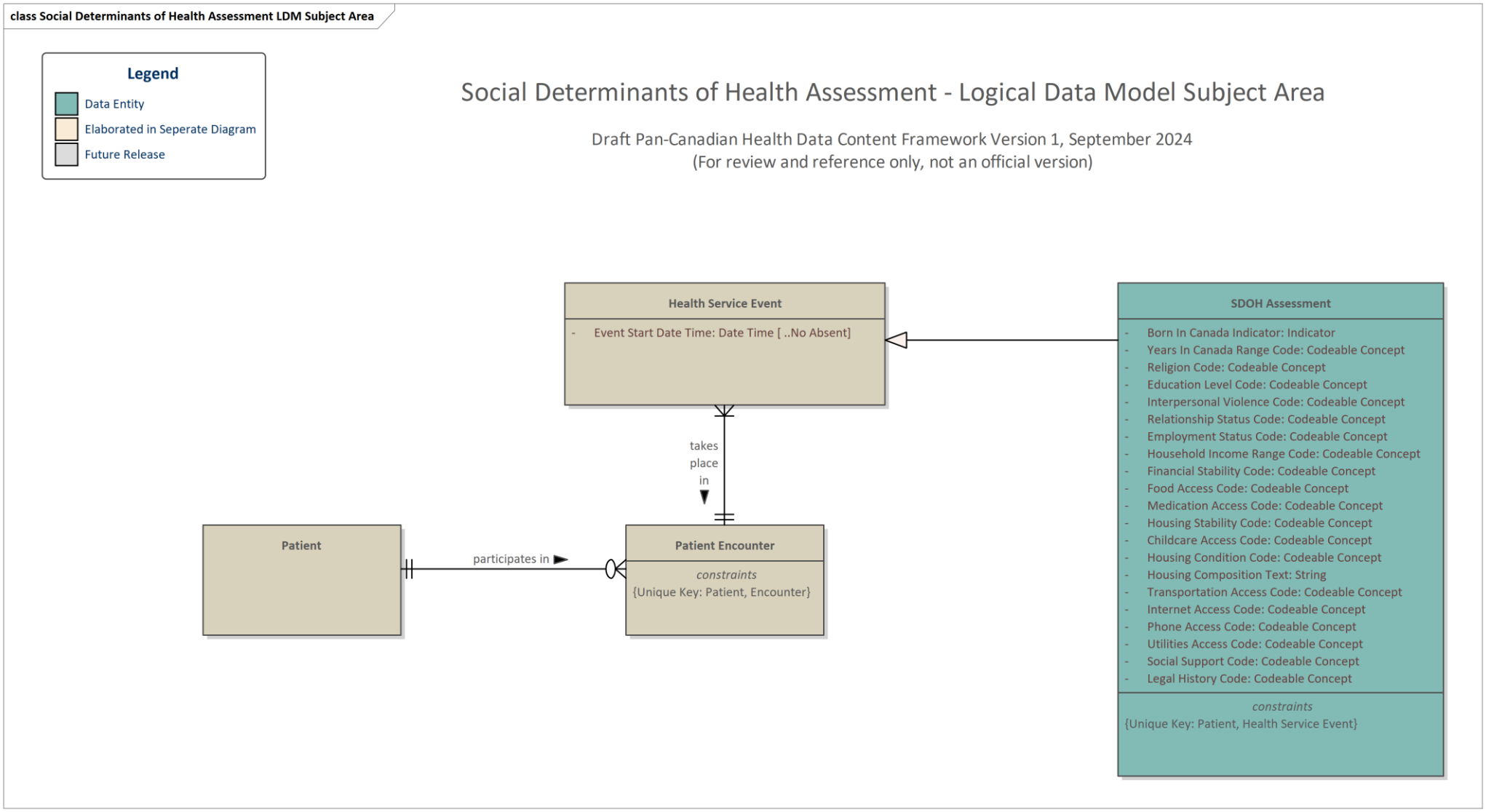
(For review and reference only, not an official version)




class Person Information LDM Subject Area
Legend
Data Entity
Elaborated in Seperate Diagram
Future Release
Person Information - Logical Data Model Subject Area
Draft Pan-Canadian Health Data Content Framework Version 1, September 2024
(For review and reference only, not an official version)
Party Type
Party Type Code: Codable Concept [..No Absent]
for
Party Role Type
Party Role Type Code: Codable Concept [..No Absent]
from
to
Party Role Relationship Type
Party Role Relationship Type Code: Codable Concept [..No Absent]
part of
Address
has
Location
for
Party Role Location
has
has
has
classifies
Party Service Language
Party Service Language Code: Codable Concept [..No Absent]
Party Service Language Effective Date: Date [..No Absent]
Party Service Language Expiry Date: Date
constraints
{Unique Key: Party, Party Service Language Code}
tags
Party Service Language Effective Date = Also part of Unique Key, but not in CACDI
has
Party
plays
Party Role
Party Role Digital Identity
Party Role Effective Date: Date [..No Absent]
Party Role Expiry Date: Date
constraints
{Unique Key: Party, Party Role Type, Party Role Effective Date}
from
to
Party Role Relationship
Party Role Relationship Effective Date: Date [..No Absent]
Party Role Relationship Expiry Date: Date
constraints
{Unique Key: Party Role From, Party Role To, Party Role Relationship Type, Party Role Relationship Effective Date}
Party Group Member
Party Group Member Effective Date: Date [..No Absent]
Party Group Member Expiry Date: Date
constraints
{Unique Key: Party Role, Party Group, Party Group Effective Date}
is
has
Person Name
Given Name: String
Middle Name: String
Surname: String
Person Name Type Code: Codable Concept [..No Absent]
Person Name Effective Date: Date [..No Absent]
Person Name Expiry Date: Date
known as
Person
Person Birth Date: Date
Sex At Birth Code: Codable Concept
Person No Fixed Location Indicator: Indicator
Organization
Party Group
Party Group Type Code: Codable Concept
Party Group Name: String [..No Absent]
Party Group Purpose Text: String
Party Group Criteria Text: String
Party Group Effective Date: Date [..No Absent]
Party Group Expiry Date: Date
Contact Mechanism
Contact Mechanism Type Code: Codable Concept [..No Absent]
Contact Mechanism Purpose Code: Codable Concept [..No Absent]
Contact Mechanism Value: String [..No Absent]
Contact Mechanism Rank: Integer
Contact Mechanism Effective Date: Date [..No Absent]
Contact Mechanism Expiry Date: Date
constraints
{Unique Key: Party Role, Contact Mechanism Type Code, Contact Mechanism Purpose Code, Contact Mechanism Effective Date}
has
Person Pronoun
Person Pronoun Code: Codable Concept [..No Absent]
Person Pronoun Effective Date: Date [..No Absent]
Person Pronoun Expiry Date: Date
constraints
{Unique Key: Person, Person Pronoun Code}
has preferred
receives primary care from
issued by
Patient
has for primary care
may be involved as
Health Service Event Non-Patient Participant
involved in
Health Service Event
has
Person Death
Person Death Date: Date [..No Absent]
constraints
{Unique Key: Person, Person Death Date}
has certified
has
Cohort
Peer Support Group
Virtual Health Network
Provider
issued by
Party Non-Health Identifier
Party Non-Health Identifier: Identifier [..No Absent]
Party Non-Health Identifier Type Code: Codable Concept [..No Absent]
Party Non-Health Identifier System: String [..No Absent]
Party Non-Heath Identifier Effective Date: Date [..No Absent]
Party Non-Heath Identifier Expiry Date: Date
constraints
{Unique Key: Party Non-Health Identifier, Party Non-Health Identifier System, Party Non-Health Identifier Effective Date}
Patient Health Identifier
Patient Health Identifier: Identifier [..No Absent]
Patient Health Identifier Type Code: Codeable Concept [..No Absent]
Patient Health Identifier System: String [..No Absent]
Patient Health Identifier Effective Date: Date [..No Absent]
Patient Health Identifier Expiry Date: Date
constraints
{Unique Key: Patient Health Identifier, Patient Health Identifier System, Patient Health Identifier Effective Date}

class Social Determinants of Health Concepts LDM Subject Area




class Social Determinants of Health Assessment LDM Subject Area
Legend
Data Entity
Elaborated in Seperate Diagram
Future Release
Social Determinants of Health Assessment - Logical Data Model Subject Area
Draft Pan-Canadian Health Data Content Framework Version 1, September 2024
(For review and reference only, not an official version)
Health Service Event
- Event Start Date Time: Date Time [..No Absent]
takes place in
Patient
participates in
Patient Encounter
constraints
{Unique Key: Patient, Encounter}
SDOH Assessment
- Born In Canada Indicator: Indicator
- Years In Canada Range Code: Codeable Concept
- Religion Code: Codeable Concept
- Education Level Code: Codeable Concept
- Interpersonal Violence Code: Codeable Concept
- Relationship Status Code: Codeable Concept
- Employment Status Code: Codeable Concept
- Household Income Range Code: Codeable Concept
- Financial Stability Code: Codeable Concept
- Food Access Code: Codeable Concept
- Medication Access Code: Codeable Concept
- Housing Stability Code: Codeable Concept
- Childcare Access Code: Codeable Concept
- Housing Condition Code: Codeable Concept
- Housing Composition Text: String
- Transportation Access Code: Codeable Concept
- Internet Access Code: Codeable Concept
- Phone Access Code: Codeable Concept
- Utilities Access Code: Codeable Concept
- Social Support Code: Codeable Concept
- Legal History Code: Codeable Concept
constraints
{Unique Key: Patient, Health Service Event}

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