Archetype Extraction Report

1. **Definition of openEHR Archetypes**

openEHR archetypes are **reusable, structured models** that define the **clinical and technical meaning of health data**. They provide a standardized way to represent healthcare concepts, ensuring interoperability across different electronic health record (**EHR**) systems.

Each archetype represents a **single clinical concept** (e.g., Blood Pressure, Medication Order) and includes:

* **Constraints** (rules on how the data should be structured)
* **Terminology bindings** (links to external standards like SNOMED CT)
* **Metadata** (information about the archetype’s purpose, usage, and lifecycle state)

**Key Components of an Archetype**

1. **Definition** → Specifies structure, including elements and data types.
2. **Ontology** → Contains coded terms (atXXXX) that define key elements.
3. **Description** → Stores metadata such as purpose, intended use, and lifecycle state.

**2. Types of openEHR Archetypes**

openEHR archetypes are categorized based on their role in structuring EHR data.

| **Archetype Type** | **Purpose** |
| --- | --- |
| **Composition** | Represents entire clinical records (e.g., Encounter, Discharge Summary). |
| **Section** | Organizes data within a Composition (e.g., History, Diagnosis, Medications). |
| **Entry** | Defines structured clinical data (e.g., Observations, Evaluations, Instructions). |
| **Cluster** | Groups reusable substructures (e.g., Lab Test Panels, Blood Pressure Measurement). |
| **Demographic** | Represents patient-related data (e.g., Identity, Organizations, Roles). |

**Entry Archetype Subtypes**

1. **Observation Entry** → Captures measured values (e.g., Blood Pressure, Heart Rate).
2. **Evaluation Entry** → Represents clinical judgments (e.g., Diagnosis, Risk Assessment).
3. **Instruction Entry** → Records clinical orders (e.g., Medication Prescription).
4. **Action Entry** → Logs actions performed (e.g., Medication Administration).
5. **Administrative Entry** → Stores administrative details (e.g., Admission Notes).

**3. Relationship Between Archetypes and Templates**

* **Templates** are built from multiple **archetypes** to model **use-case-specific data sets**.
* A template defines **how different archetypes work together**.
* Example: A **Hospital Admission Template** may include:
  + A **Composition Archetype** for the encounter.
  + A **Section Archetype** for medical history.
  + Multiple **Entry Archetypes** for symptoms, medications, and procedures.

**4. Document Structure**

This dataset is divided into separate documents for each **archetype category** (Composition, Section, Entry, Cluster, Demographic). Each document contains:

* **Archetype ID** → Unique identifier of the archetype.
* **Lifecycle Status** → Indicates if the archetype is published, draft, or obsolete.
* **Category** → The archetype type (Composition, Section, Entry, etc.).
* **Languages** → The available translations for this archetype.
* **Purpose** → The intended clinical or administrative use.
* **Use** → How the archetype should be applied.
* **Misuse** → Information about incorrect applications.
* **Concepts (Coded Terms)** → Key elements of the archetype, linked by terminology codes (atXXXX).

**Concept Structure in an Archetype**

Each concept follows this structure:

ontology::definition - description

Example: at0051::Maximum dose - The highest allowed dose for a medication

Concepts allow **standardized data interpretation** across EHR systems.

**5. Expected Graph Database Structure**

This document should be **converted into a graph database** where:

1. **Nodes ((:Archetype))** represent each archetype.
2. **Nodes ((:Concept))** represent coded terms (atXXXX).
3. **Relationships ((:Archetype)-[:HAS\_CONCEPT]->(:Concept))** link archetypes to their concepts.
4. **Nodes ((:Category))** represent archetype types (Composition, Section, Entry, etc.).
5. **Relationships ((:Archetype)-[:BELONGS\_TO]->(:Category))** categorize archetypes.

**6. List of Archetypes**

Here is a list of all the Archetypes of each category: