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.

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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).

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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.

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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.

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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.

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6. List of Archetypes

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