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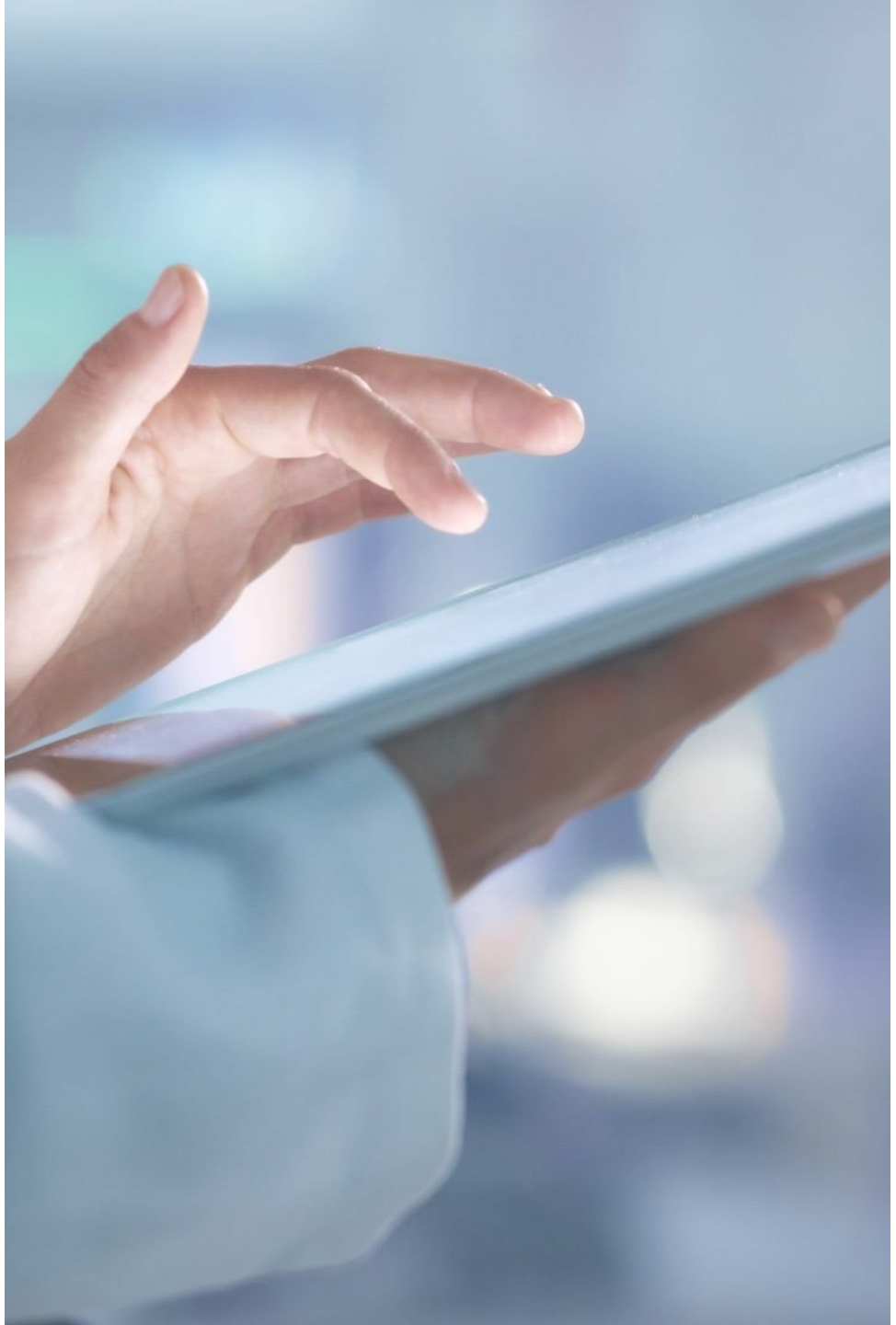
Episode of Care

Data Model of the Episode-Oriented Medical Record according to Solon in openEHR

19.01.2026, Jean-Pierre Messerli



Modelling Episodes in openEHR

1. Step-by-step introduction to episode-oriented medical record
2. Logical data model
3. Modelling in openEHR

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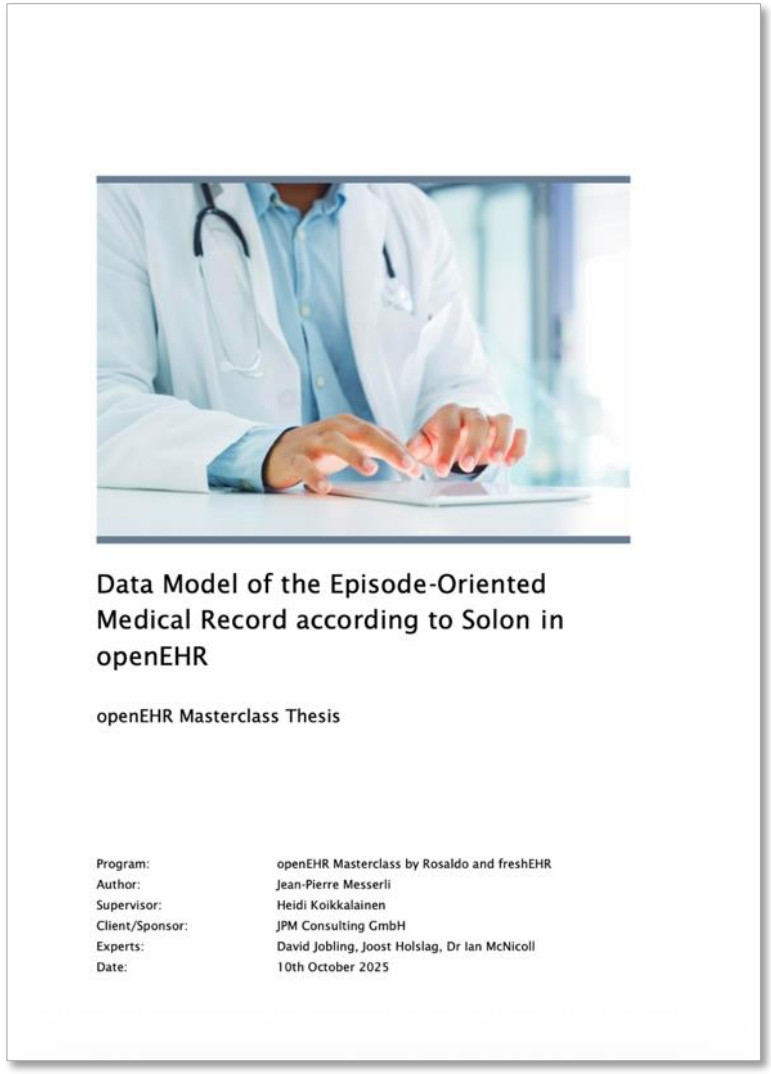
openEHR Masterclass Thesis



Data Model of the Episode-Oriented Medical Record according to Solon in openEHR

openEHR Masterclass Thesis

Program:	openEHR Masterclass by Rosaldo and freshEHR
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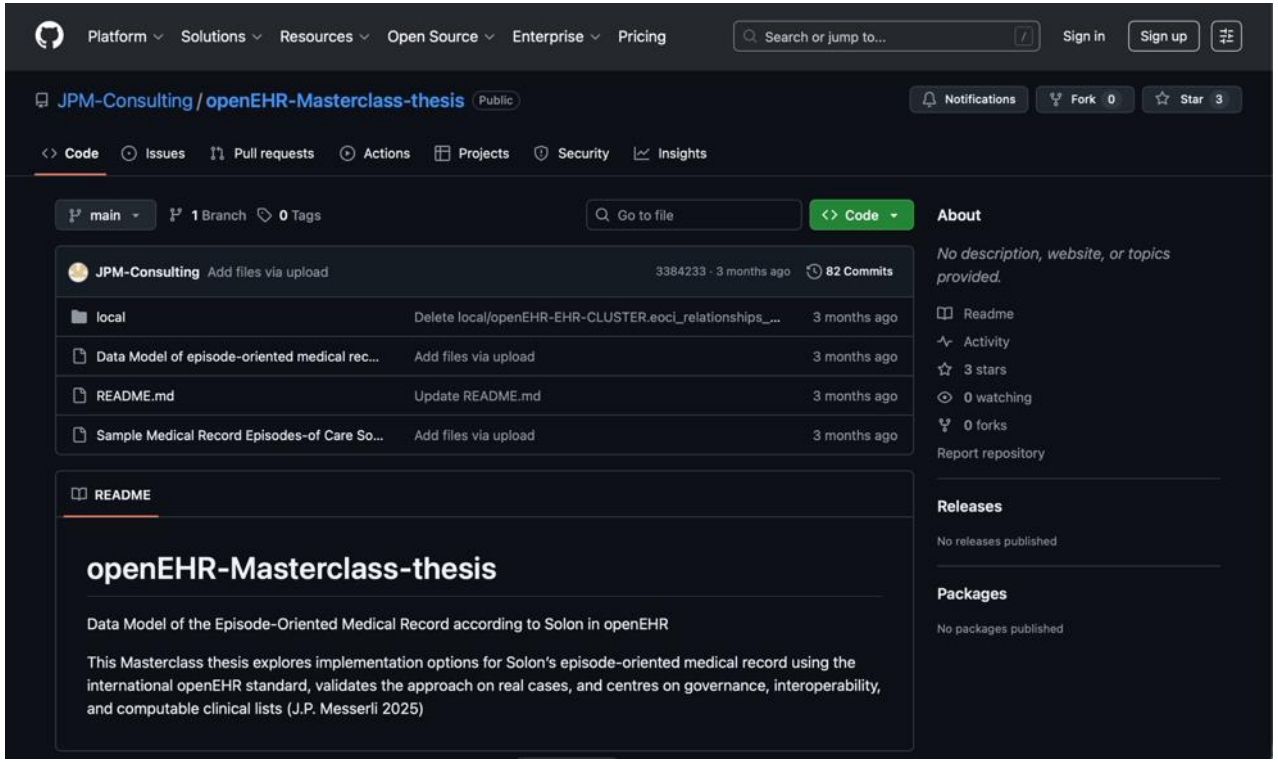
Date:	10th October 2025

https://jpm-consulting.ch/media/files/data-model-of-episode-oriented-medical-record-in-openehr.pdf

https://github.com/JPM-Consulting/openEHR-Masterclass-thesis

More about EMR: https://jpm-consulting.ch/download.php



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Disclosure – Potential conflicts of interest

Jean-Pierre Messerli

Physician and Medical Informatics Specialist

Professional situation	Senior Consultant and Partner at JPM Consulting GmbH
Consulting relationships	Various including Swisscom (Switzerland) AG, HCI Solutions AG, Healthbrain GmbH, Aprioris AG
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Shares, Business Interests	BEKB AG, Owner JPM Consulting GmbH
Memberships	– FMH - Swiss Medical Association – VSAO - Association of Residents and Senior Physicians – HL7 Switzerland, Founding Member – IHE Switzerland, Founding Member – openEHR International and Switzerland – FMC - Forum Managed Care – IG eMediplan - Electronic Medication Plan – SGMI - Swiss Society for Medical Informatics – Co-Founder of VSFM

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Episode of Care – Introduction

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Mrs Emma Brown, 62-year-old

Mrs Emma Brown

Mrs Brown is travelling by train from London to Oxford

Mrs Emma Brown boarding the train

Mrs Brown meets Mr Frank Jones

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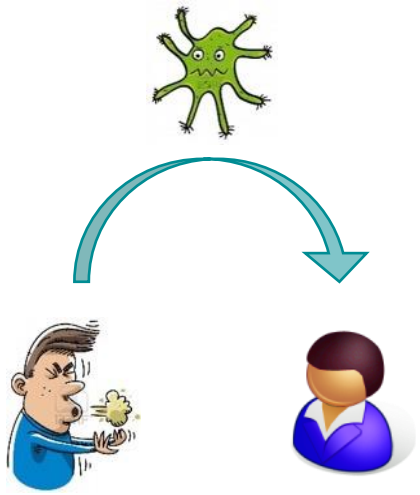
Images created by ChatGPT

Mrs Brown catches the flu



Exposure on the train
(nearby passenger sneezes)

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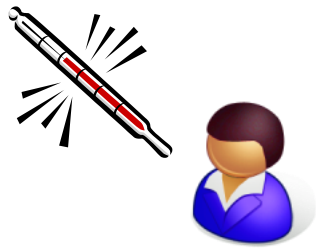
Mrs Brown falls ill



Mrs Brown falls ill

Ms Brown visits her general practitioner (GP)

Dr Smith

Mrs Brown

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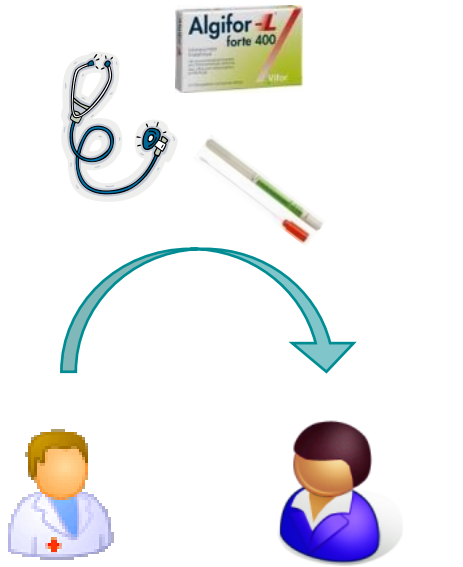
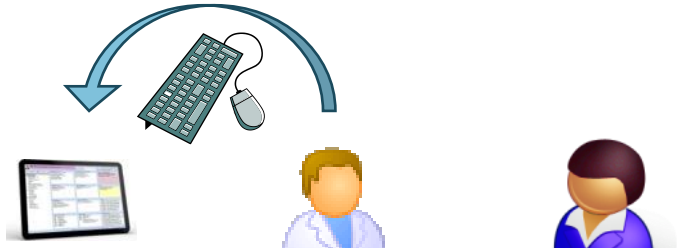
Dr Smith takes Ms Brown's history, examines her and initiates treatment



Dr Smith documents everything in Mrs Brown's patient record



Mrs Brown visits her GP again three days later

Dr Smith Mrs Brown

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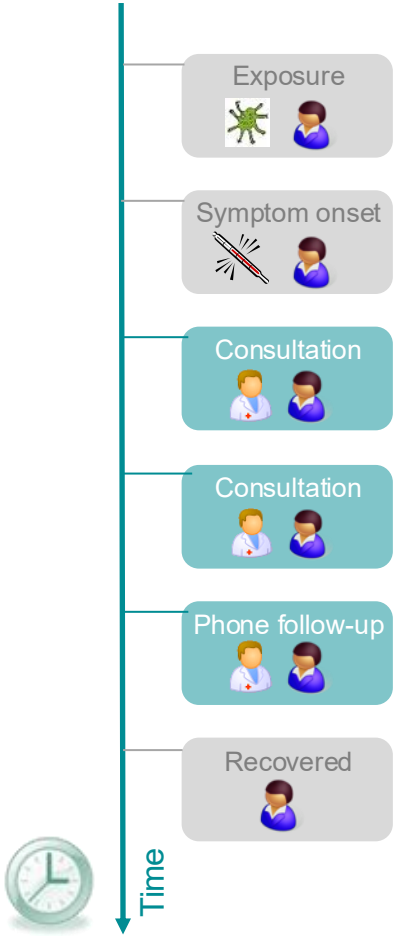
Mrs Brown reports improvement by phone and is fully recovered after 8 days

Mrs Brown

Mrs Brown had one health problem and three care encounter with her doctor

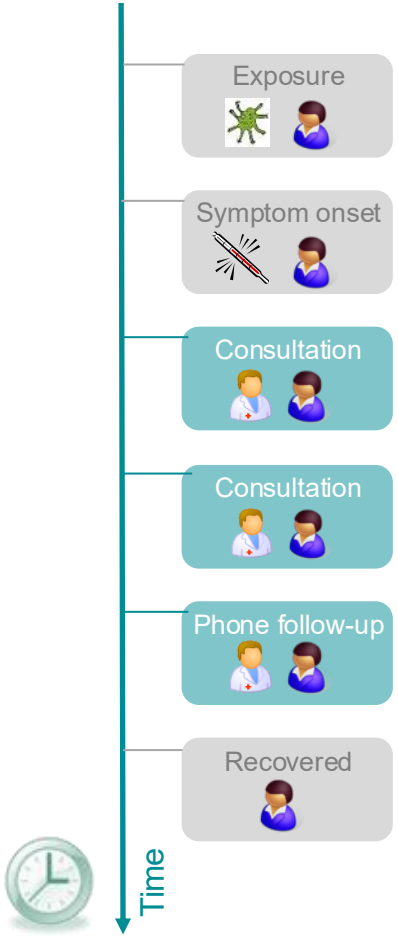


1 health problem

2 consultations with Dr Smith

1 telephone follow-up with Dr Smith

How can this care pathway be structured?



structuring options ?

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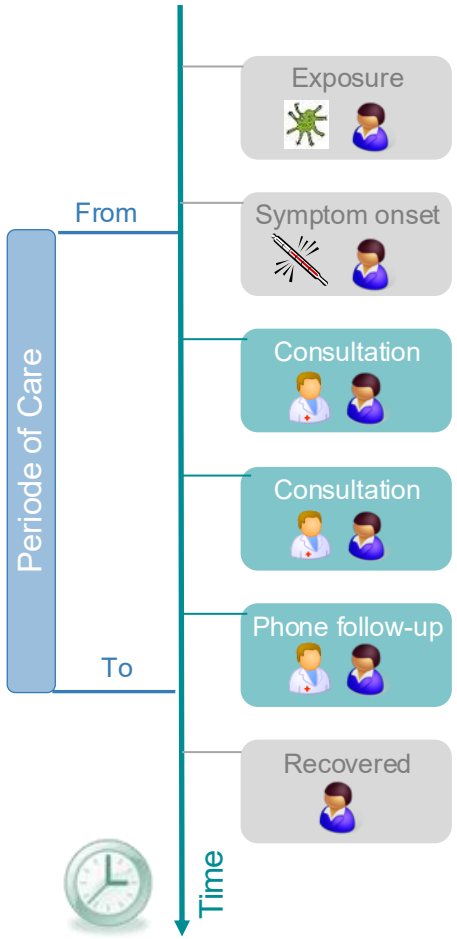
The temporal dimension is the period of care

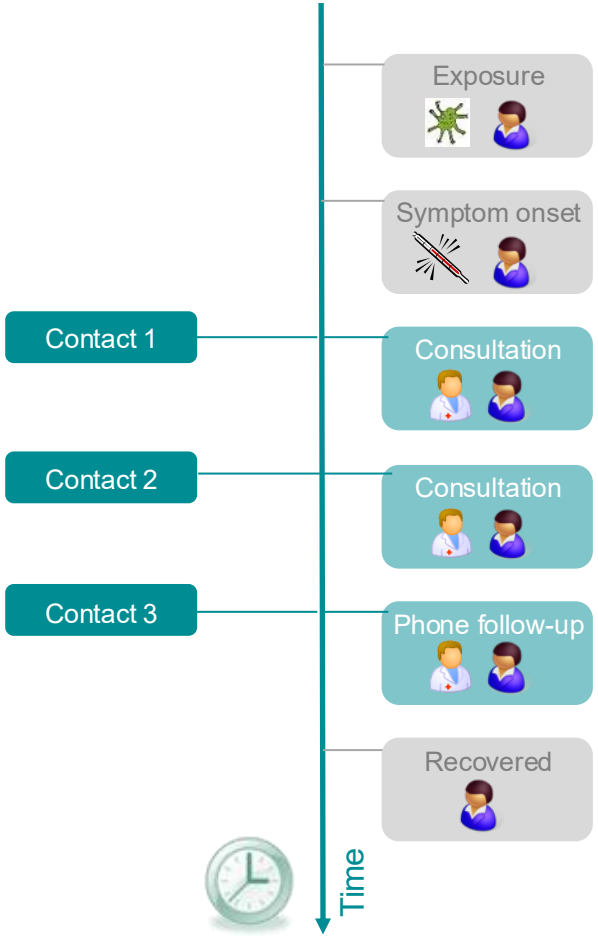


The temporal dimension of the care pathway is the **period of care**.

A period encompasses all treatments within a specific time frame.

Example
Dr Smith invoices all services rendered from 15 February 2025 to 27 February 2025.

The organisational dimension is a contact (*care encounter)*



The organisational dimension of the care pathway is a **contact = care encounter**.

The patient and the healthcare professional meet at a specific location at a specific time.

Example:
Mrs Brown and Dr Smith have an appointment for a consultation on 20 February 2025 at 8:15 a.m.

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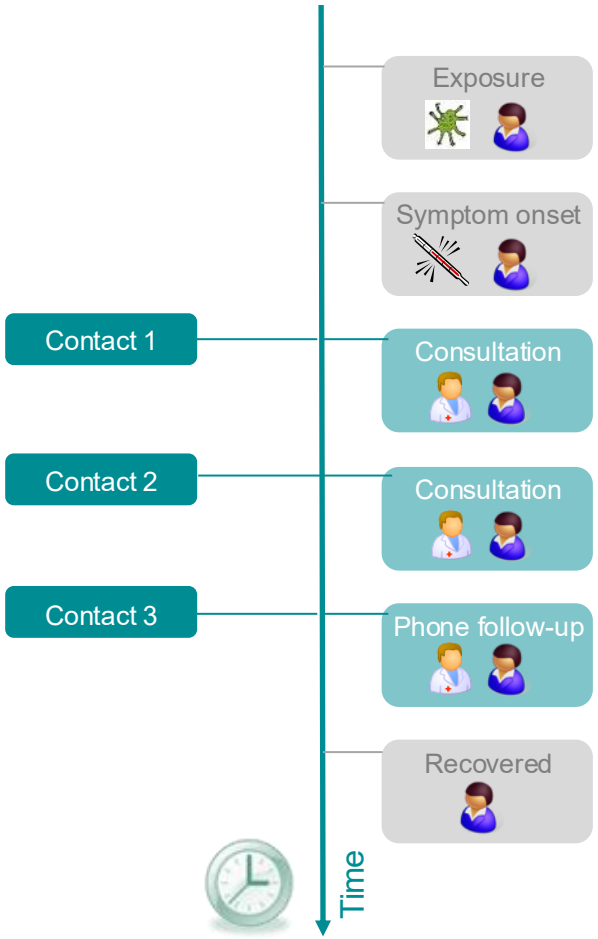
There are different types of contact



Types of Contact

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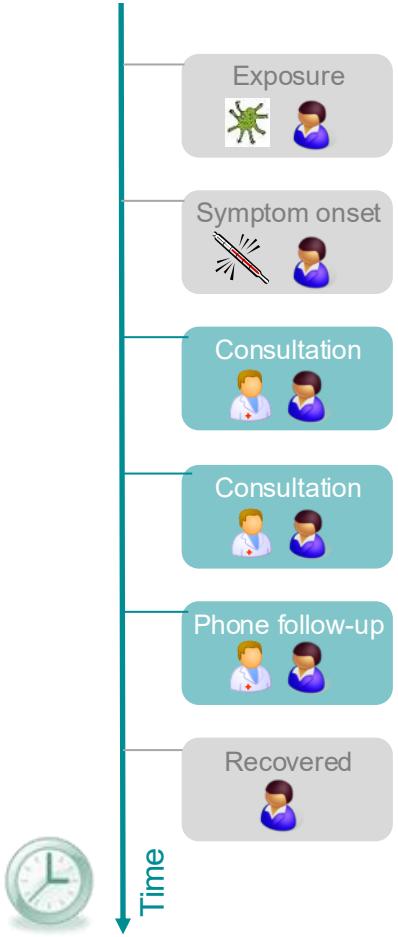
There are different types of contact (care encounter)



Types of Contact

Contact with a healthcare provider

- consultation
- home visit
- ward round
- telephone consultation
- third-party telephone information
- file review
- dispensing of medication
- documentation of diagnostic procedures
- documentation of d therapeutic procedures

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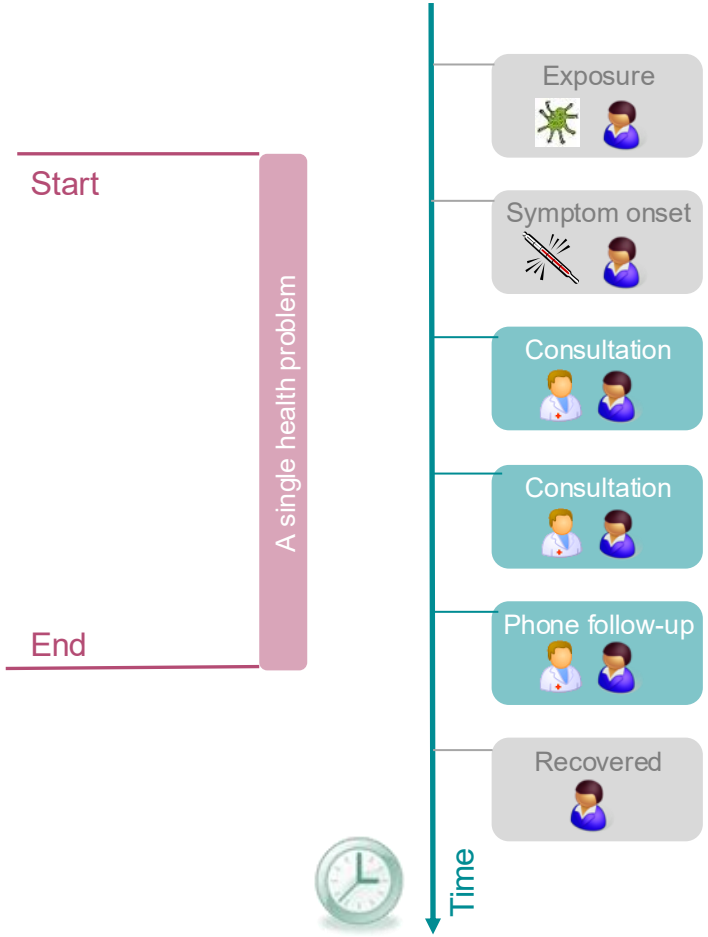
The content dimension is the episode



The **episode** is the content structure of the care pathway for a specific health problem of the patient with a beginning and an end.

Example
Mrs Brown has the flu as a health problem.
The flu has a beginning and an end.

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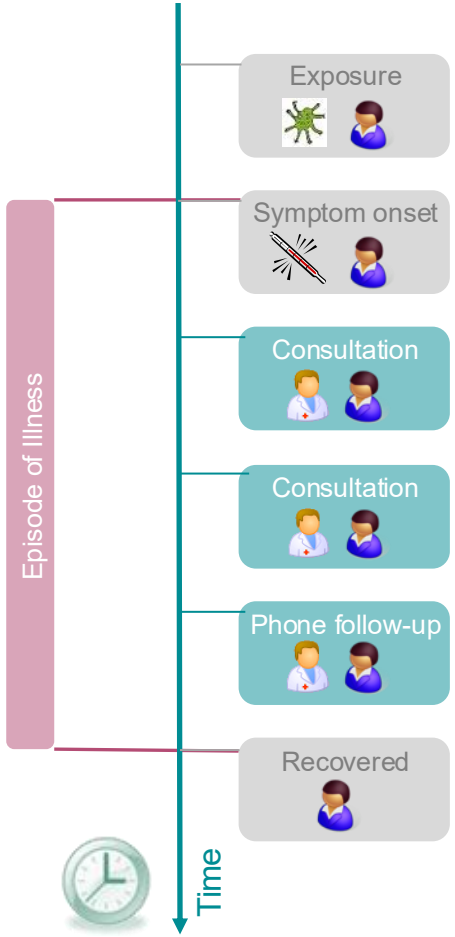
Episode of Illness – patient's perspective

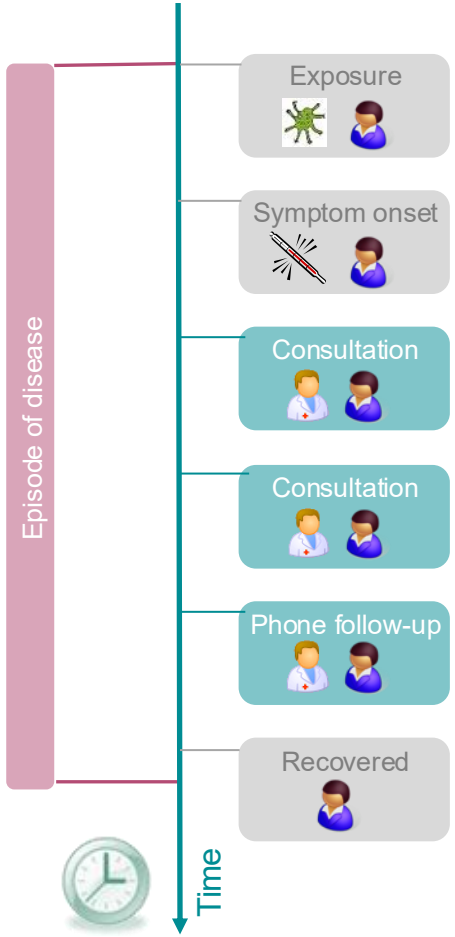


The **episode of illness** focuses on the patient's perspective and subjective feelings.

It begins with the loss of well-being and the onset of symptoms and ends with recovery, incomplete recovery or death.

Example
Mrs. Brown feels cold and her nose starts to run.
Mrs. Brown feels healthy again and goes to work.

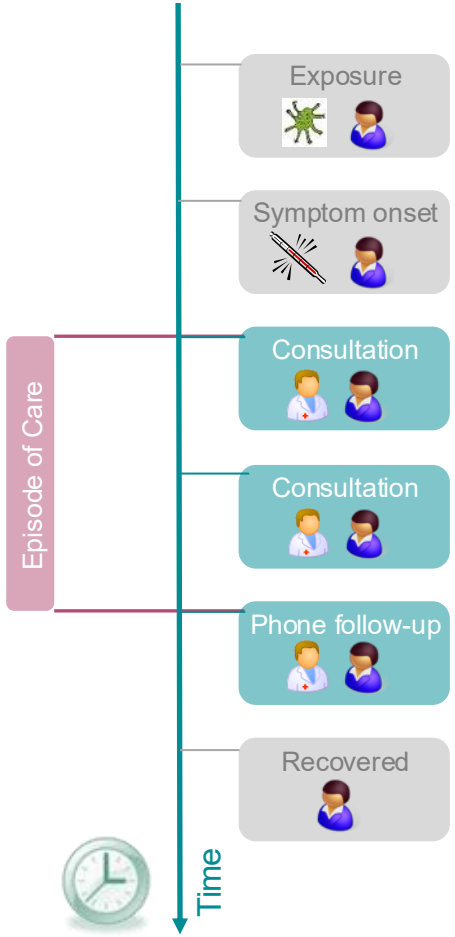
Episode of Disease – perspective of scientists



The **episode of disease** describes an episode of illness from the perspective of doctors and scientists, applying pathophysiological criteria.

Example
Mrs Brown catches the flu virus. The incubation period is one to two days.

Episode of Care



The **episode of care** includes one or more contacts with healthcare professionals for the treatment of a specific health problem.

All medical data relating to the health problem is linked to the episode.

Example
Mrs Brown has had three contacts with Dr Smith for treatment of the flu

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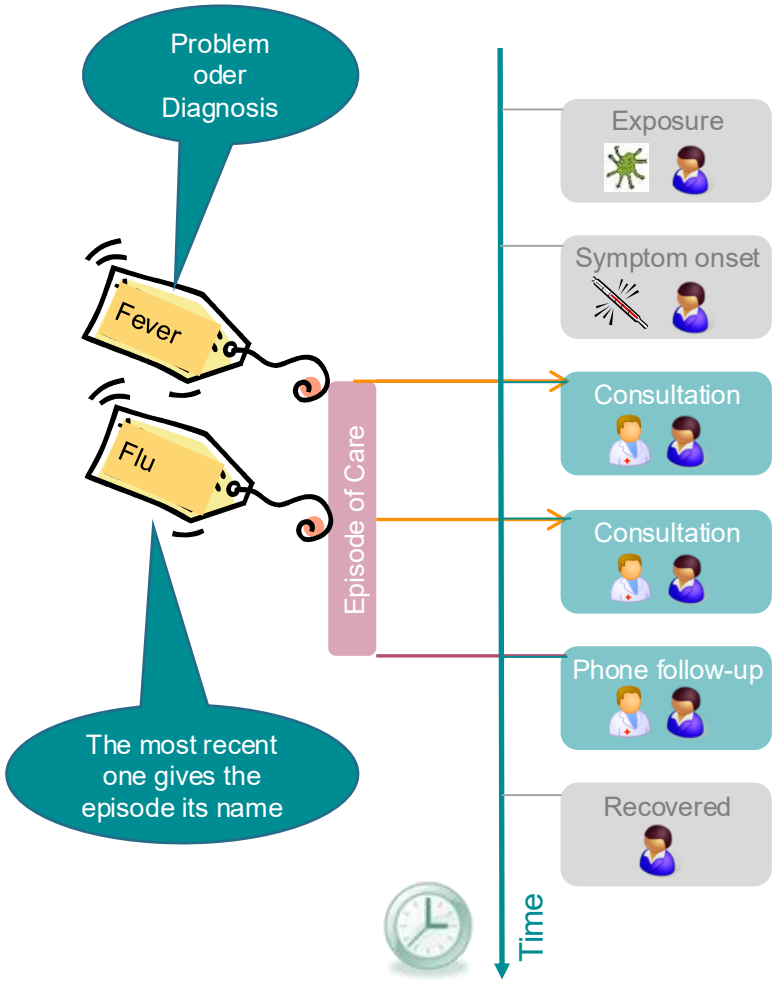
The name of the episode of care is the label from the most recent contact



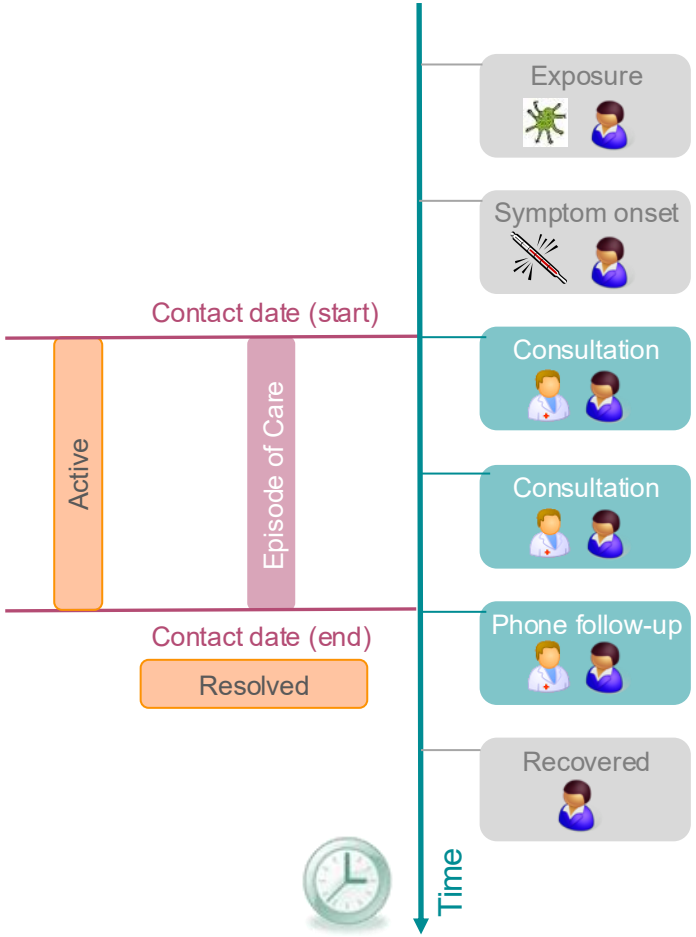
The episode is named according to the health problem with a problem description or diagnosis.

The name of the episode can be changed for each contact.

The previous name for existing contacts remains unchanged.

The name of the episode displayed is, by default, the name of the most recent contact.

The episode has the status active, inactive or resolved

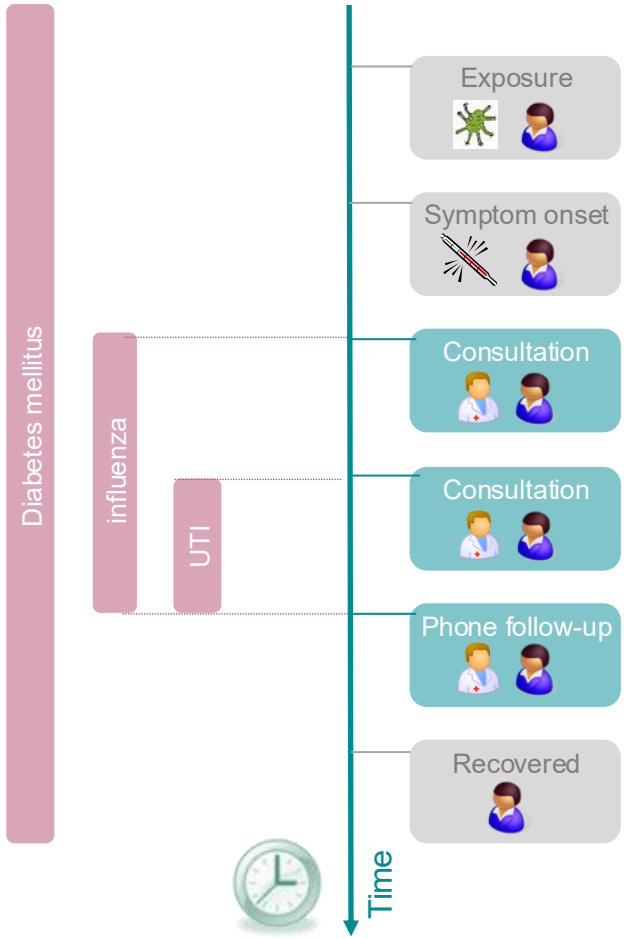


The episode begins with the date of the first contact with a healthcare provider and has the status “active”.

The episode ends with the last contact and has the status “resolved”.

Chronic episodes are never resolved.

A patient may have several active episodes at the same time.



A patient may have several health problems at the same time.

One episode is created per health problem.

Complications of an episode are recorded as a separate episode.

Example
Mrs Brown suffers from diabetes mellitus, has the flu and a urinary tract infection (UTI). Each of these health problems is a separate episode of care.

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Let's summarise

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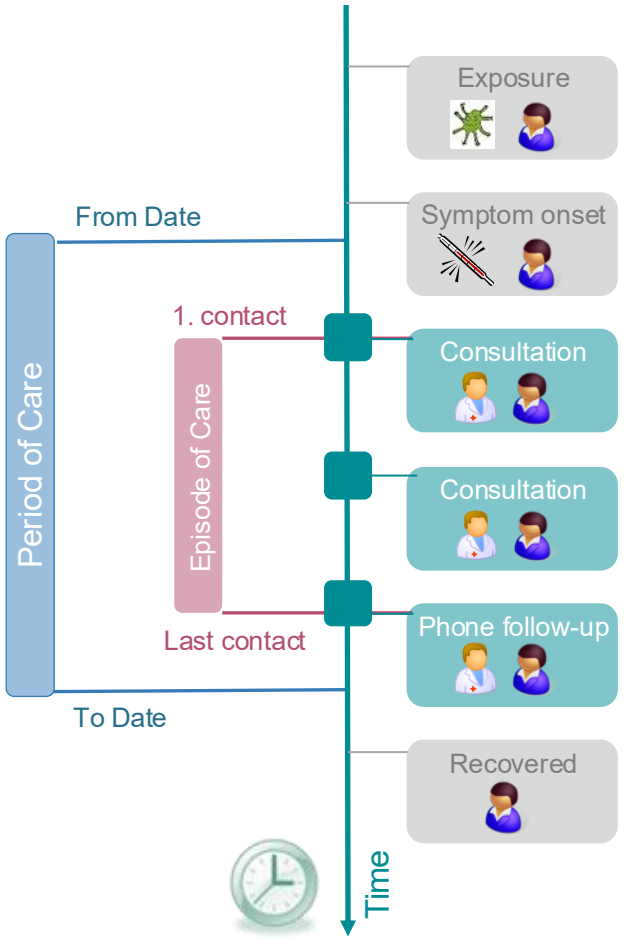
Care pathways can be structured by organisation, time, or content



Units of clinical documentation

Organizational	Temporal	Content
Contact (Care encounter)	Periode of Care	Episode of Care
Single interaction with healthcare professional (Consultion, Home Visit)	All treatments within a period (day, week, month)	All contacts for treatment for the same health problem

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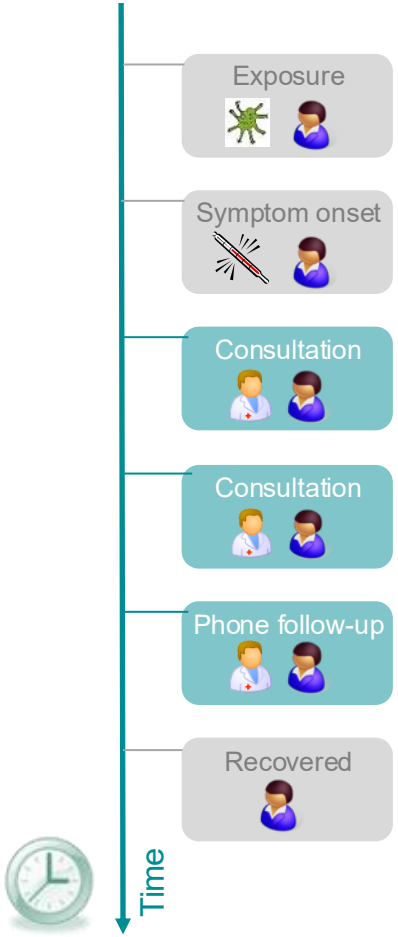
What exactly happens at the contact?



What happens during the contact, exactly?

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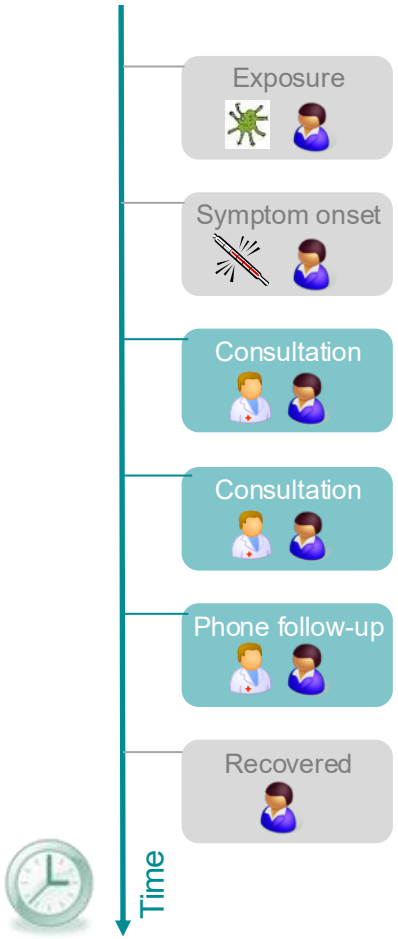
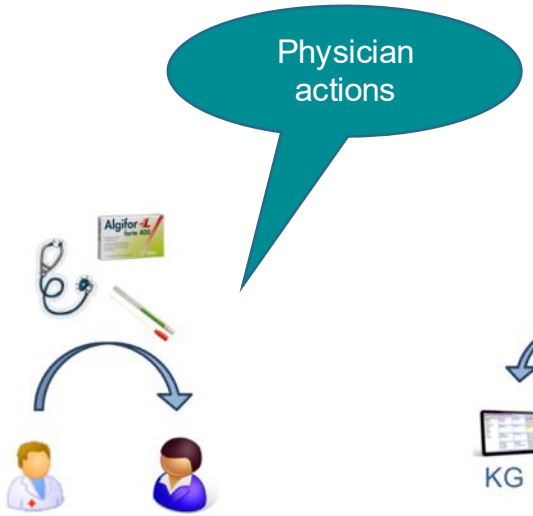
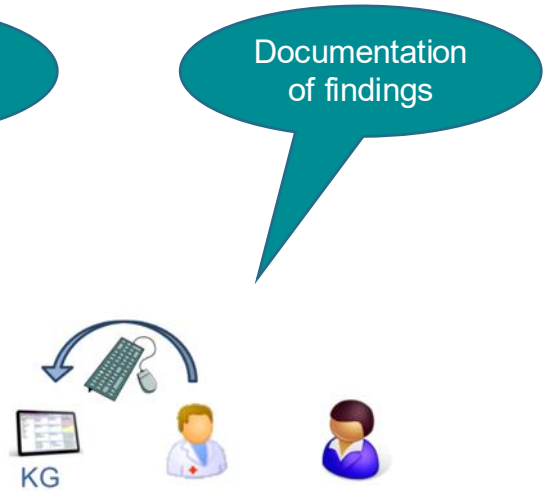
What exactly happens at the contact?



Let's remember…



Dr Smith takes Mrs Brown's history, examines her, and treats her



Dr Smith documents everything in Mrs Brown's patient record

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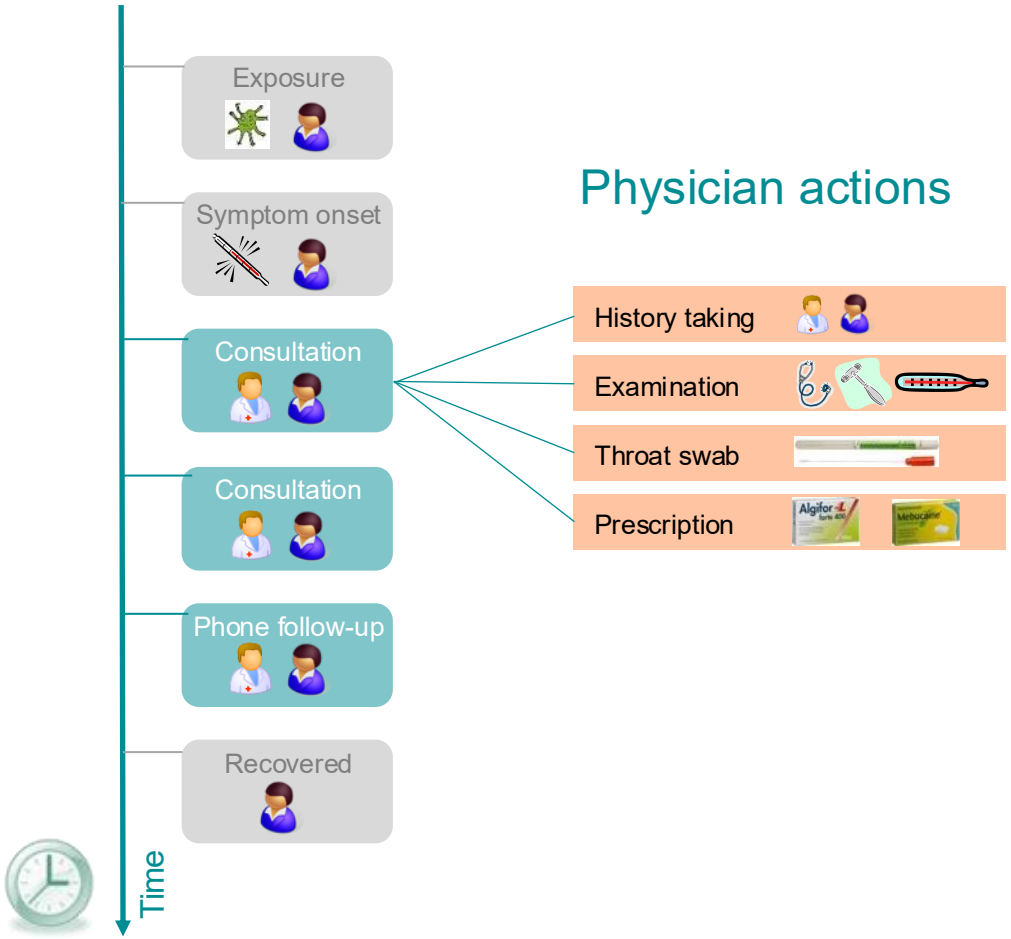
The physician performs various actions during the care encounter



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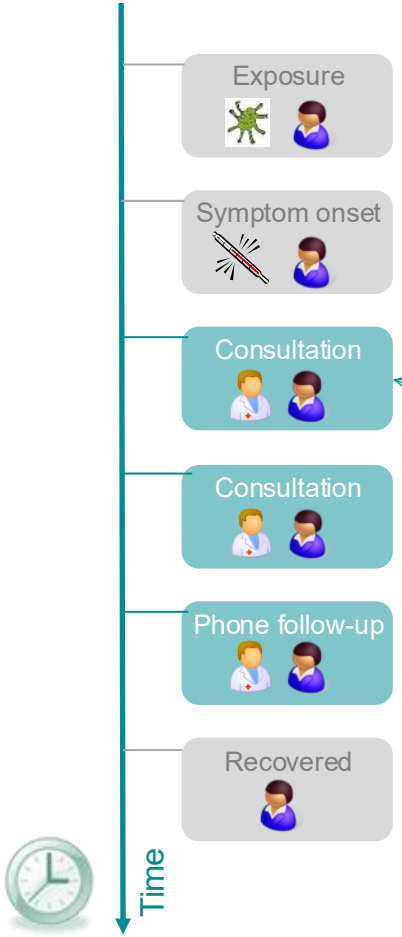
The physician documents the findings in the electronic health record (EHR)



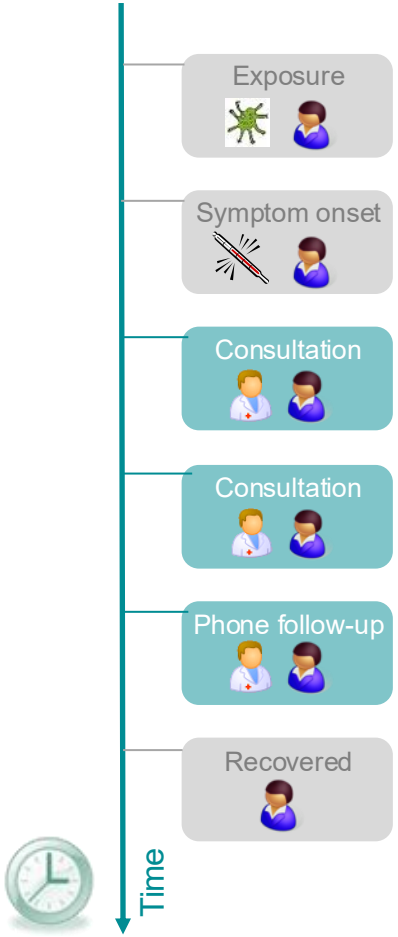
Physician actions

Documentation of findings

Physician actions		Documentation of findings		
History taking	→	Medical history	Fieber	40.0°
Examination	→	Physical examination	Fieber	38.5°
Throat swab	→	Lab results	Stept-A:	negativ
Prescription	→	Treatment	Medi:	Algifor

Each finding is recorded as a single **medical record entry** in the electronic health record (EHR)

How can clinical documentation be grouped?



How can the medical record entries be grouped?

Documentation of findings

Medical history	Fieber	40.0°
Physical examination	Fieber	38.5°
Lab results	Stept-A:	negativ
Treatment	Medi:	Algifor

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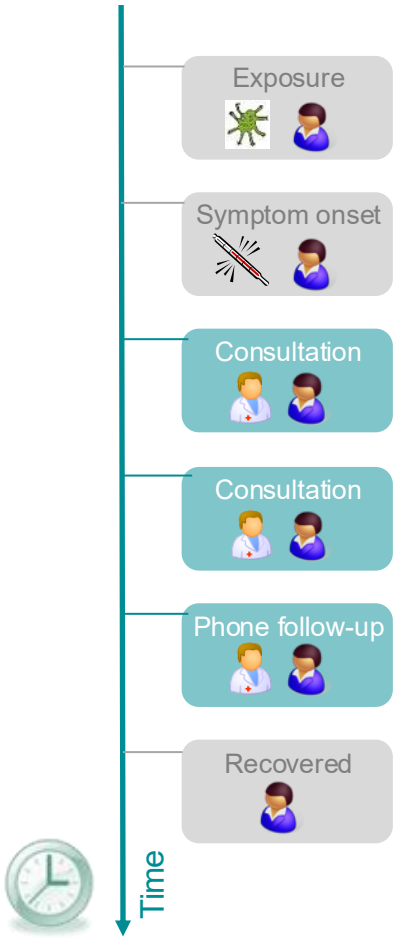
Grouping of medical documentation in clinical sections



Clinical Sections

Medical history
Past history
Childhood diseases
Childhood development Social history
Family history
Habits
Allergies, adverse effects
Current physical status
Assessment
Plan
Diagnoses
Problems
Progress notes
Diagnostics
Consultations
Therapy
Medication
Surgeries
Risk factors
Prevention
Vaccinations
Work incapacity
Medical correspondence

Documentation of findings

Medical history	Fieber	40.0°
Physical examination	Fieber	38.5°
Lab results	Stept-A:	negativ
Treatment	Medi:	Algifor

Each medical record entry is linked to a **clinical section**

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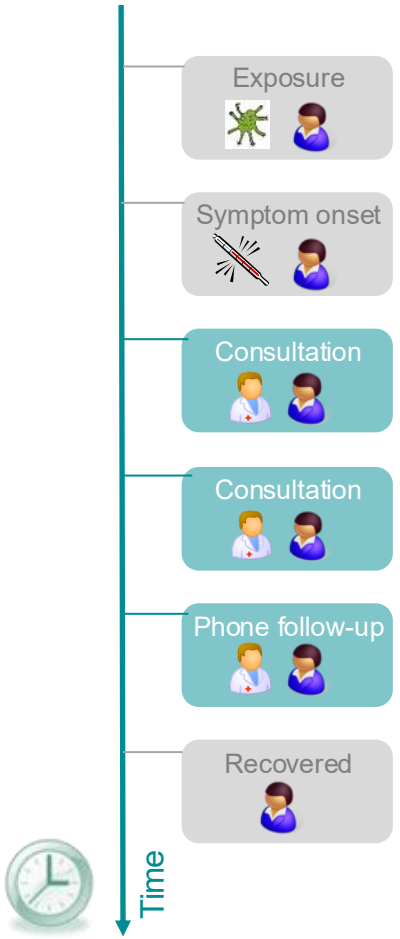
Grouping of medical documentation in clinical sections



Clinical Sections

Medical history
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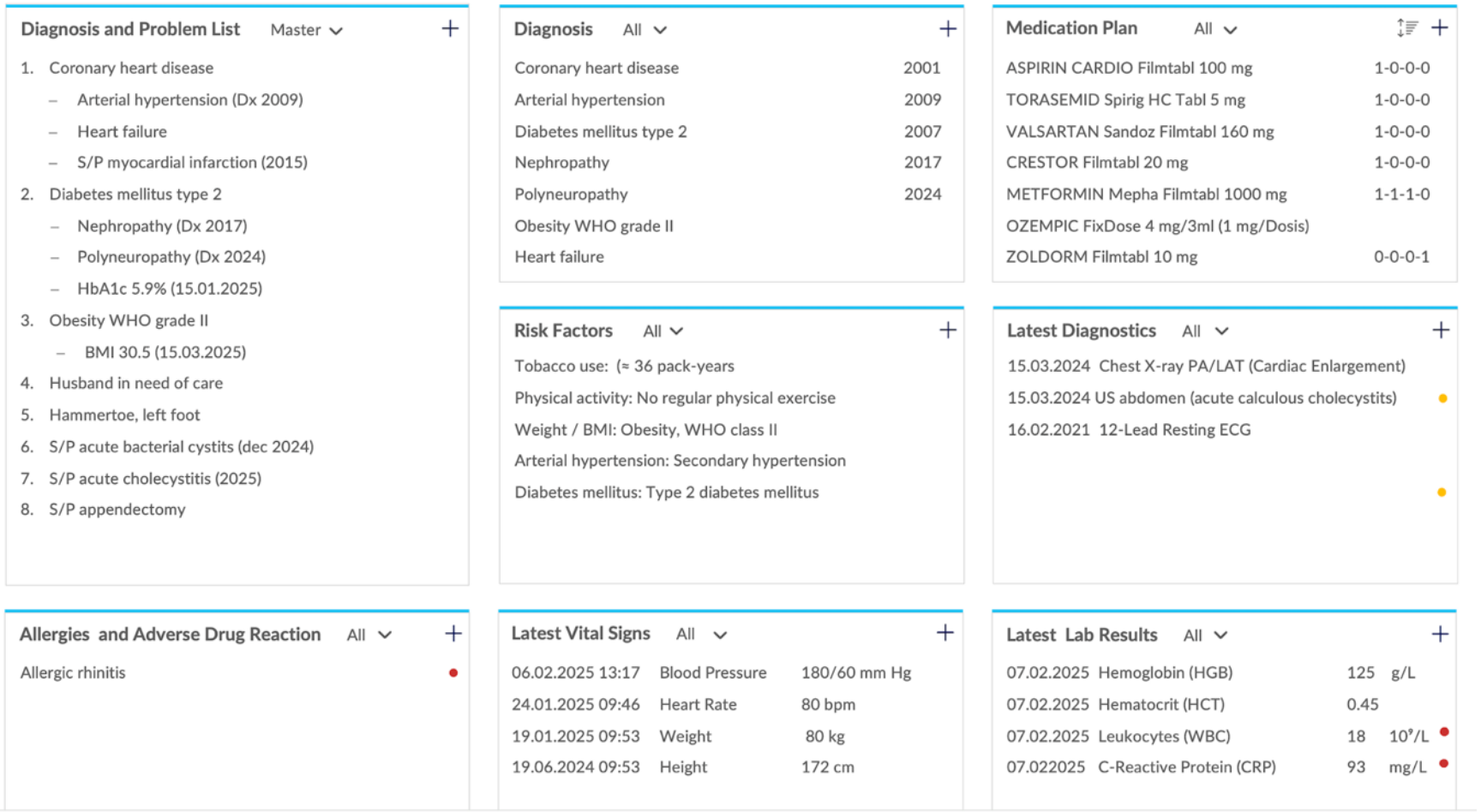
Assessment
Plan
Diagnoses
Problems
Progress notes
Diagnostics
Consultations
Therapy
Medication
Surgeries
Risk factors
Prevention
Vaccinations
Work incapacity
Medical correspondence

Medical record entries within the same clinical section automatically form a clinically meaningful unit for structuring the patient record.

The primary structure of the medical record is a view of medical record entries grouped by clinical section.

Grouping of medical documentation in clinical sections



Diagnosis and Problem List Master

1. Coronary heart disease
   - Arterial hypertension (Dx 2009)
   - Heart failure
   - S/P myocardial infarction (2015)
2. Diabetes mellitus type 2
   - Nephropathy (Dx 2017)
   - Polyneuropathy (Dx 2024)
   - HbA1c 5.9% (15.01.2025)
3. Obesity WHO grade II
   - BMI 30.5 (15.03.2025)
4. Husband in need of care
5. Hammertoe, left foot
6. S/P acute bacterial cystits (dec 2024)
7. S/P acute cholecystitis (2025)
8. S/P appendectomy

Diagnosis All

Coronary heart disease	2001
Arterial hypertension	2009
Diabetes mellitus type 2	2007
Nephropathy	2017
Polyneuropathy	2024
Obesity WHO grade II	
Heart failure	

Medication Plan All

ASPIRIN CARDIO Filmtabl 100 mg	1-0-0-0
TORASEMID Spirig HC Tabl 5 mg	1-0-0-0
VALSARTAN Sandoz Filmtabl 160 mg	1-0-0-0
CRESTOR Filmtabl 20 mg	1-0-0-0
METFORMIN Mepha Filmtabl 1000 mg	1-1-1-0
OZEMPIC FixDose 4 mg/3ml (1 mg/Dosis)	
ZOLDORM Filmtabl 10 mg	0-0-0-1

Risk Factors All

Tobacco use: (≈ 36 pack-years

Physical activity: No regular physical exercise

Weight / BMI: Obesity, WHO class II

Arterial hypertension: Secondary hypertension

Diabetes mellitus: Type 2 diabetes mellitus

Latest Diagnostics All

15.03.2024 Chest X-ray PA/LAT (Cardiac Enlargement)

15.03.2024 US abdomen (acute calculous cholecystits)

16.02.2021 12-Lead Resting ECG

Allergies and Adverse Drug Reaction All

Allergic rhinitis

Latest Vital Signs All

06.02.2025 13:17	Blood Pressure	180/60 mm Hg
24.01.2025 09:46	Heart Rate	80 bpm
19.01.2025 09:53	Weight	80 kg
19.06.2024 09:53	Height	172 cm

Latest Lab Results All

07.02.2025	Hemoglobin (HGB)	125	g/L
07.02.2025	Hematocrit (HCT)	0.45	
07.02.2025	Leukocytes (WBC)	18	10^9/L
07.022025	C-Reactive Protein (CRP)	93	mg/L

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Let's summarise

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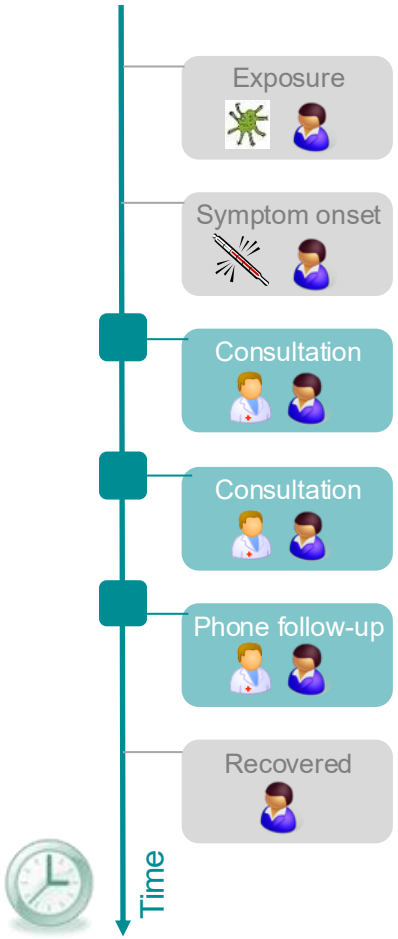
The electronic health record (EHR) is organised into care encounters



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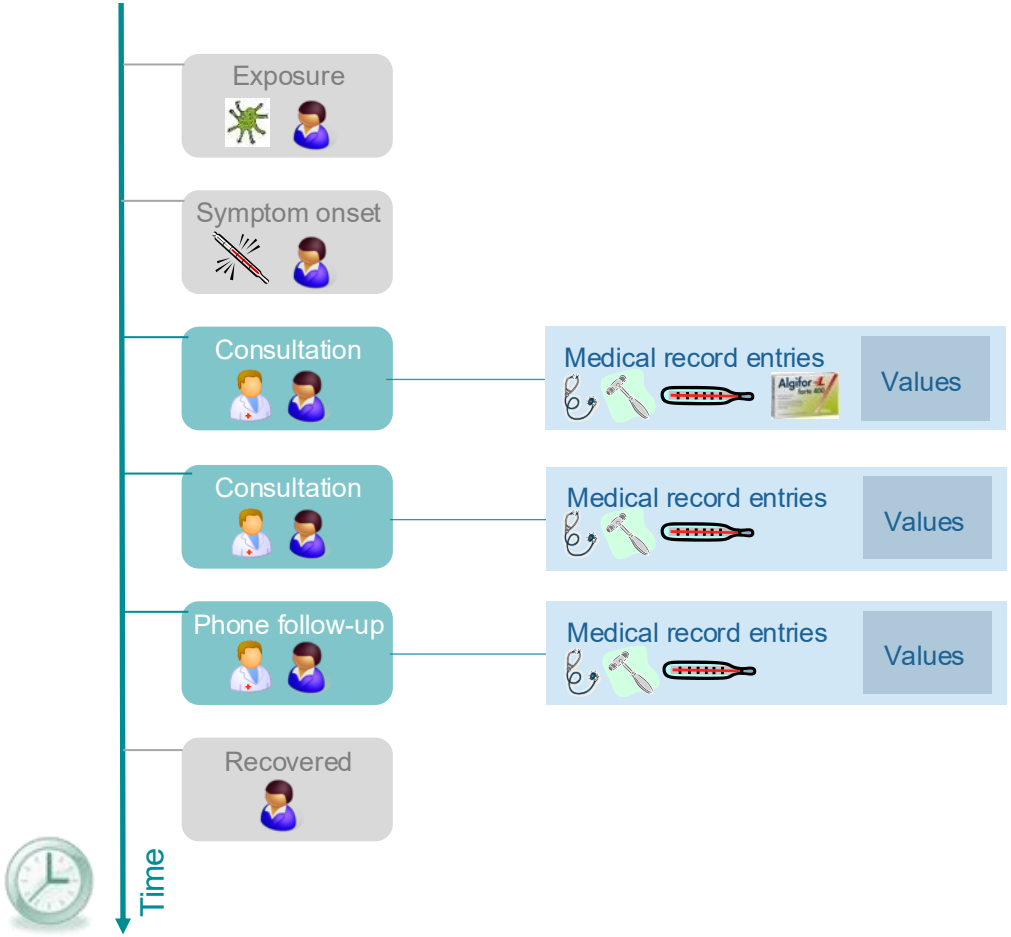
Each medical record entry is linked to the care encounter



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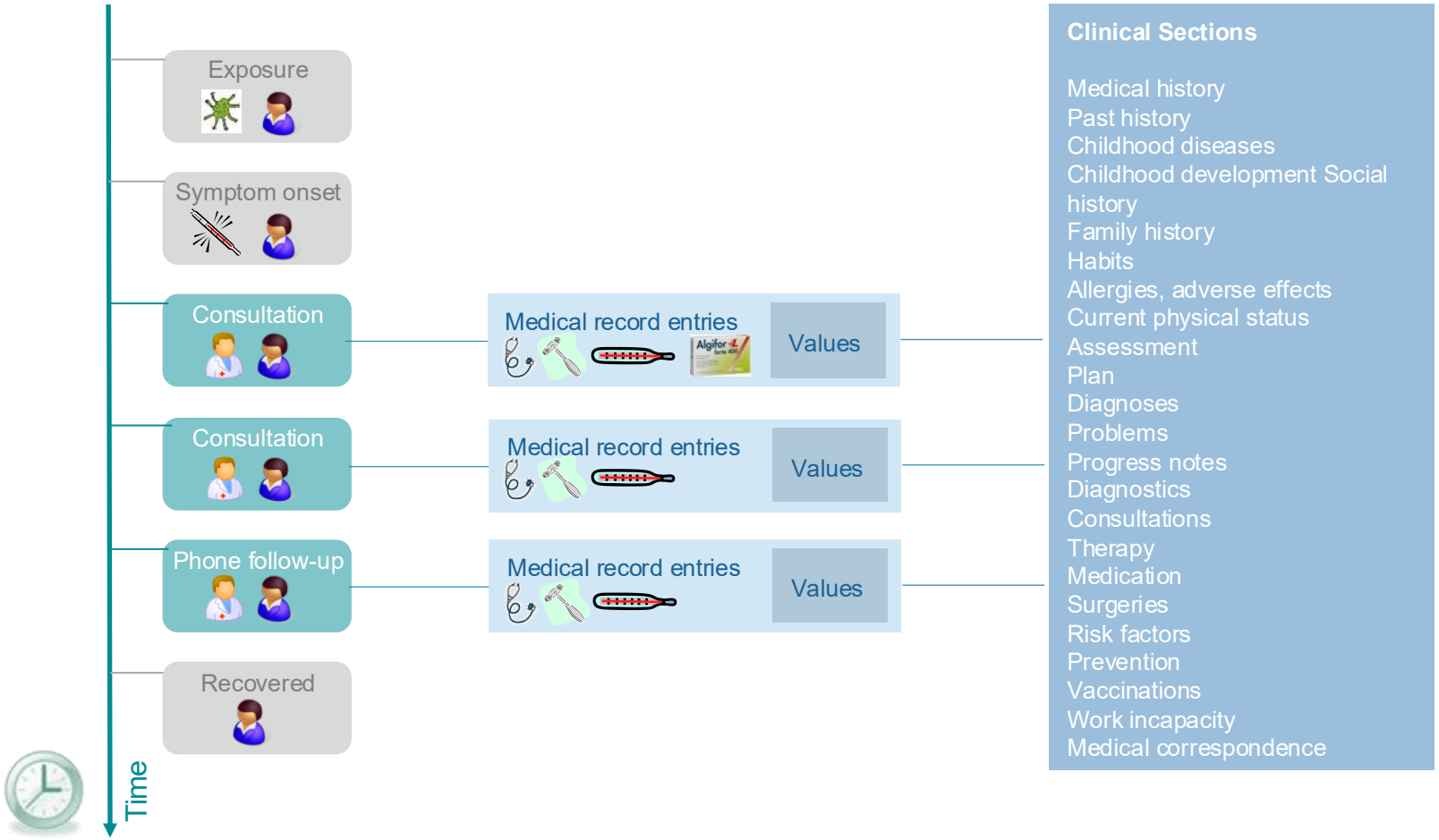
Each medical record entry is linked to a clinical section



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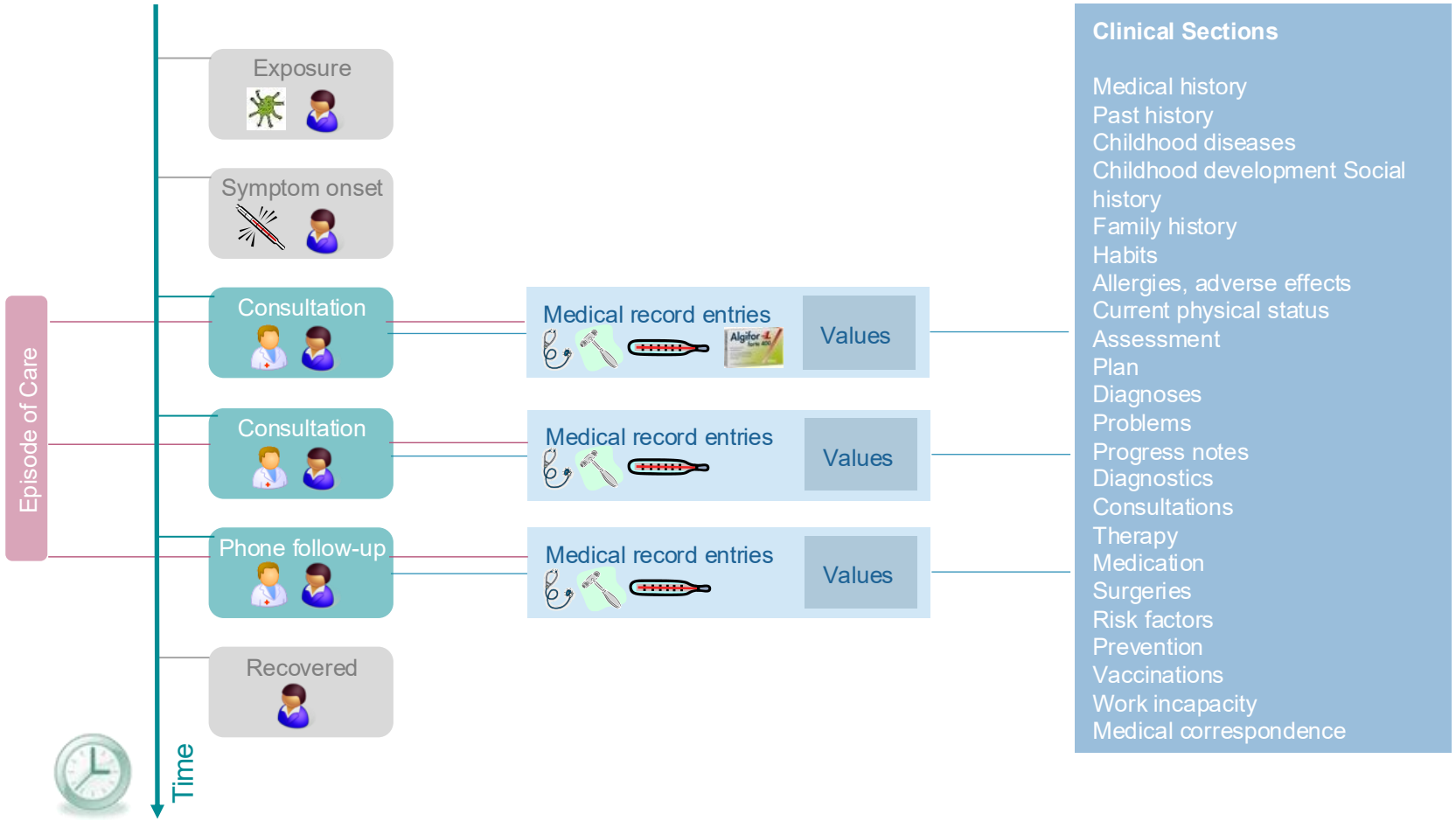
Each medical record entry is linked to an episode of care



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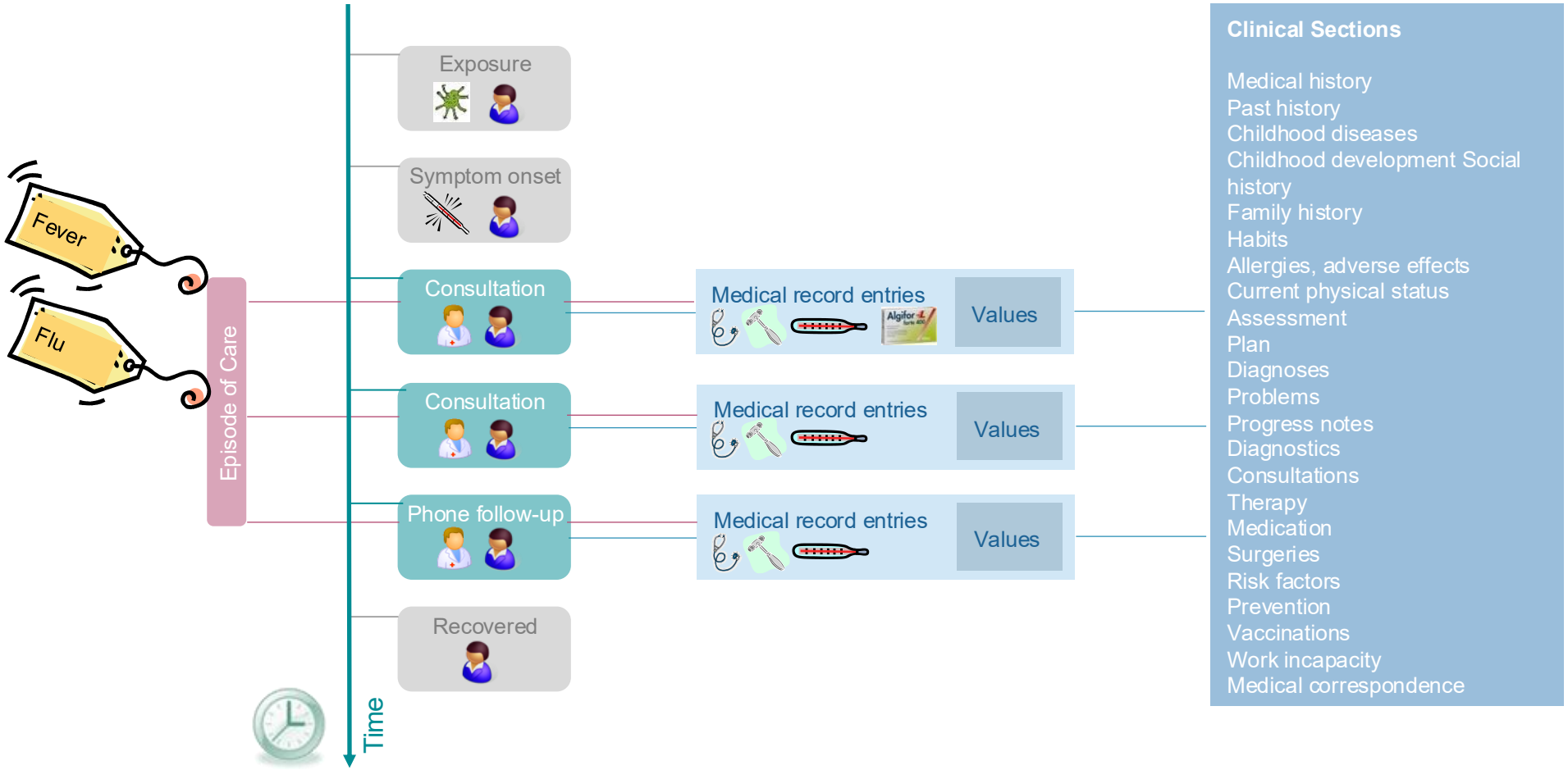
Each episode takes its name from the most recent problem or diagnosis label



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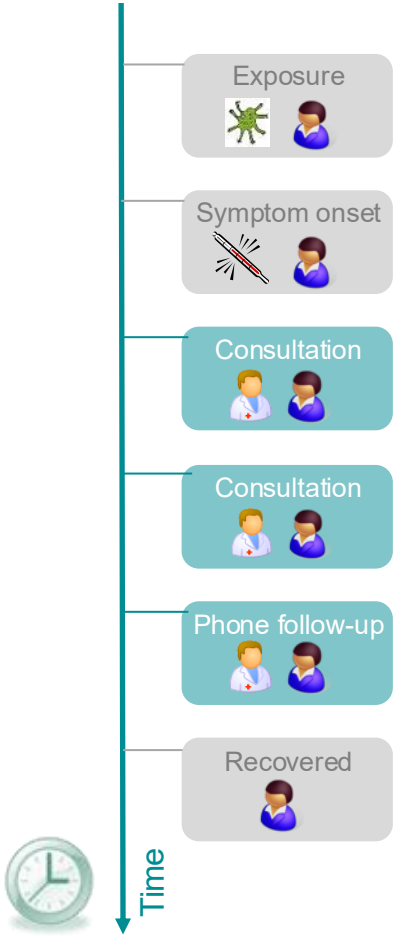
How are the episode list and the diagnoses and problem list derived?



Episode list? Diagnosis and problem list?

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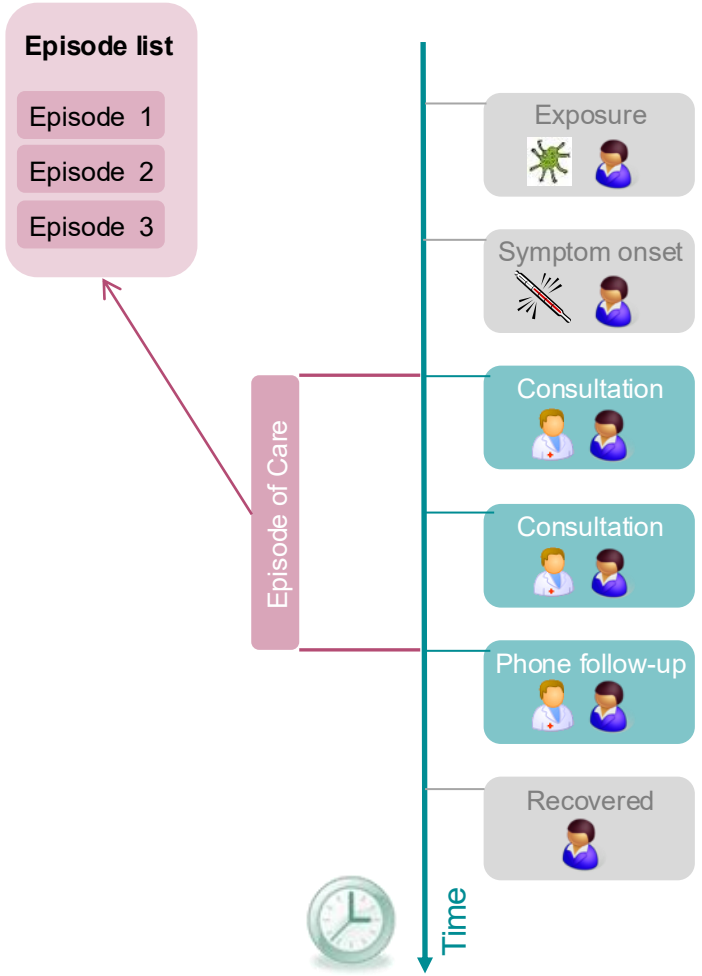
The episode list is automatically generated



The **episode list** is a linear list of all episodes for the patient, i.e., all problems and diagnoses.

The episode list is generated automatically and displays the active episodes.

Resolved episodes can be shown using filters.

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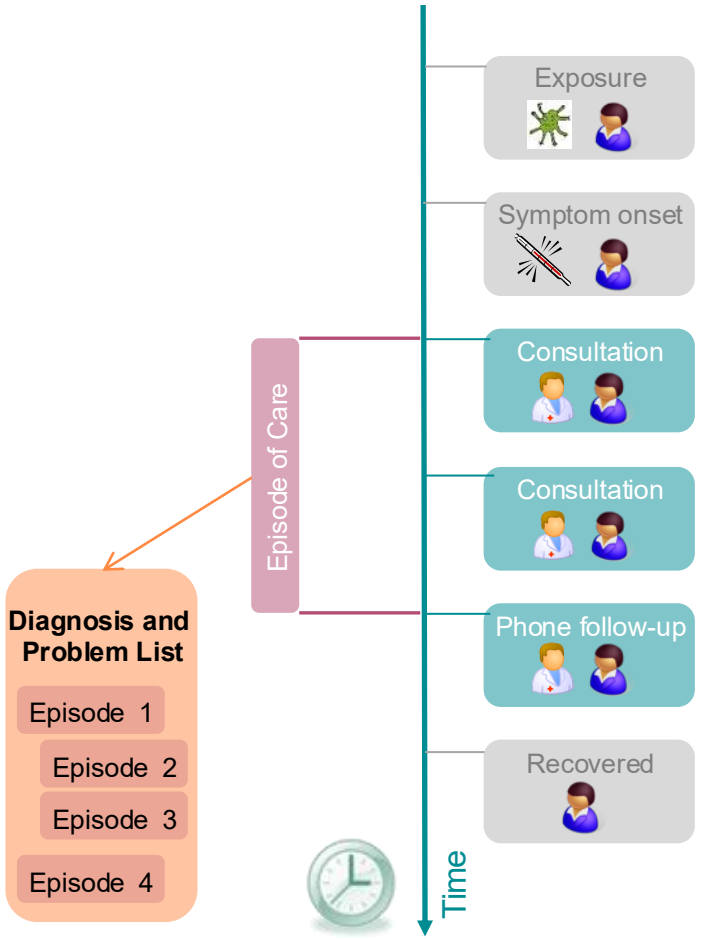
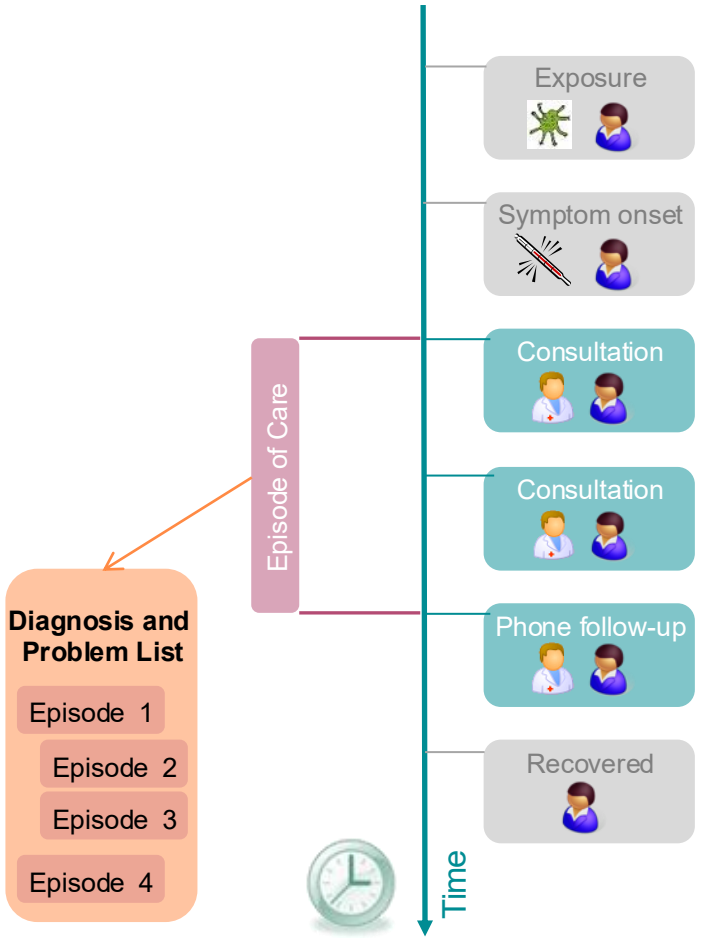
The diagnosis and problem list is a hierarchical organisation of the episode



The **diagnosis and problem list** is a hierarchical grouping of clinically related episodes (problems or diagnoses) and medical record entries from the past history as well as allergies.

On the diagnosis and problem list, episodes are always displayed regardless of whether they are active or resolved.

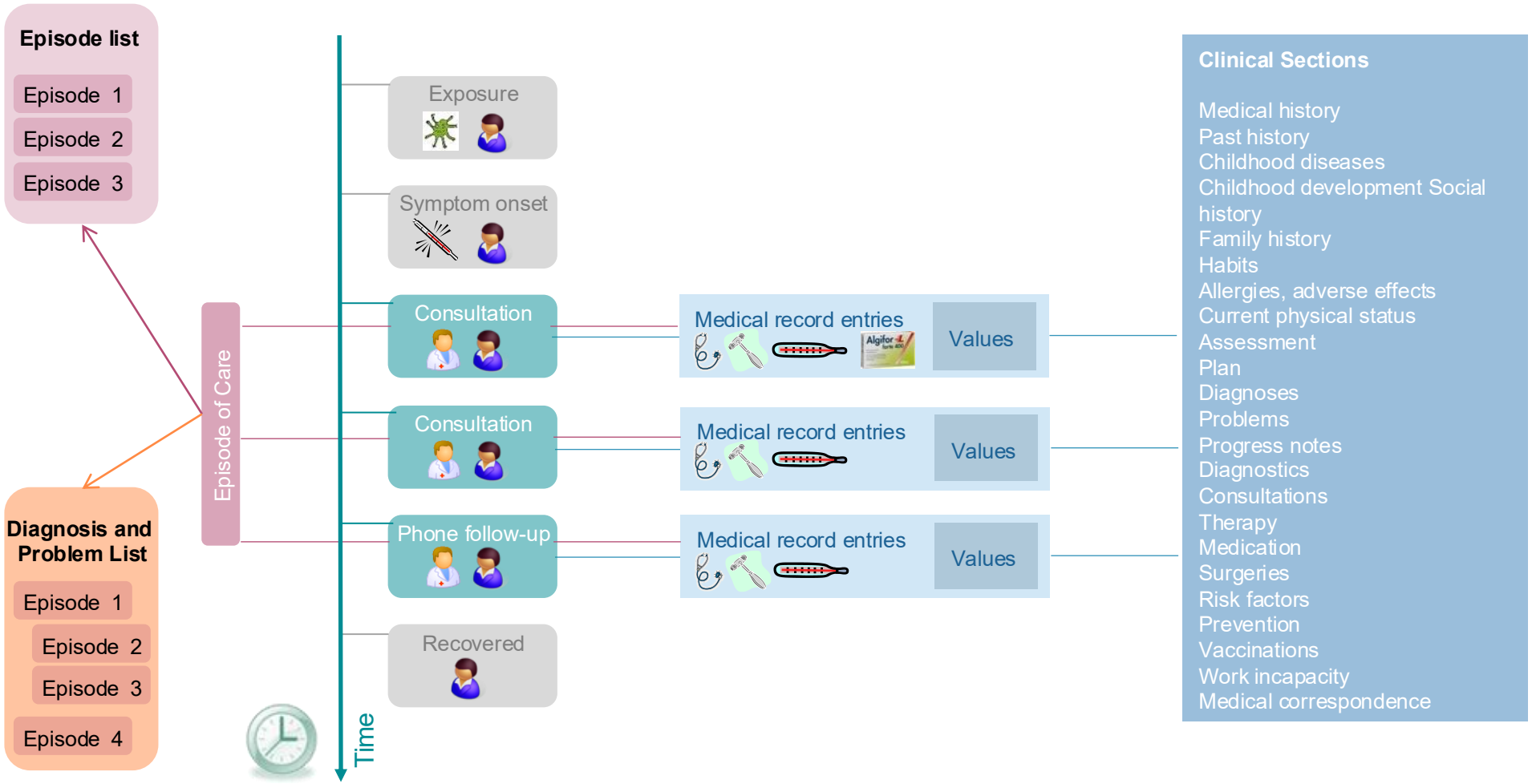
The diagnosis and problem list is a hierarchical organisation of the episode



Example diagnosis and problem list

1. Urinary tract infection (22.03.2024)
2. Coronary heart disease with/without
   - Arterial hypertension (Dx 2009)
   - Heart failure
   - History of Myocardial infarction (2015)
3. Diabetes mellitus type 2 (Dx 2007)
   - Polyneuropathy (Dx 2014)
   - Nephropathy (Dx 2017)
   - HbA1c 23.02.2024: 6.4%
4. Obesity WHO grade II
   - BMI initial 35.9 kg/m2
   - Start therapy with liraglutide 03.04.2022
   - BMI 16.05.2024: 31.3. kg/m2
5. Husband in need of care
6. Cholecystectomy (1988)
7. Appendectomy (1965)

Basic Architecture of Solon's Episode-Oriented Electronic Health Record



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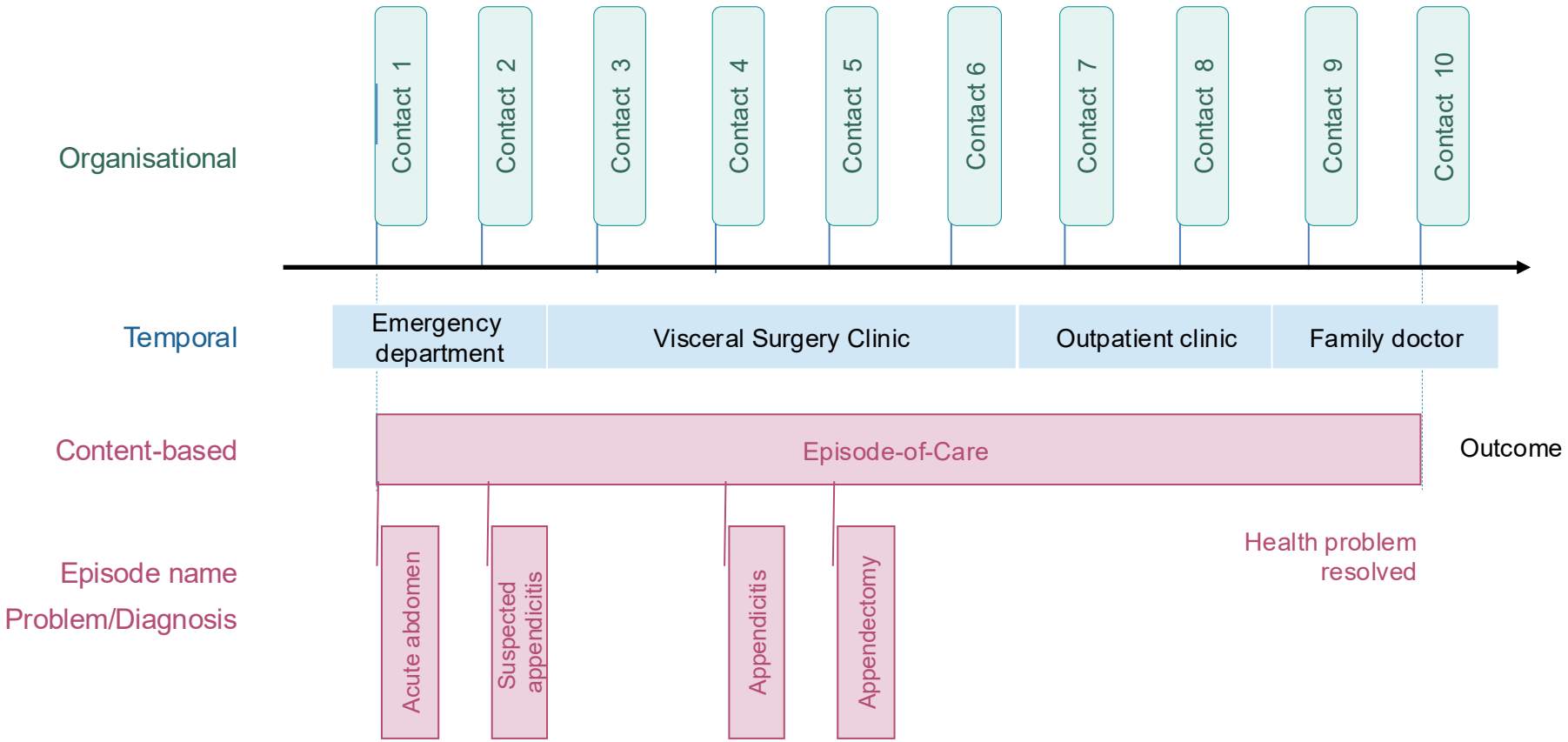
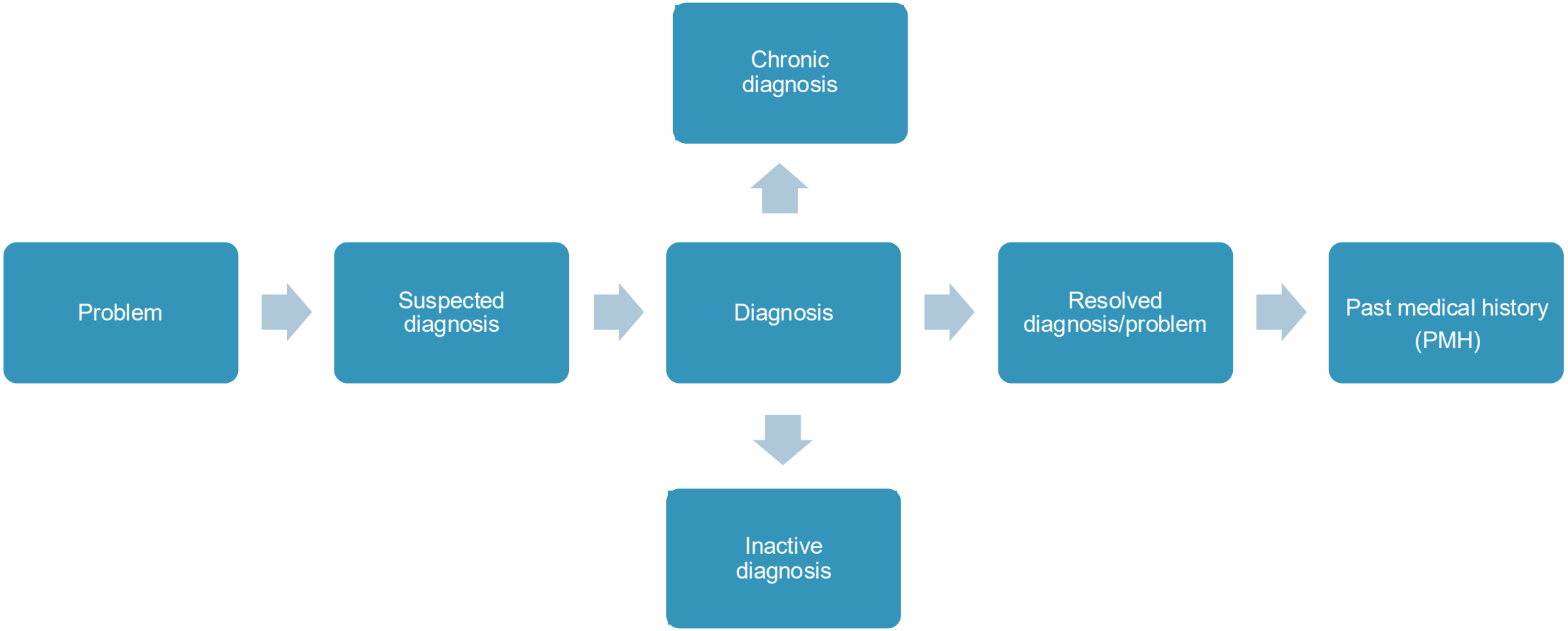
Example clinical pathway for a patient with an acute abdomen



The lifecycle of a health problem
Changes in the same health problem over time



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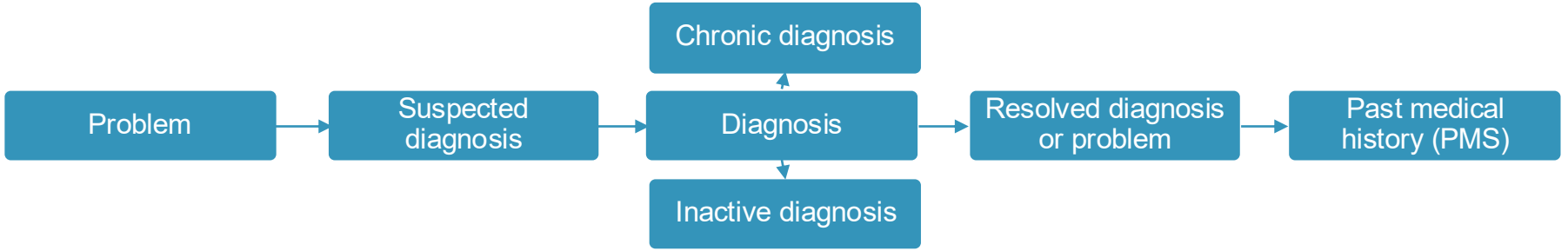

Diagnostic certainty EVALUATION.problem_diagnosis.v1	**Suspected** Probable Confirmed	Suspected **Probable** Confirmed	Suspected Probable **Confirmed**	Suspected Probable **Confirmed**	Suspected Probable **Confirmed**
Diagnostic status CLUSTER.problem_qualifier.v2	**Preliminary** Working Established Refuted Text	Preliminary **Working** Established Refuted Text	Preliminary Working **Established** **Refuted** Text	Preliminary Working **Established** **Refuted** Text	Preliminary Working Established Refuted Text
Current/Past? CLUSTER.problem_qualifier.v2	**Current** Past	**Current** Past	**Current** Past	Current **Past**	Current **Past**
Active/Inactive? CLUSTER.problem_qualifier.v2	**Active** Inactive	**Active** Inactive	**Active** **Inactive**	Active Inactive	Active Inactive
Resolution phase CLUSTER.problem_qualifier.v2	Not resolving Resolving Resolved Indeterminate Relapsed Text	Not resolving Resolving Resolved Indeterminate Relapsed Text	Not resolving Resolving Resolved Indeterminate Relapsed Text	Not resolving Resolving **Resolved** Indeterminate Relapsed Text	Not resolving Resolving **Resolved** Indeterminate Relapsed Text
Course label CLUSTER.problem_qualifier.v2	**Acute** Acute-on-chronic Chronic	**Acute** Acute-on-chronic Chronic	**Acute** **Acute-on-chronic** **Chronic**	Acute Acute-on-chronic Chronic	Acute Acute-on-chronic Chronic
Date/time EVALUATION.problem_diagnosis.v1	- Date/time of onset - Date/time of clinically recognised			Date/time of resolution	

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Logical data model

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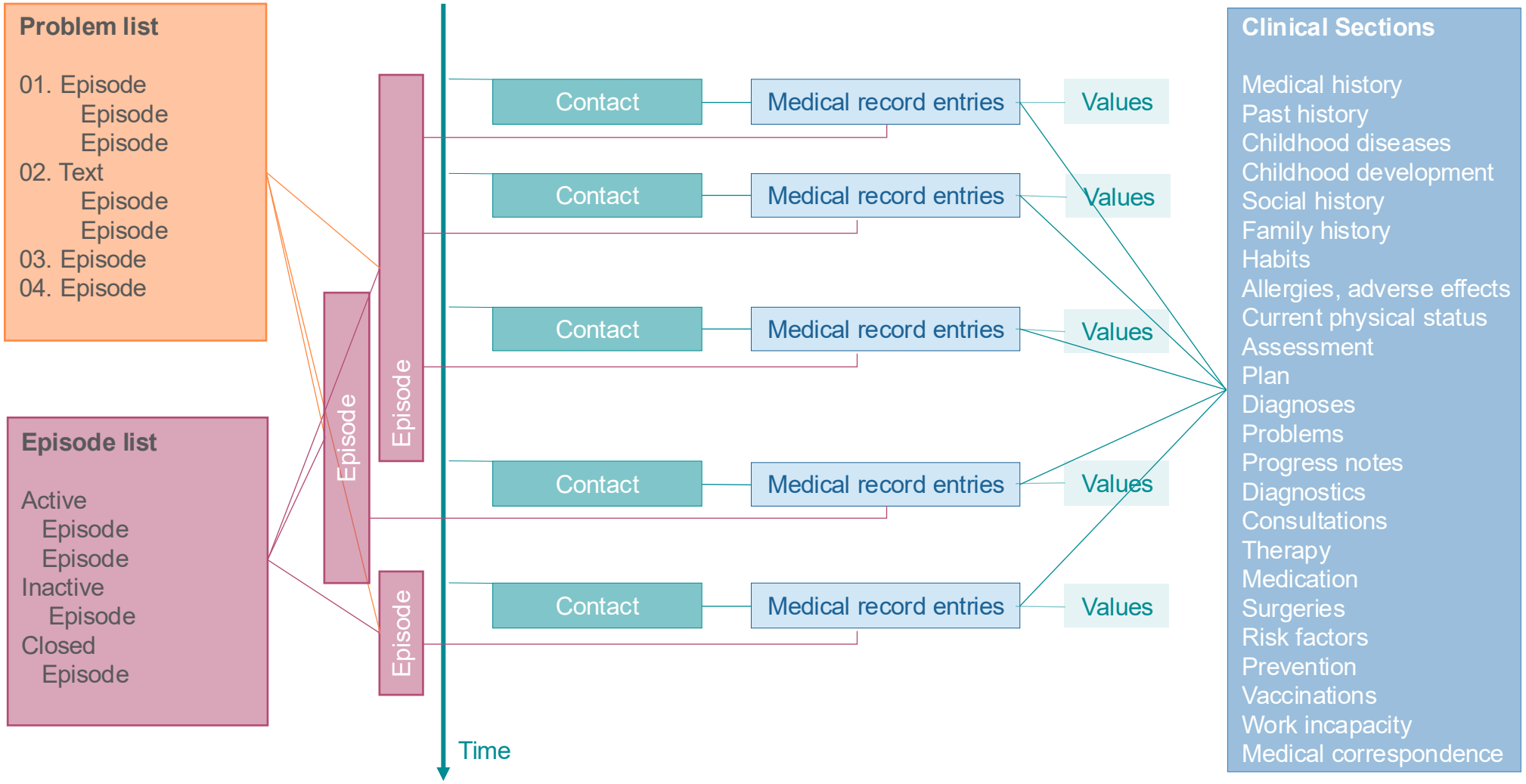
Basic Architecture of Episode-Oriented Electronic Health Record



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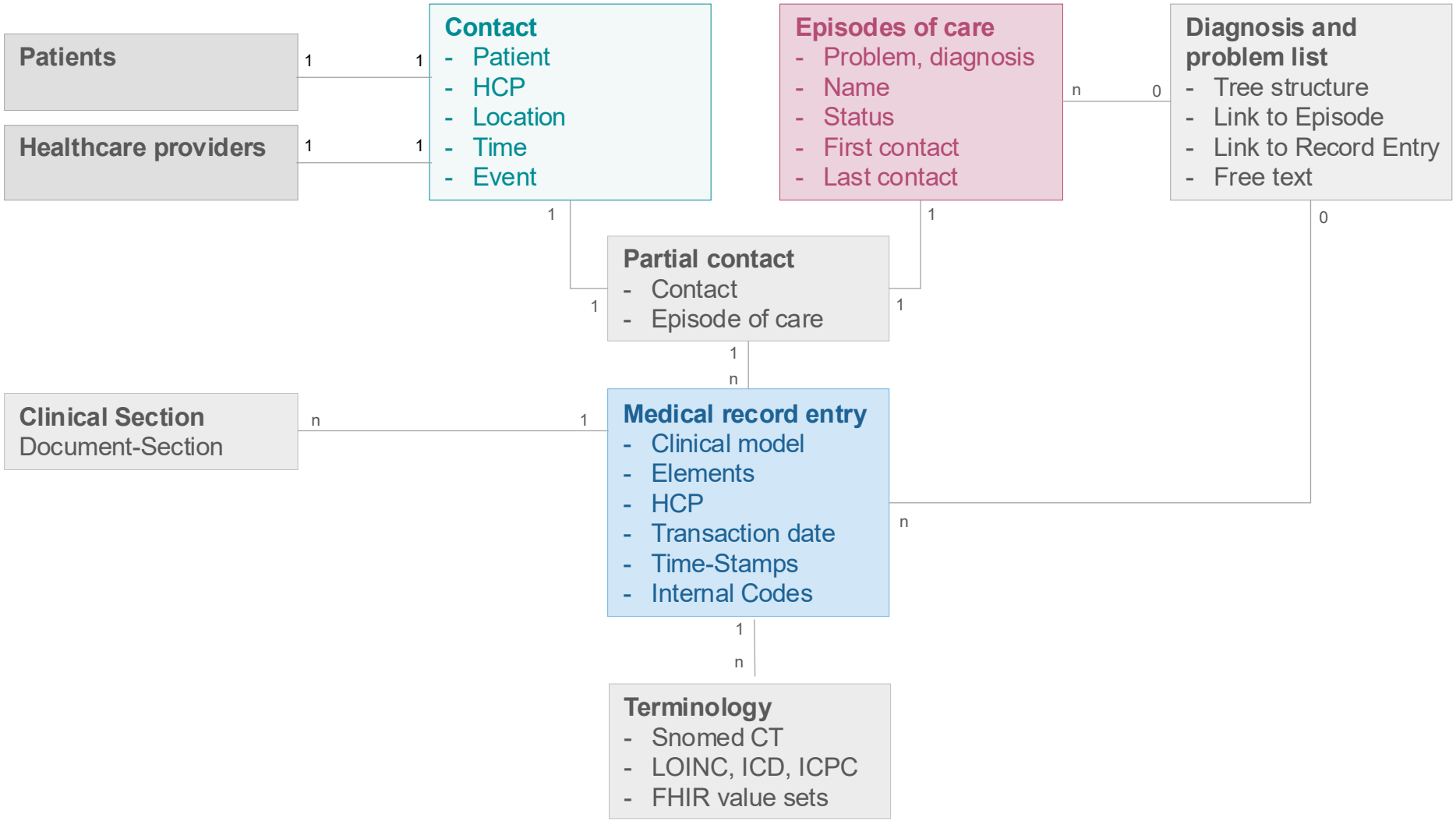
Episode of care – Database Entity Relationship model



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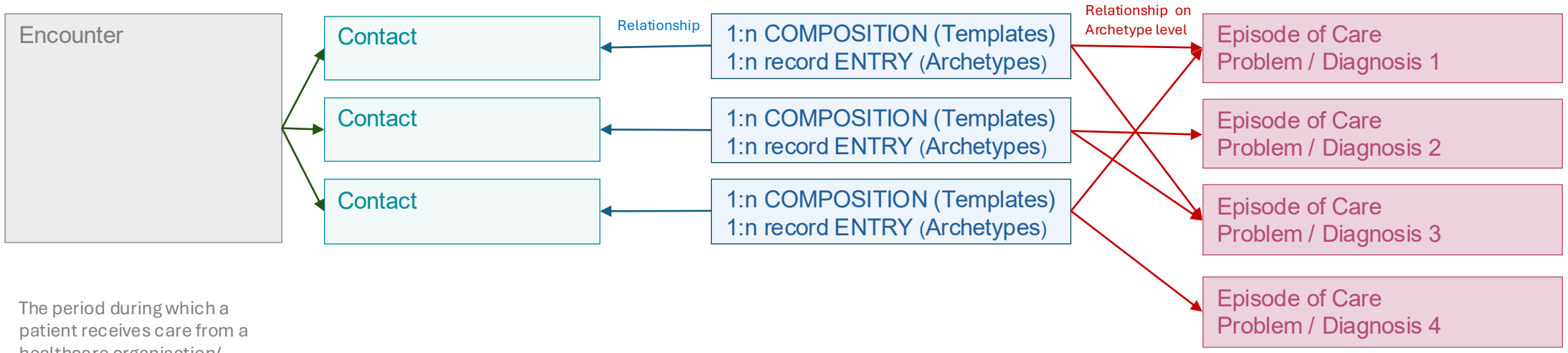
Episode of Care – Porting to openEHR

Encounter = Admin encounter **Contact = Care encounter** **Medical record entry** **Episode-of-Care = Health problem**



The period during which a patient receives care from a healthcare organisation/ service; it may span and aggregate several contacts. Represents the broader span of care that bundles those contacts into a clinically and administratively coherent unit. Some hospital visits may encompass several Encounters if units report their activity independently e.g. an initial ER Encounter followed by a Cardiology ward admission.

A single, point-in-time interaction between a patient and one (or more) care professionals that is documented as an event. Captures one discrete care encounter at a specific time and place (can be virtual).

A discrete item of documentation in the medical record (e.g., blood pressure measurement, laboratory result, progress note, diagnosis, order).

Roughly corresponding to the archetype level in openEHR

The overall period during which a patient receives care for a particular condition, regardless of which healthcare organisation was involved.

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Modelling in openEHR

Templates and Relationships

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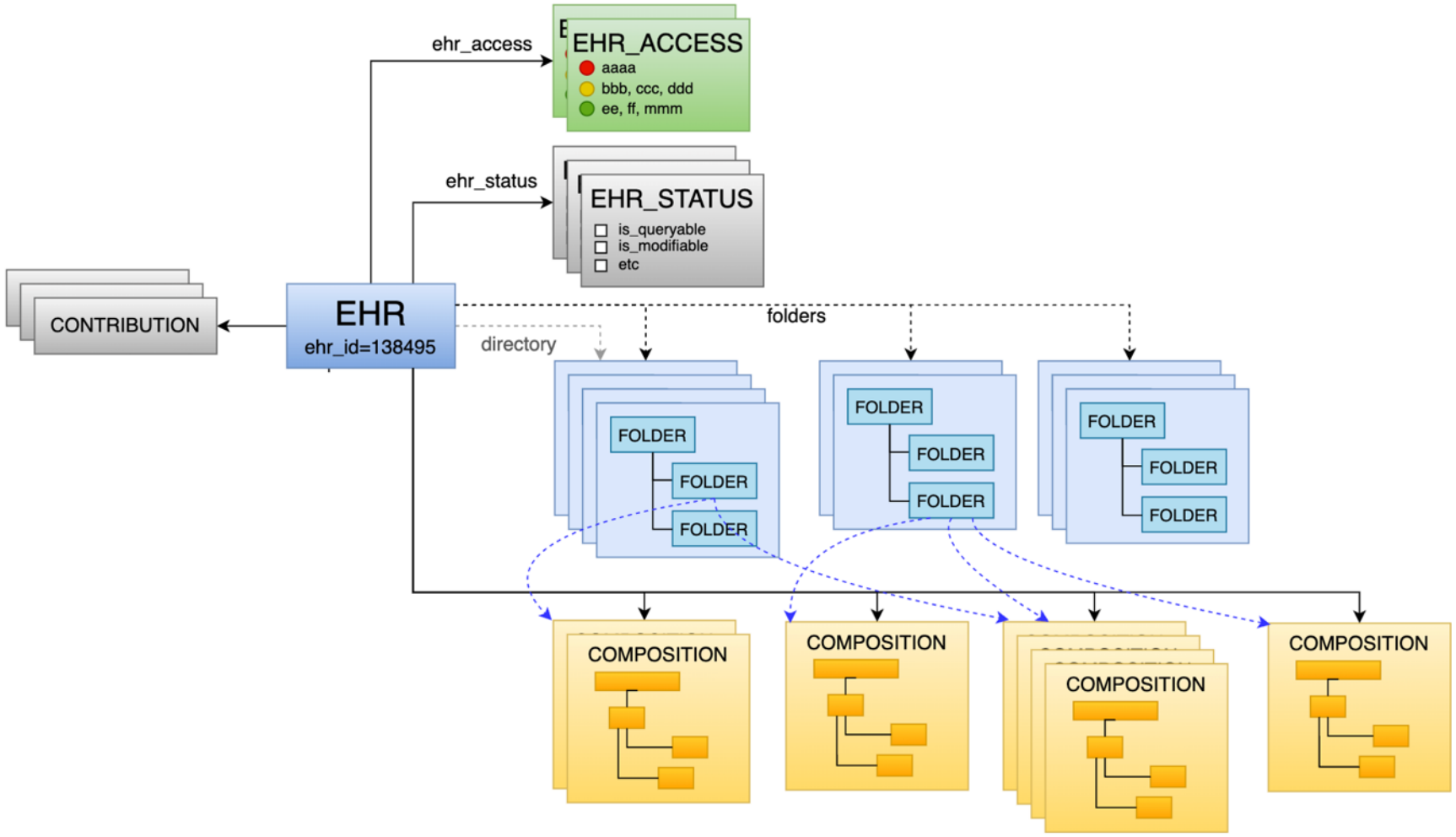
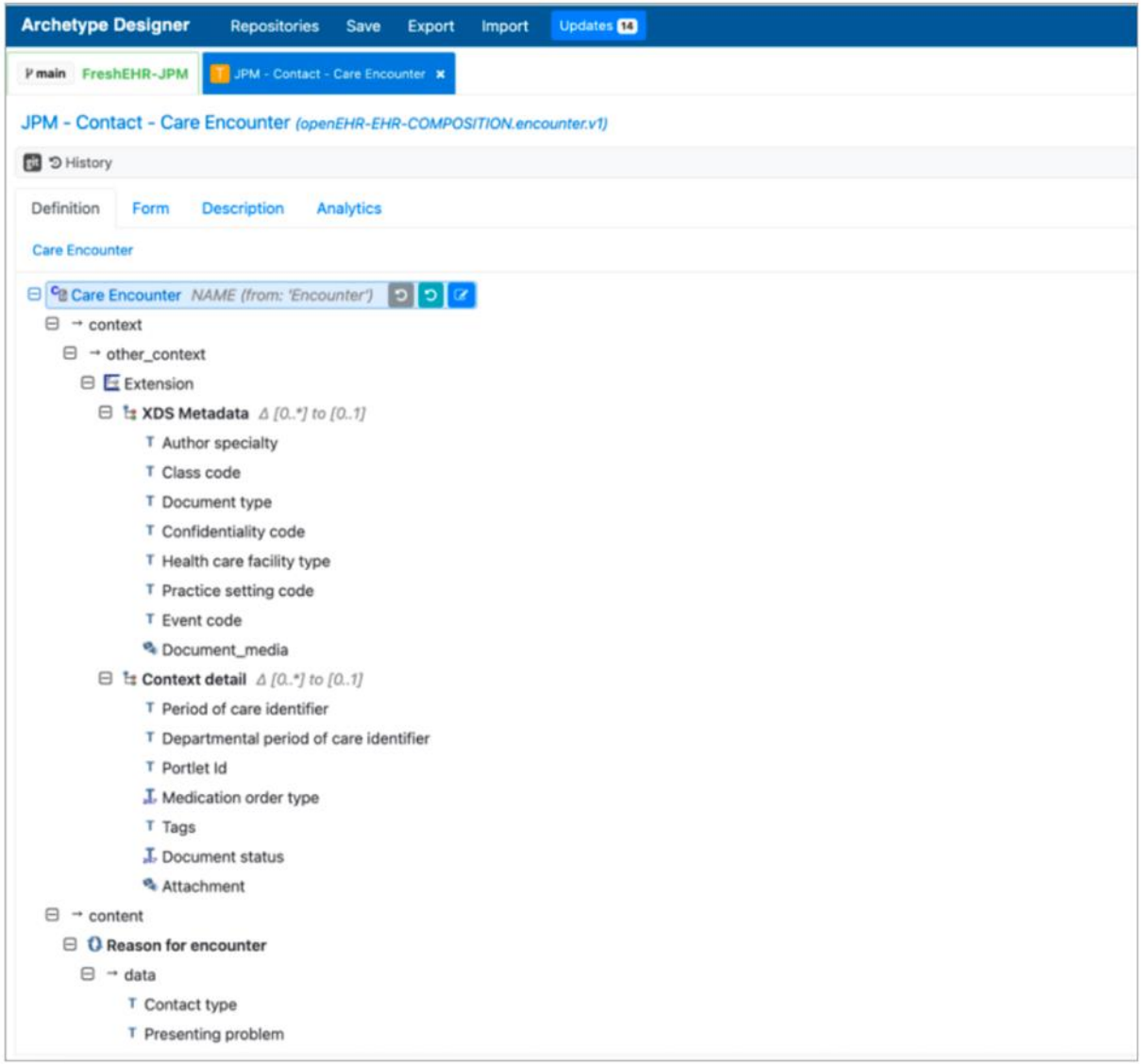
openEHR Basic structure



Template – Care encounter / contact

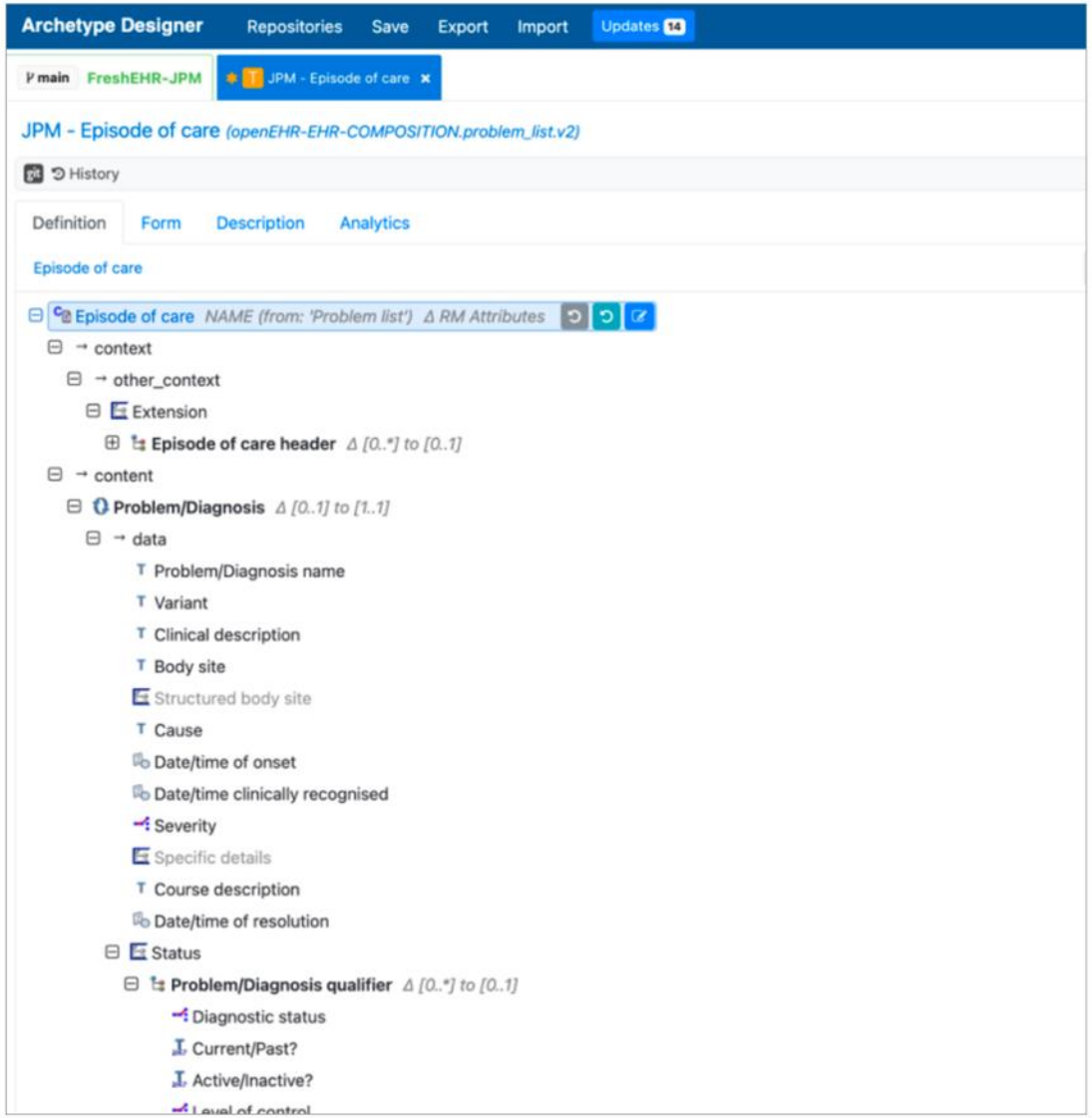


COMPOSITION
openEHR-EHR-COMPOSITION.encounter.v1

ENTRY_ARCHETYPES / CLUSTER
openEHR-EHR-CLUSTER.xds_metadata.v0
openEHR-EHR-CLUSTER.composition_context_detail.v1
openEHR-EHR-EVALUATION.reason_for_encounter.v1

Within Care Encounter or a separate template
for Admin Encounter:
openEHR-EHR-ADMIN_ENTRY.admin_encounter.v1

Template – Episode of Care



COMPOSITION
openEHR-EHR-COMPOSITION.problem_list.v2

ENTRY_ARCHETYPES / CLUSTER
openEHR-EHR-EVALUATION.problem_diagnosis.v1
openEHR-EHR-CLUSTER.problem_qualifier.v2
openEHR-EHR-CLUSTER.clinical_evidence.v1

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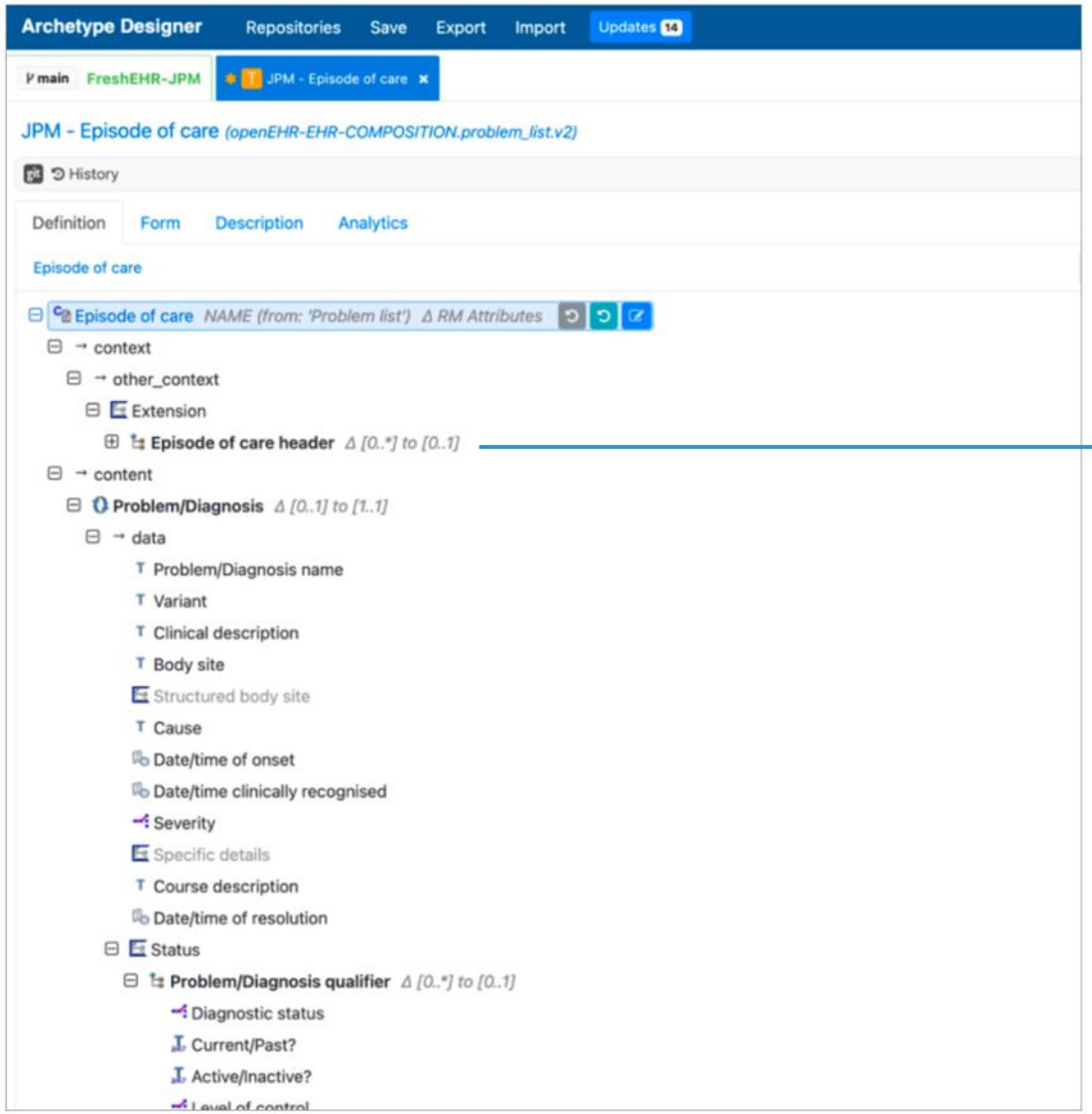
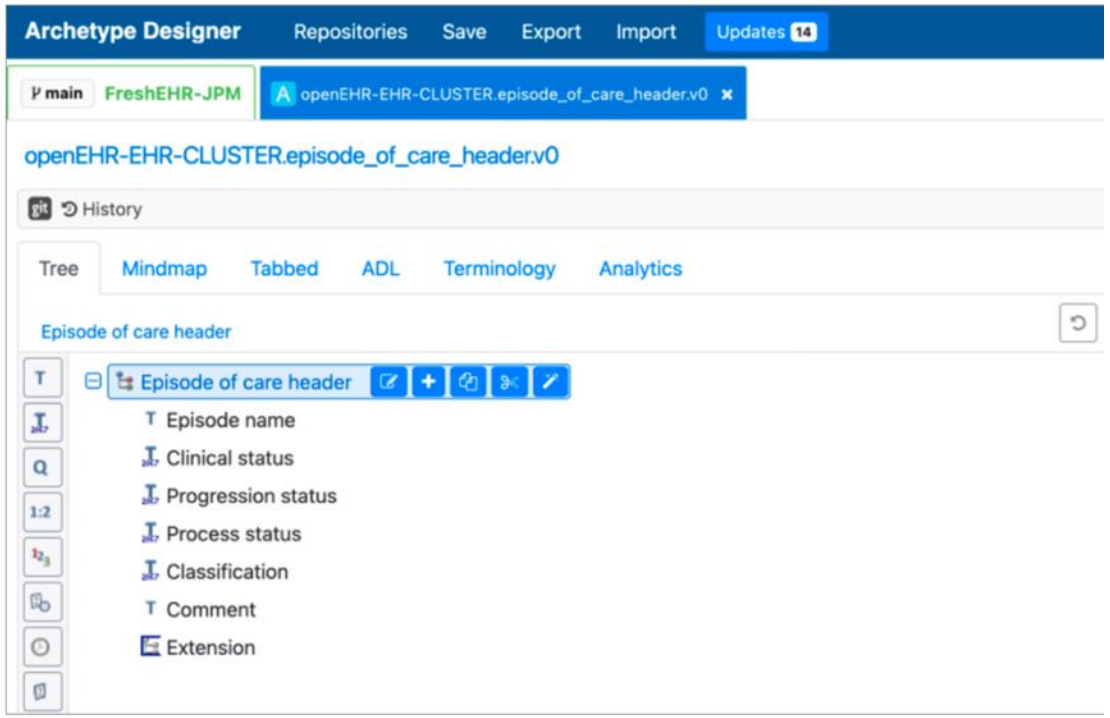
Template – Episode of Care





Episode name:	Most recent label of problem/diagnosis
Classification:	problem, diagnosis
Clinical status:	active, inactive, resolved
Progression status:	acut, chronic
Process status:	referral, admission, pre-operative, post-operative, discharge

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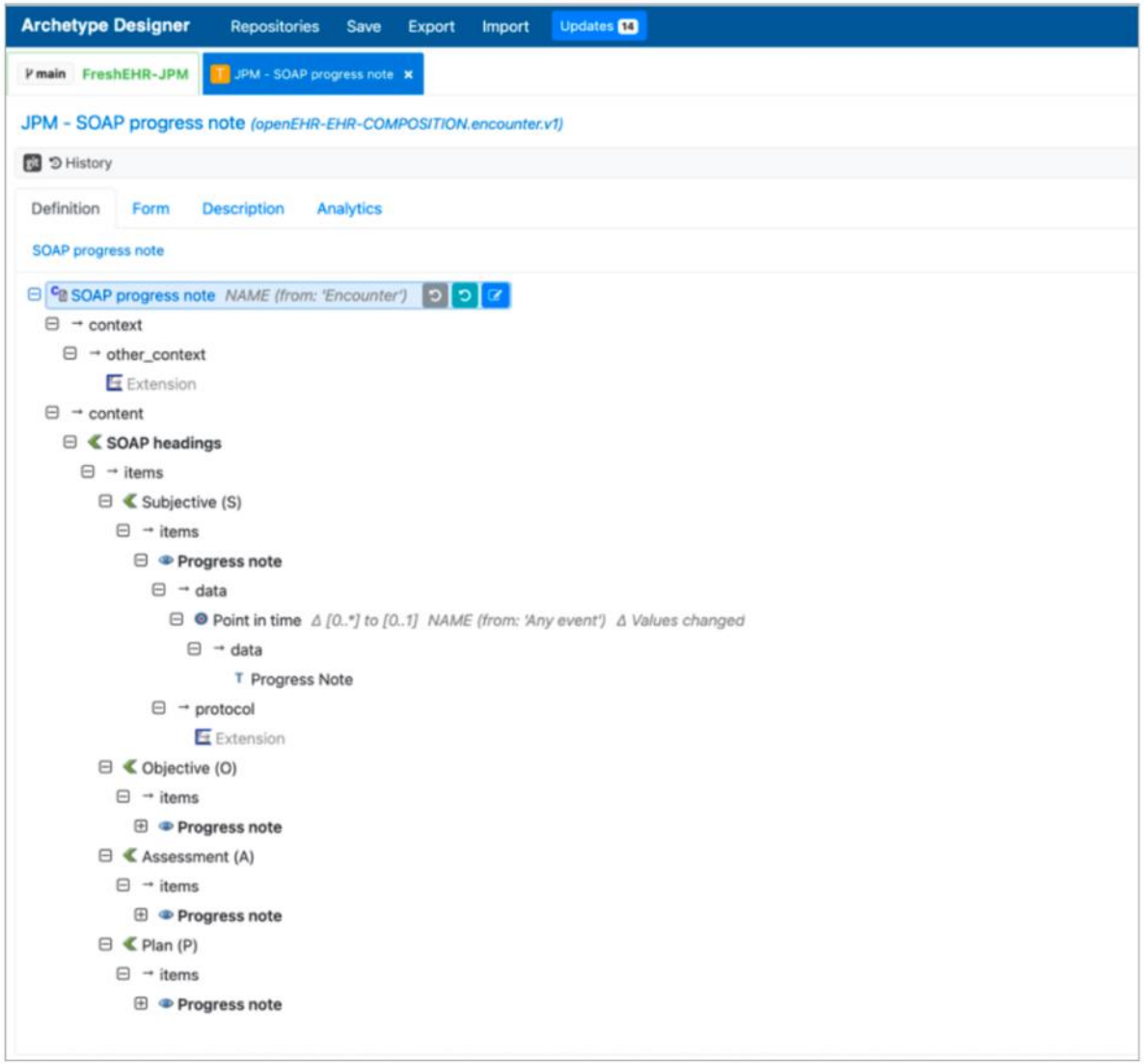
Template – Medical record entry – SOAP progress notes



SOAP Progress Note – according to Weed

Subjective: the patient's reported symptoms, concerns, and relevant context

Objective: observable findings and measurements (examination, tests, monitoring)

Assessment: clinical interpretation and reasoning, including working hypotheses

Plan: intended diagnostics, treatments, counselling, follow-up, and contingencies

COMPOSITION
openEHR-EHR-COMPOSITION.encounter.v1

ENTRY_ARCHETYPES / SECTION
openEHR-EHR-SECTION.soap.v0
openEHR-EHR-OBSERVATION.progress_note.v1

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openEHR mechanisms for expressing relationships between contacts, episodes of care and medical record entries

openEHR specification provides several mechanisms for expressing relationships between contacts, episodes of care and medical record entries

FOLDER

EHR.directory: Hierarchical index of references to compositions

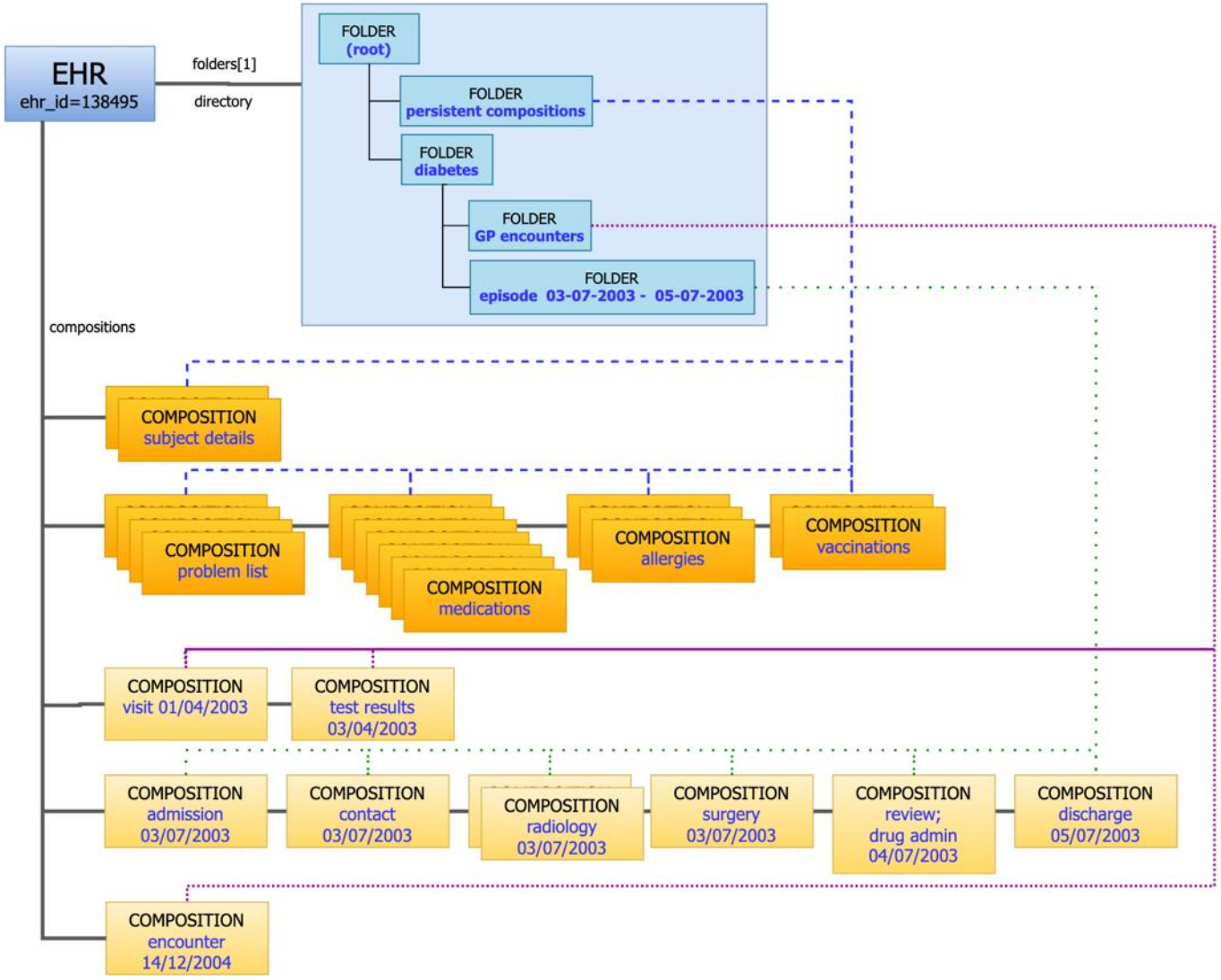
LINK

Links between LOCATABLEs: Typed links connecting compositions and archetyped items at the reference model level

CLUSTER

Link elements within CLUSTER archetypes: EHR-internal references as DV_EHR_URI ELEMENTs inside a CLUSTER

openEHR FOLDER



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FOLDER

```
{
  "_type": "FOLDER",
  "name": { "_type": "DV_TEXT", "value": "Directory" },                    /* Top-level 'Directory' folder (shared hierarchy) */
  "archetype_node_id": "openEHR-EHR-FOLDER.generic.v1",

  "details": {                                                             /* Root description elements */
    "_type": "ITEM_TREE",
    "items": [
      { "_type": "ELEMENT", "name": { "value": "description" },
        "value": { "_type": "DV_TEXT", "value": "Root folder used by all services; domain metadata resides in child folders." } }
    ]
  },

  "folders": [

    /* ==================== Fully detailed child folder ==================== */
    {
      "_type": "FOLDER",
      "name": { "_type": "DV_TEXT", "value": "Folder 1" },
      "archetype_node_id": "openEHR-EHR-FOLDER.generic.v1",

      "details": {
        "_type": "ITEM_TREE",
        "items": [
          /* metadata Folder 1 */
          { "_type": "ELEMENT", "name": { "value": "purpose" },
            "value": { "_type": "DV_TEXT", "value": "Shared index for episode/contact/section-based navigation" } },

          { "_type": "ELEMENT", "name": { "value": "governance_owner" },
            "value": { "_type": "DV_TEXT", "value": "Clinical Records Governance Team" } },

          { "_type": "ELEMENT", "name": { "value": "classification_scheme" },
            "value": { "_type": "DV_CODED_TEXT", "value": "Episode/Contact/Section",
              "defining_code": { "_type": "CODE_PHRASE",
                "terminology_id": { "value": "local" }, "code_string": "scheme-ecs" } } },

          { "_type": "ELEMENT", "name": { "value": "status" },
            "value": { "_type": "DV_CODED_TEXT", "value": "active",
              "defining_code": { "_type": "CODE_PHRASE",
                "terminology_id": { "value": "local" }, "code_string": "active" } } },

          { "_type": "ELEMENT", "name": { "value": "description" },
            "value": { "_type": "DV_TEXT", "value": "Domain-specific folder; references and optional deep links below." } },

          /* Optional deep link to a specific ENTRY inside a COMPOSITION */
          { "_type": "ELEMENT", "name": { "value": "entry_link_example" },
            "value": { "_type": "DV_EHR_URI",
              "value": "ehr://{ehr_id}/versioned_composition/11111111-2222-3333-4444-555555555555/entry/path/to/ENTRY" } }
        ]
      },

      "items": [  /* References to VERSIONED_COMPOSITIONs (no copies) */
        { "id": { "_type": "HIER_OBJECT_ID", "value": "11111111-2222-3333-4444-555555555555" },
          "namespace": "ehr.example.org", "type": "VERSIONED_COMPOSITION" }, /* e.g., encounter document */
        { "id": { "_type": "HIER_OBJECT_ID", "value": "22222222-3333-4444-5555-666666666666" },
          "namespace": "ehr.example.org", "type": "VERSIONED_COMPOSITION" }  /* e.g., vital signs */
      ],


      "folders": [ /* Optional subfolders for further classification */
        /* ... add subfolders here if needed ... */
      ]
    },

    /* ==================== Minimal stub of a second child folder ========== */
    {
      "_type": "FOLDER",
      "name": { "_type": "DV_TEXT", "value": "Folder 2" },
      "archetype_node_id": "openEHR-EHR-FOLDER.generic.v1"
      /* Stub: add 'details', 'items', and 'folders' analogous to 'Folder 1' as required */
    }
  ],

  "items": []  /* The top-level Directory usually does not reference COMPOSITIONs directly */
}
```

FOLDER

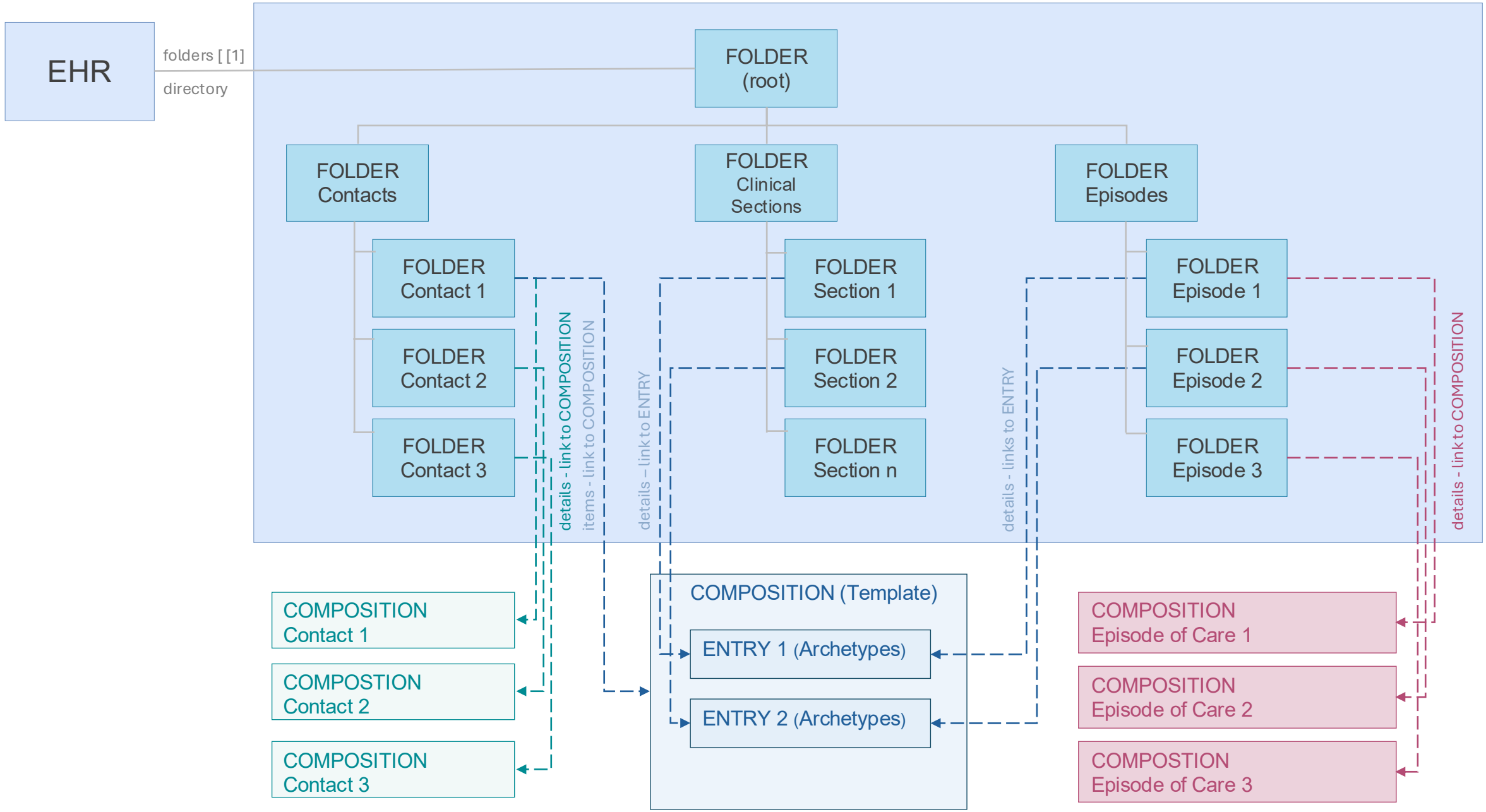
```
{
  "_type": "FOLDER",
  "name": { "_type": "DV_TEXT", "value": "Directory" },                    /* Top-level 'Directory' folder (shared hierarchy) */
  "archetype_node_id": "openEHR-EHR-FOLDER.generic.v1",

  "details": {                                                             /* Root description elements */
    "_type": "ITEM_TREE",
    "items": [
      { "_type": "ELEMENT", "name": { "value": "description" },
        "value": { "_type": "DV_TEXT", "value": "Root folder used by all services; domain metadata resides in child folders." } }
    ]
  },

  "folders": [
```

```
    /* ==================== Fully detailed child folder ======= */
    {
      "_type": "FOLDER",
      "name": { "_type": "DV_TEXT", "value": "Folder 1" },
      "archetype_node_id": "openEHR-EHR-FOLDER.generic.v1",

      "details": {
        "_type": "ITEM_TREE",
        "items": [
          /* metadata Folder 1 */
          { "_type": "ELEMENT", "name": { "value": "purpose" },
            "value": { "_type": "DV_TEXT", "value": "Shared index for episode/contact/section-based navigation" } },

          { "_type": "ELEMENT", "name": { "value": "governance_owner" },
            "value": { "_type": "DV_TEXT", "value": "Clinical Records Governance Team" } },

          { "_type": "ELEMENT", "name": { "value": "classification_scheme" },
            "value": { "_type": "DV_CODED_TEXT", "value": "Episode/Contact/Section",
              "defining_code": { "_type": "CODE_PHRASE",
                "terminology_id": { "value": "local" }, "code_string": "scheme-ecs" } } },

          { "_type": "ELEMENT", "name": { "value": "status" },
            "value": { "_type": "DV_CODED_TEXT", "value": "active",
              "defining_code": { "_type": "CODE_PHRASE",
                "terminology_id": { "value": "local" }, "code_string": "active" } } },

          { "_type": "ELEMENT", "name": { "value": "description" },
            "value": { "_type": "DV_TEXT", "value": "Domain-specific folder; references and optional deep links below." } },

          /* Optional deep link to a specific ENTRY inside a COMPOSITION */
          { "_type": "ELEMENT", "name": { "value": "entry_link_example" },
            "value": { "_type": "DV_EHR_URI",
              "value": "ehr://{ehr_id}/versioned_composition/11111111-2222-3333-4444-555555555555/entry/path/to/ENTRY" } }
        ]
      },

      "items": [  /* References to VERSIONED_COMPOSITIONs (no copies) */
        { "id": { "_type": "HIER_OBJECT_ID", "value": "11111111-2222-3333-4444-555555555555" },
          "namespace": "ehr.example.org", "type": "VERSIONED_COMPOSITION" }, /* e.g., encounter document */
        { "id": { "_type": "HIER_OBJECT_ID", "value": "22222222-3333-4444-5555-666666666666" },
          "namespace": "ehr.example.org", "type": "VERSIONED_COMPOSITION" }  /* e.g., vital signs */
      ],


      "folders": [ /* Optional subfolders for further classification */
        /* ... add subfolders here if needed ... */
      ]
    },

    /* ==================== Minimal stub of a second child folder ========== */
    {
      "_type": "FOLDER",
      "name": { "_type": "DV_TEXT", "value": "Folder 2" },
      "archetype_node_id": "openEHR-EHR-FOLDER.generic.v1"
      /* Stub: add 'details', 'items', and 'folders' analogous to 'Folder 1' as required */
    }
  ],

  "items": []  /* The top-level Directory usually does not reference COMPOSITIONs directly */
}
```

FOLDER

```
{
  "_type": "FOLDER",
  "name": { "_type": "DV_TEXT", "value": "Directory" },                    /* T
  "archetype_node_id": "openEHR-EHR-FOLDER.generic.v1",

  "details": {                                                             /*
    "_type": "ITEM_TREE",
    "items": [
      { "_type": "ELEMENT", "name": { "value": "description" },
        "value": { "_type": "DV_TEXT", "value": "Root folder used by all service
    ]
  },

  "folders": [

    /* ===================== Fully detailed child folder ===================== *
    {
      "_type": "FOLDER",
      "name": { "_type": "DV_TEXT", "value": "Folder 1" },
      "archetype_node_id": "openEHR-EHR-FOLDER.generic.v1",

      "details": {
        "_type": "ITEM_TREE",
        "items": [
          /* metadata Folder 1 */
          { "_type": "ELEMENT", "name": { "value": "purpose" },
            "value": { "_type": "DV_TEXT", "value": "Shared index for episode/co

          { "_type": "ELEMENT", "name": { "value": "governance_owner" },
            "value": { "_type": "DV_TEXT", "value": "Clinical Records Governance

          { "_type": "ELEMENT", "name": { "value": "classification_scheme" },
            "value": { "_type": "DV_CODED_TEXT", "value": "Episode/Contact/Secti
              "defining_code": { "_type": "CODE_PHRASE",
                "terminology_id": { "value": "local" }, "code_string": "scheme-e

          { "_type": "ELEMENT", "name": { "value": "status" },
            "value": { "_type": "DV_CODED_TEXT", "value": "active",
              "defining_code": { "_type": "CODE_PHRASE",
                "terminology_id": { "value": "local" }, "code_string": "active"

          { "_type": "ELEMENT", "name": { "value": "description" },
            "value": { "_type": "DV_TEXT", "value": "Domain-specific folder; ref

          /* Optional deep link to a specific ENTRY inside a COMPOSITION */
          { "_type": "ELEMENT", "name": { "value": "entry_link_example" },
            "value": { "_type": "DV_EHR_URI",
              "value": "ehr://{ehr_id}/versioned_composition/11111111-2222-3333-
        ]
      },

      "items": [  /* References to VERSIONED_COMPOSITIONs (no copies) */
        { "id": { "_type": "HIER_OBJECT_ID", "value": "11111111-2222-3333-4444-5
          "namespace": "ehr.example.org", "type": "VERSIONED_COMPOSITION" }, /*
        { "id": { "_type": "HIER_OBJECT_ID", "value": "22222222-3333-4444-5555-6
          "namespace": "ehr.example.org", "type": "VERSIONED_COMPOSITION" }  /*
      ],


      "folders": [ /* Optional subfolders for further classification */
        /* ... add subfolders here if needed ... */
      ]
    },

    /* ===================== Minimal stub of a second child folder ========== *
    {
      "_type": "FOLDER",
      "name": { "_type": "DV_TEXT", "value": "Folder 2" },
      "archetype_node_id": "openEHR-EHR-FOLDER.generic.v1"
      /* Stub: add 'details', 'items', and 'folders' analogous to 'Folder 1' as
    }
  ],

  "items": []  /* The top-level Directory usually does not reference COMPOSITIONs directly */
}
```

```
/* ===================== Fully detailed child folder ===================== */
{
  "_type": "FOLDER",
  "name": { "_type": "DV_TEXT", "value": "Folder 1" },
  "archetype_node_id": "openEHR-EHR-FOLDER.generic.v1",

  "details": {
    "_type": "ITEM_TREE",
    "items": [
      /* metadata Folder 1 */
      { "_type": "ELEMENT", "name": { "value": "purpose" },
        "value": { "_type": "DV_TEXT", "value": "Shared index for episode/contact/section-based navigation" } },

      { "_type": "ELEMENT", "name": { "value": "governance_owner" },
        "value": { "_type": "DV_TEXT", "value": "Clinical Records Governance Team" } },

      { "_type": "ELEMENT", "name": { "value": "classification_scheme" },
        "value": { "_type": "DV_CODED_TEXT", "value": "Episode/Contact/Section",
          "defining_code": { "_type": "CODE_PHRASE",
            "terminology_id": { "value": "local" }, "code_string": "scheme-ecs" } } },

      { "_type": "ELEMENT", "name": { "value": "status" },
        "value": { "_type": "DV_CODED_TEXT", "value": "active",
          "defining_code": { "_type": "CODE_PHRASE",
            "terminology_id": { "value": "local" }, "code_string": "active" } } },

      { "_type": "ELEMENT", "name": { "value": "description" },
        "value": { "_type": "DV_TEXT", "value": "Domain-specific folder; references and optional deep links below." } },

      /* Optional deep link to a specific ENTRY inside a COMPOSITION */
      { "_type": "ELEMENT", "name": { "value": "entry_link_example" },
        "value": { "_type": "DV_EHR_URI",
          "value": "ehr://{ehr_id}/versioned_composition/11111111-2222-3333-4444-555555555555/entry/path/to/ENTRY" } }
    ]
  },

  "items": [  /* References to VERSIONED_COMPOSITIONs (no copies) */
    { "id": { "_type": "HIER_OBJECT_ID", "value": "11111111-2222-3333-4444-555555555555" },
      "namespace": "ehr.example.org", "type": "VERSIONED_COMPOSITION" }, /* e.g., encounter document */
    { "id": { "_type": "HIER_OBJECT_ID", "value": "22222222-3333-4444-5555-666666666666" },
      "namespace": "ehr.example.org", "type": "VERSIONED_COMPOSITION" }  /* e.g., vital signs */
  ],

  "folders": [ /* Optional subfolders for further classification */
    /* ... add subfolders here if needed ... */
  ]
},
```



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LINKS

Minimal full COMPOSITION skeleton (RAW) with links

```
{
 "_type": "COMPOSITION",
 "archetype_node_id": "openEHR-EHR-COMPOSITION.encounter.v1",
 "name": { "_type": "DV_TEXT", "value": "Progress note" },
 "language": { "_type": "CODE_PHRASE", "terminology_id": { "value": "ISO_639-1" }, "code_string": "en" },
 "territory": { "_type": "CODE_PHRASE", "terminology_id": { "value": "ISO_3166-1" }, "code_string": "US" },
 "category": {
  "_type": "DV_CODED_TEXT",
  "value": "event",
  "defining_code": { "_type": "CODE_PHRASE", "terminology_id": { "value": "openehr" }, "code_string": "433" }
 },
 "composer": { "_type": "PARTY_IDENTIFIED", "name": "Dr. Example" },
 "context": { "_type": "EVENT_CONTEXT", "start_time": { "_type": "DV_DATE_TIME", "value": "2025-09-01T10:30:00Z" } },

 "links": [
  {
   "_type": "LINK",
   "meaning": { "_type": "DV_TEXT", "value": "primary association to episode" },
   "type":   { "_type": "DV_TEXT", "value": "episode_of_care" },
   "target": {
    "_type": "DV_EHR_URI",
    "value": "ehr://{ehr_uuid}/composition/{episode_object_uid}"
   }
  }
 ],

 "content": [
  /* your ENTRY instances here */
 ]
}
```

Link:

- Meaning (ISO-derived value set)
- Type: no normative value-set
- Target: DV_EHR_URI

LINKS

1. Link to Container/HEAD of the COMPOSITION

```
"links": [
 {
  "_type": "LINK",
  "meaning": { "_type": "DV_TEXT", "value": "primary association to episode" },
  "type":   { "_type": "DV_TEXT", "value": "episode_of_care" },
  "target": {
   "_type": "DV_EHR_URI",
   "value": "ehr://{ehr_uuid}/composition/{episode_object_uid}"
  }
 }
]
```

Link to COMPOSITION

2. Link to as Specific version of the COMPOSITION:

```
"links": [
 {
  "_type": "LINK",
  "meaning": { "_type": "DV_TEXT", "value": "primary association to episode" },
  "type":   { "_type": "DV_TEXT", "value": "episode_of_care" },
  "target": {
   "_type": "DV_EHR_URI",
   "value": "ehr://{ehr_uuid}/composition/{episode_object_uid}::{system_id}::{version_number}"
  }
 }
]
```

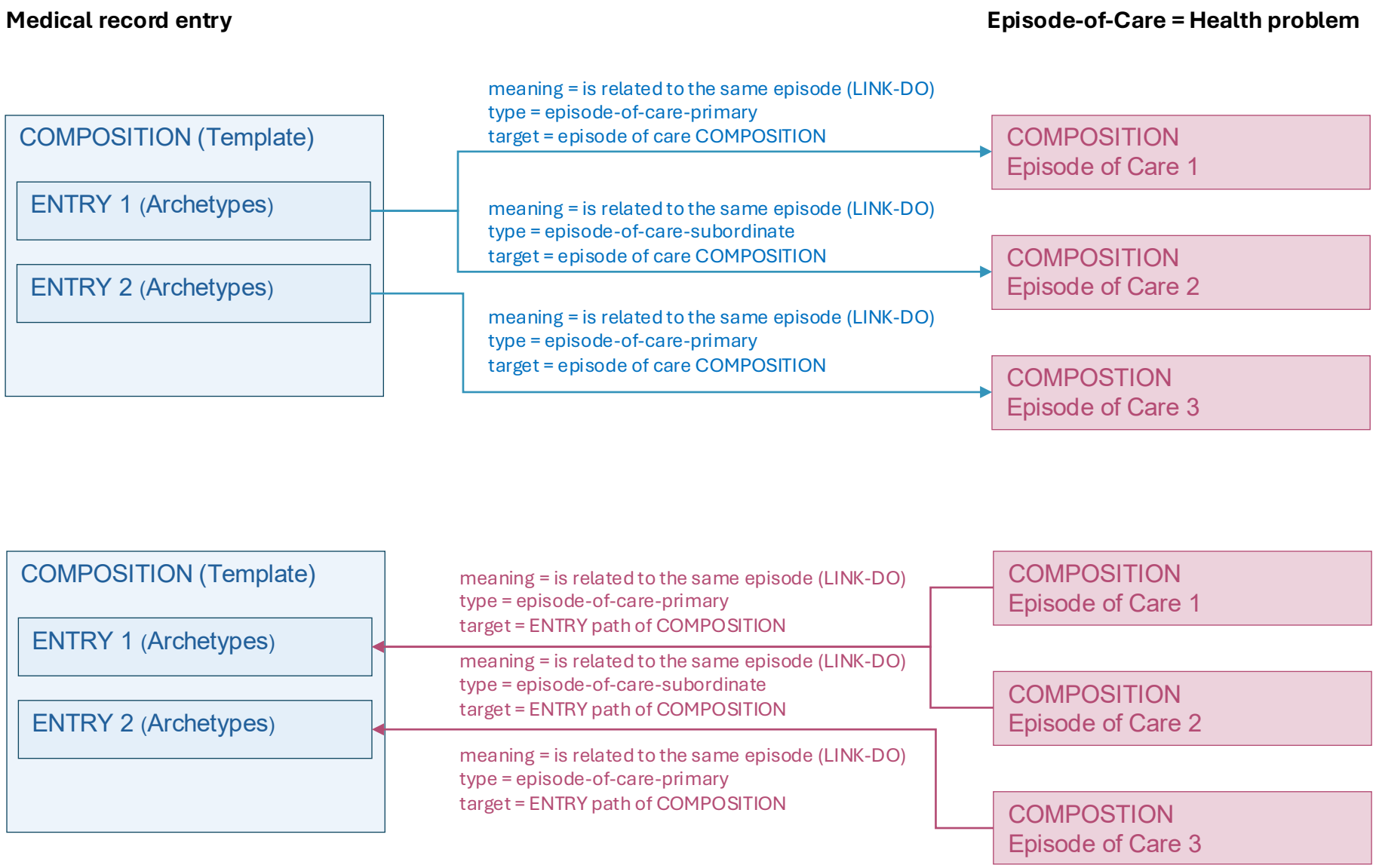
Link to specific version of COMPOSITION

3. Link directly to an ENTRY inside that episode COMPOSITION (use an openEHR path):

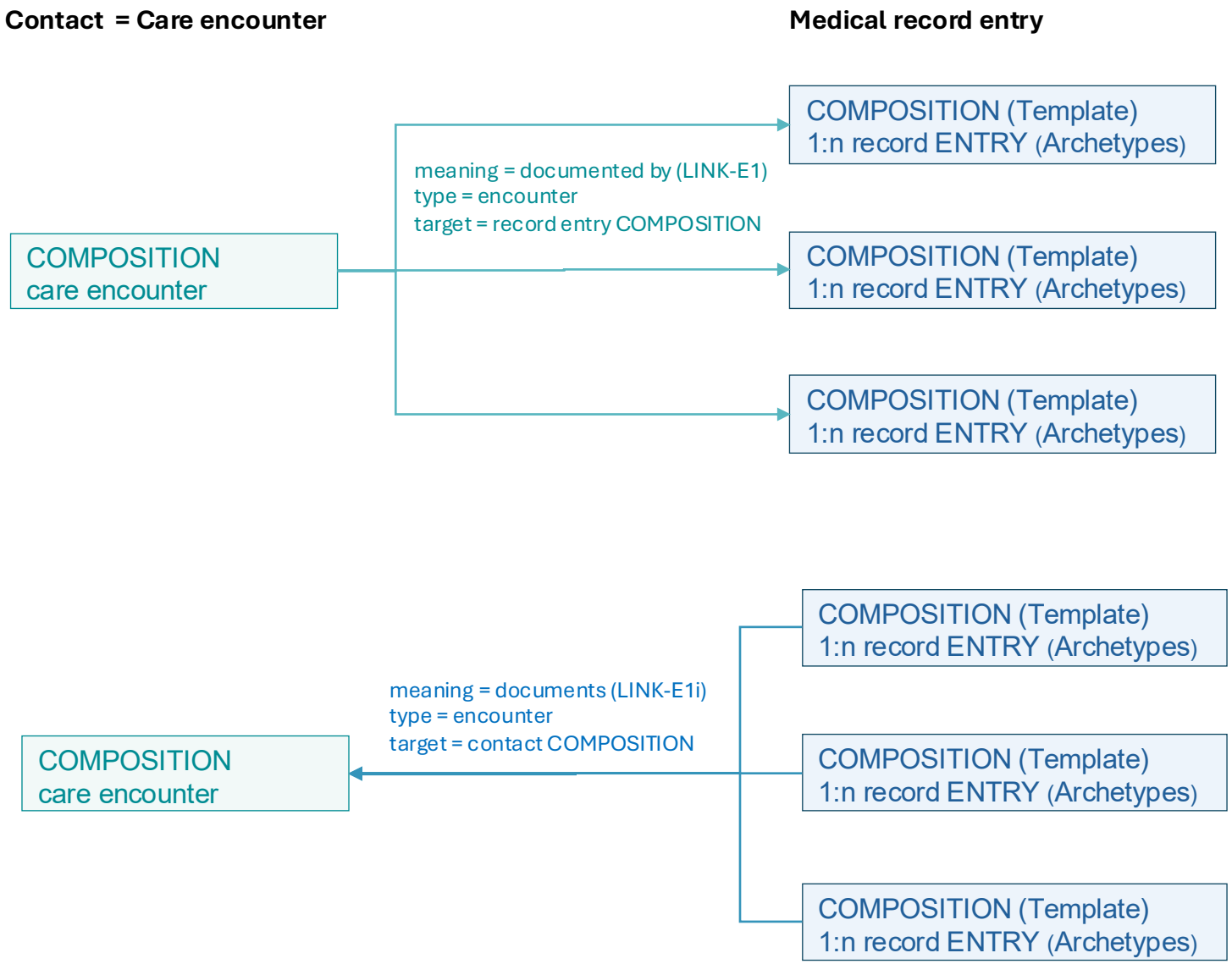
```
"links": [
 {
  "_type": "LINK",
  "meaning": { "_type": "DV_TEXT", "value": "supports episode diagnosis" },
  "type":   { "_type": "DV_TEXT", "value": "diagnosis" },
  "target": {
   "_type": "DV_EHR_URI",
   "value": "ehr://{ehr_uuid}/composition/{episode_object_uid}/content[openEHR-EHR-EVALUATION.problem_diagnosis.v1]"
  }
 }
]
```

Link to an ENTRY inside of a COMPOSITION

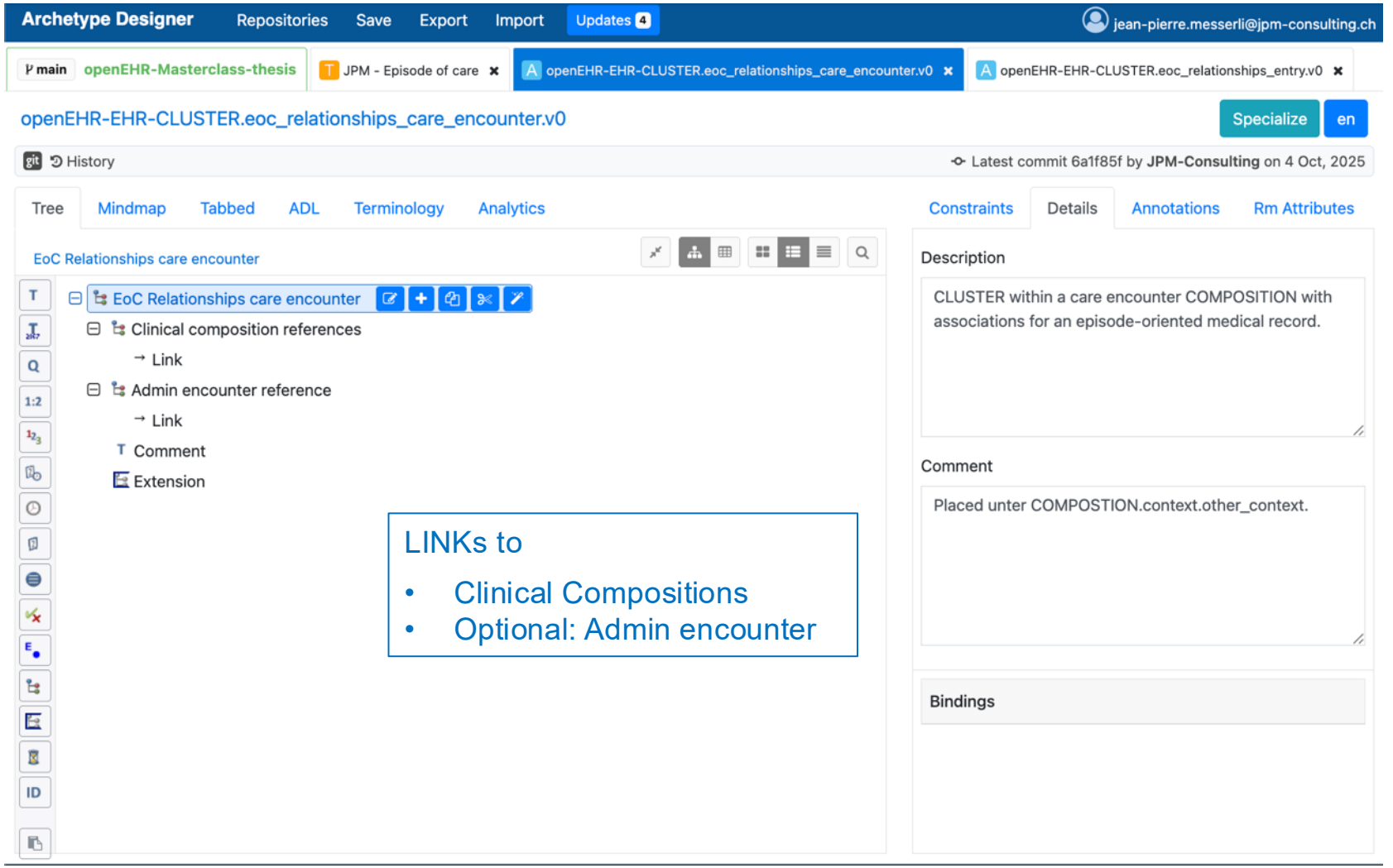
LINKS – Bidirectional



LINKS – Bidirectional



CLUSTER within a care encounter COMPOSITION



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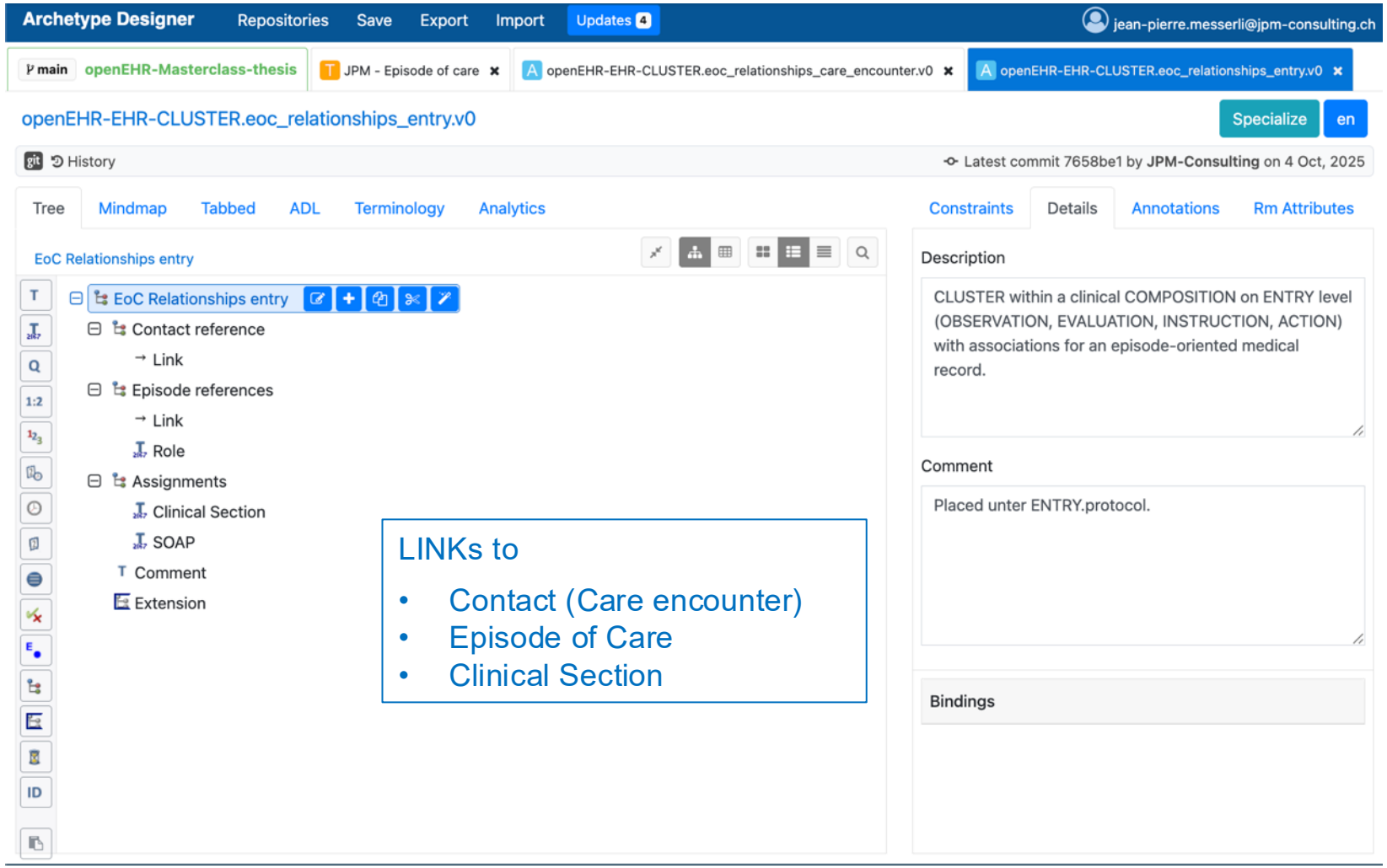
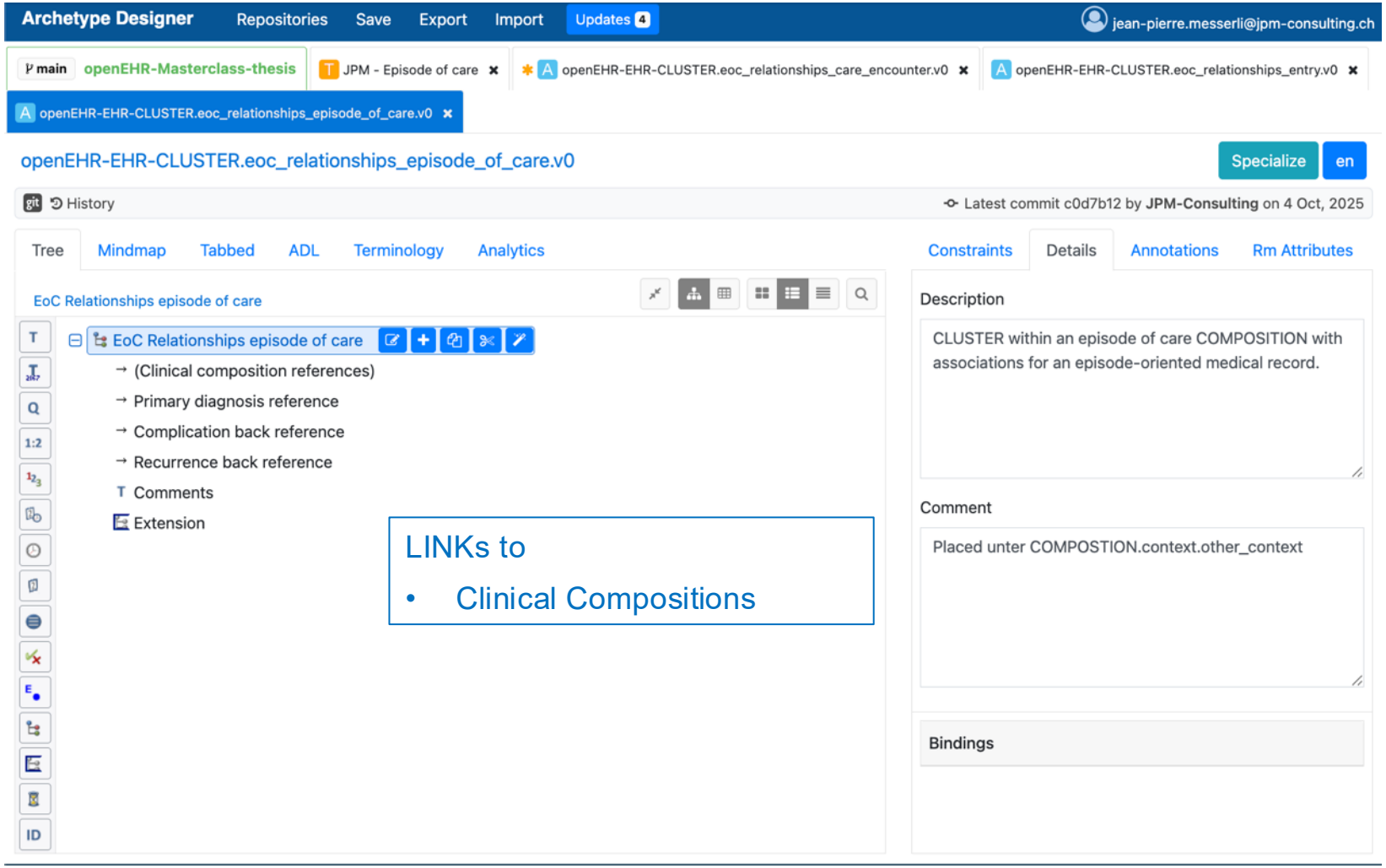
CLUSTER within a clinical COMPOSITION on ENTRY level



CLUSTER within an episode-of-care COMPOSITION

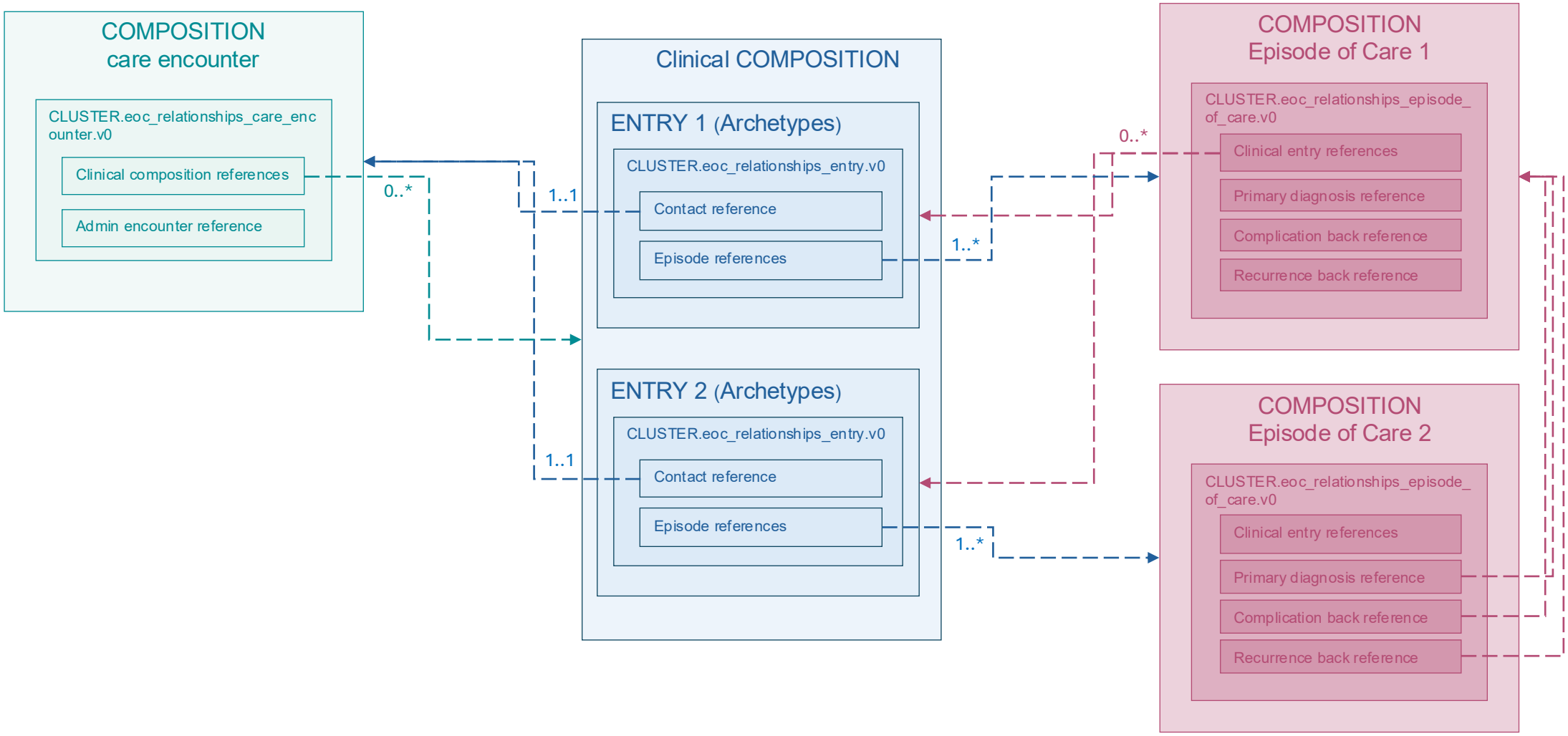


CLUSTERs

Contact = Care encounter

Medical record entry

Episode-of-Care = Health problem



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Evaluation framework for comparing different approaches 1/2

Topic	Short Explanation	Values/Options
Standard compliance	Is the approach part of the official openEHR specifications?	Yes, no
CDR versioning	Does the CDR automatically create a new version on update with this approach?	Yes, no
Template effort	Effort required to author templates for this approach	High (per archetype), Medium, Low (centralized)
Maintainability	Ease of maintenance - duplicates vs single source of truth	Low, Medium (duplicates), High (single source)
Tool ecosystem	Modelling tools that support this approach out of the box	Archetype Designer, CKM, Other
Programmatic support	Can it be managed via APIs or SDKs?	Yes, no
Archetype maturity	Required archetype management level	Proprietary, CKM v0 (draft), CKM v1+ (published)
Terminology scope	Level of terminology support required	None (proprietary), National, International
Query options	Available query interfaces	AQL, REST-API only, Both

Evaluation framework for comparing different approaches 2/2

Single-statement AQL	Can all relevant data be retrieved in one AQL statement?	Yes No (multi-step/pseudo-join)
Multiple use	Supports multiple use (e.g. multiple RM LINKs per COMPOSITION; COMPOSITION referenced by multiple folders)	Yes, no
Cross-CDR interoperability	Suitability across different CDR repositories and system boundaries.	Yes, no
Flexibility	Adaptability to new requirements	Low, Medium, High, Very High
Runtime performance impact	Expected effect on system performance	Low (negligible), Medium, High, Very High
Governance effort	Governance level needed for sustainable maintenance	Archetype-level, RM-level
Suitability for multi-vendor ecosystem	Suitability for uniform implementation across different vendors	Easy, medium, difficult
Implementation complexity	Overall complexity to implement	Low, Medium, High, Very High
Implementation guide	Availability of implementation guidance	Exists, to be developed

Take home messages

- The Episode of Care is the appropriate concept for current and future requirements in clinical documentation.
- An Episode of Care represents one health problem or diagnosis and is the CDR's single source of truth for it.
- The Care Encounter / Contact the smallest meaningful unit of clinical documentation - enabling clinically useful views of the patient record.
- Episode of Care enables comparisons of cost and quality and provides the foundation for value-based healthcare.
- All together turns EHR data into actionable knowledge.

Contact information

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