

Why Open Clinical History Exists

Open Clinical History began with a simple problem: a patient's medical history may exist, but that does not mean the person treating them can easily see or understand it.

A complex health history can span many years, hospitals, specialists, imaging providers, pathology services and clinical systems. Important information may be contained in scanned letters, discharge summaries, old reports and documents created by organisations that do not share a common clinical record.

The result is fragmentation.

At a new specialist appointment, the patient or their carer may once again be asked to explain years of medical history from memory, even though much of that history has already been documented somewhere.

Open Clinical History was created to explore a better way of presenting that information.

The problem is not always missing information

A significant challenge in healthcare is that information can be present but difficult to use.

A folder containing hundreds of clinical documents is technically a health record, but it is not necessarily an understandable clinical history.

A clinician may need to determine:

- what happened;
- when it happened;
- which conditions are ongoing;
- which procedures were performed;
- which investigations were significant;
- how one event relates to another;
- which part of the body was involved;

- and which source document supports each piece of information.

Doing this manually takes time.

For patients with long or complicated histories, the cognitive burden can be substantial for both clinicians and patients.

The patient should not be the integration layer

In fragmented healthcare environments, the patient or carer often becomes the person responsible for connecting the systems together.

They carry documents between providers, remember previous diagnoses, explain earlier procedures and try to reconstruct the sequence of events for each new clinician.

That is an unreliable way to manage a complex longitudinal history.

People forget dates. Clinical terminology can be difficult to remember. Important details can be lost when a complicated history is reduced to a short verbal explanation during an appointment.

Open Clinical History is based on the idea that software should help perform that integration work.

From documents to clinical events

The project therefore focuses on converting source material into a structured sequence of clinical events.

Instead of treating a discharge summary or specialist letter as a single object, Open Clinical History examines the clinical information contained within it.

A single document may describe:

- a diagnosis;
- a procedure;
- an investigation;
- a medication change;
- an admission;
- a complication;
- a follow-up;

- or a clinical outcome.

These events can then be placed into the wider longitudinal history.

Consistent clinical terminology

Free text is essential in healthcare, but free text alone makes it difficult to consistently classify and connect information from different sources.

Open Clinical History therefore uses SNOMED CT as a terminology foundation.

The goal is to preserve the original clinical meaning while also associating events with recognised clinical concepts where appropriate.

This provides a common vocabulary across records that may have been created years apart and by different organisations.

Making the history understandable

Open Clinical History is also designed around the idea that a clinical history should be understandable at more than one level.

A user may first want to see the broad story:

- major diagnoses;
- admissions;
- procedures;
- complications;
- important investigations;
- and changes over time.

They can then drill into the details and, where necessary, return to the original source document.

Anatomical visualisation provides another way of understanding the history by showing which parts of the body are associated with particular events.

Supporting, not replacing, clinical judgement

The purpose of Open Clinical History is not to make clinical decisions on behalf of a healthcare professional.

Its purpose is to organise fragmented information so that the existing history can be understood more quickly and reviewed more effectively.

Where automated extraction or classification is used, the result should remain auditable and traceable to the underlying source.

The broader goal

The longer-term goal of Open Clinical History is to demonstrate a practical model for converting fragmented health information into a structured, standards-aware longitudinal history that can be useful to both clinicians and patients.

The project brings together:

- unstructured document ingestion;
- clinical event extraction;
- SNOMED CT terminology;
- anatomical classification;
- provenance;
- longitudinal visualisation;
- and future interoperability standards.

The central idea is simple:

A patient's history should be more than a pile of documents. It should tell the clinical story.

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