

PART THREE · SNOMED CT IN PRACTICE

SNOMED CT in Practice

Experiences and implementation guidance

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SNOMED CT Expo · September 2026

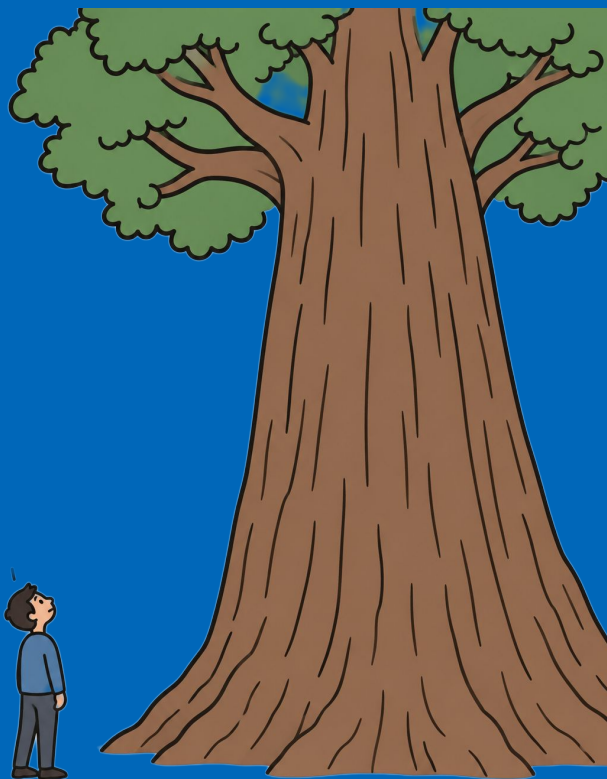


Have you ever heard the claim...

01

~~SNOMED CT is too big~~

It is exactly
as big as
medicine
requires



02

~~There is no evidence that SNOMED CT works~~

The evidence
is there, but
SNOMED CT is
a means,
not the end



03

~~SNOMED CT is difficult to implement~~

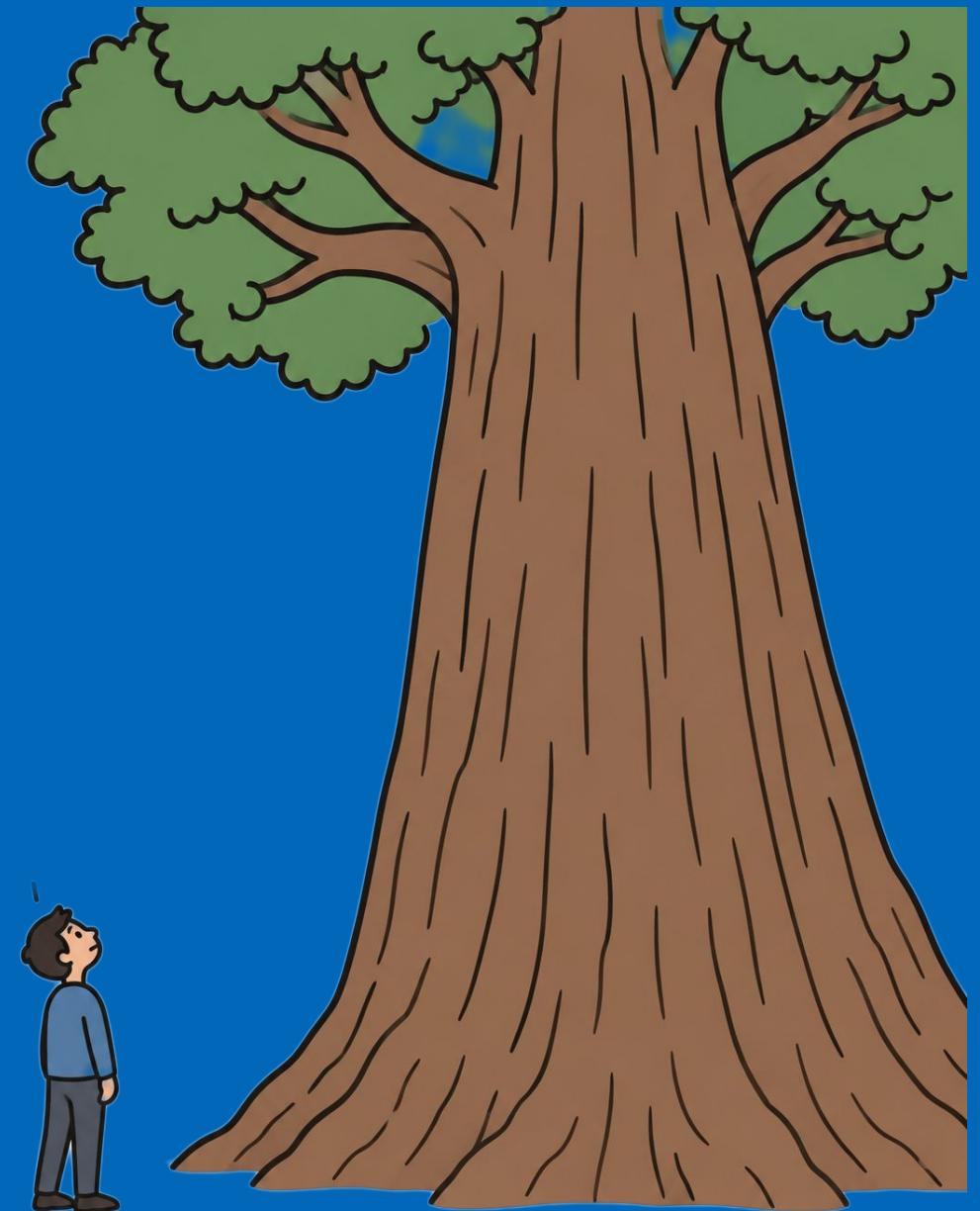
It has a
learning curve,
not a cliff edge



PART THREE · CLAIM 01

Is snomed ct too big?

It is exactly as big as medicine requires, and built to be navigated in slices, not memorised whole.



too big compared to what?

A terminology that represented medicine faithfully with far fewer concepts would not exist. It would be a blunter tool asked to do the same job.

THE REALITY: IT IS THE SHAPE OF
MEDICINE

350K+

active concepts across 19 hierarchies

The number people react to is not arbitrary.
It is what clinical granularity costs.

size is scope, not sprawl

ICD-11 FOUNDATION

80K+

of terms before any extension coding is applied

LOINC OBSERVATIONS

100K+

terms for laboratory and clinical observations alone

RXNORM DRUG SPACE

10Ks

of ingredients linked by hundreds of thousands of relationships

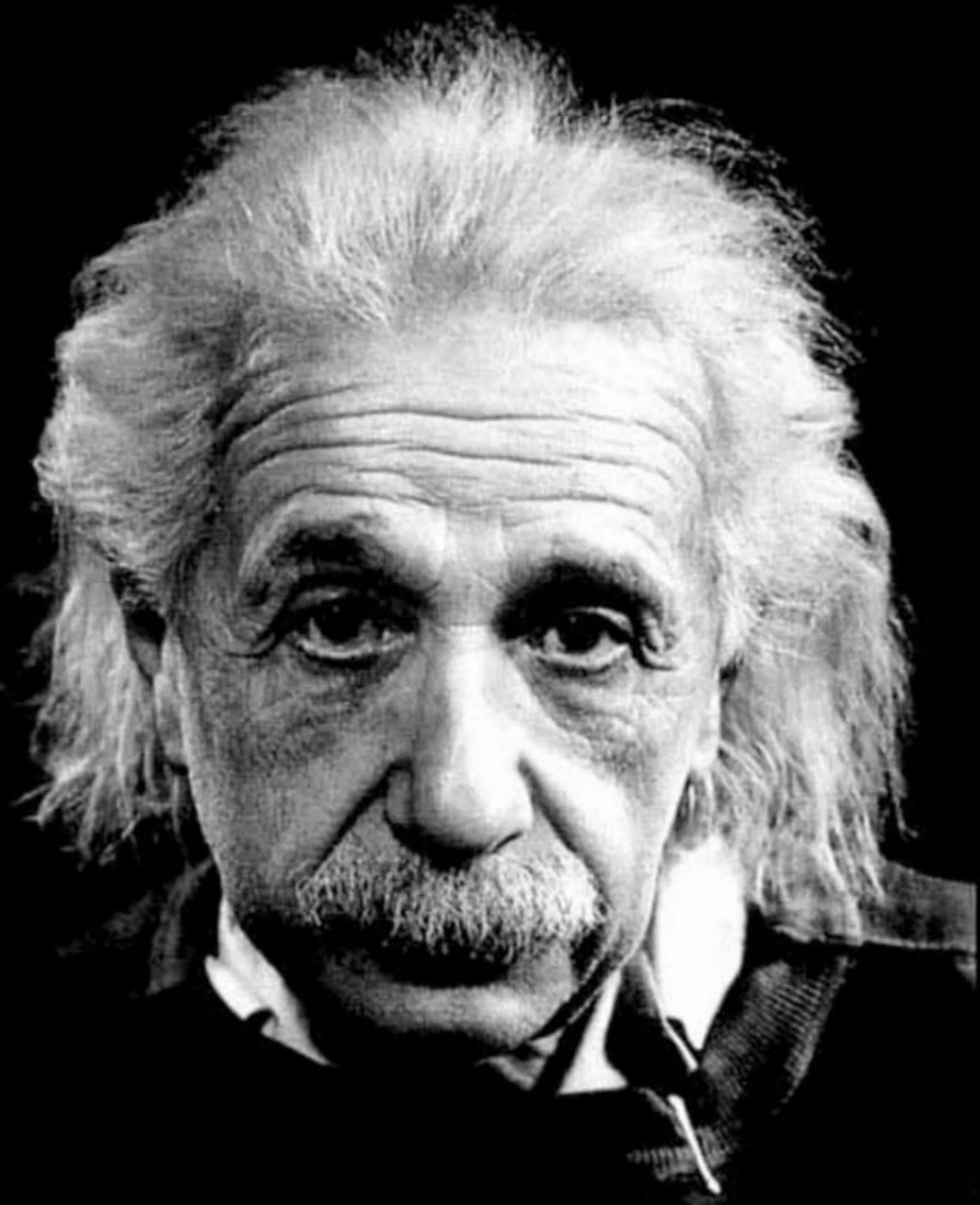
Strip SNOMED CT down and the lost granularity does not disappear. It moves into free text and uncontrolled local extensions.

KEY TAKEAWAY

Bigger-and-structured beats smaller-and-unstructured.

“Everything should be made
as simple as possible,
but not simpler.”

Albert Einstein



nobody works with all of it at once

Modular by design

Real consumption happens through curated slices: reference sets and use-case starter sets.

Skewed usage

A small fraction of concepts accounts for the majority of clinical documentation in any given setting.

Computable retrieval

ECL and subsumption testing define exactly the subset you need, instead of browsing the full hierarchy.

THE CLINICAL EXPERIENCE

The size a clinician actually confronts is whatever slice the use case defines.

<< 64572001 |Disease|

example: scoping one subset with ecl

01 Start from a root.
Everything below Disease.

```
<< 64572001 |Disease|
```

02 Constrain by attribute.
Only diseases sited in the lung.

```
<< 64572001 |Disease| : 363698007 |Finding site| = << 39607008 |Lung  
structure|
```

03 Exclude what you don't need. Drop the infectious branch.

```
<< 64572001 |Disease| : 363698007 |Finding site| = << 39607008 |Lung  
structure| MINUS << 40733004 |Infectious disease|
```

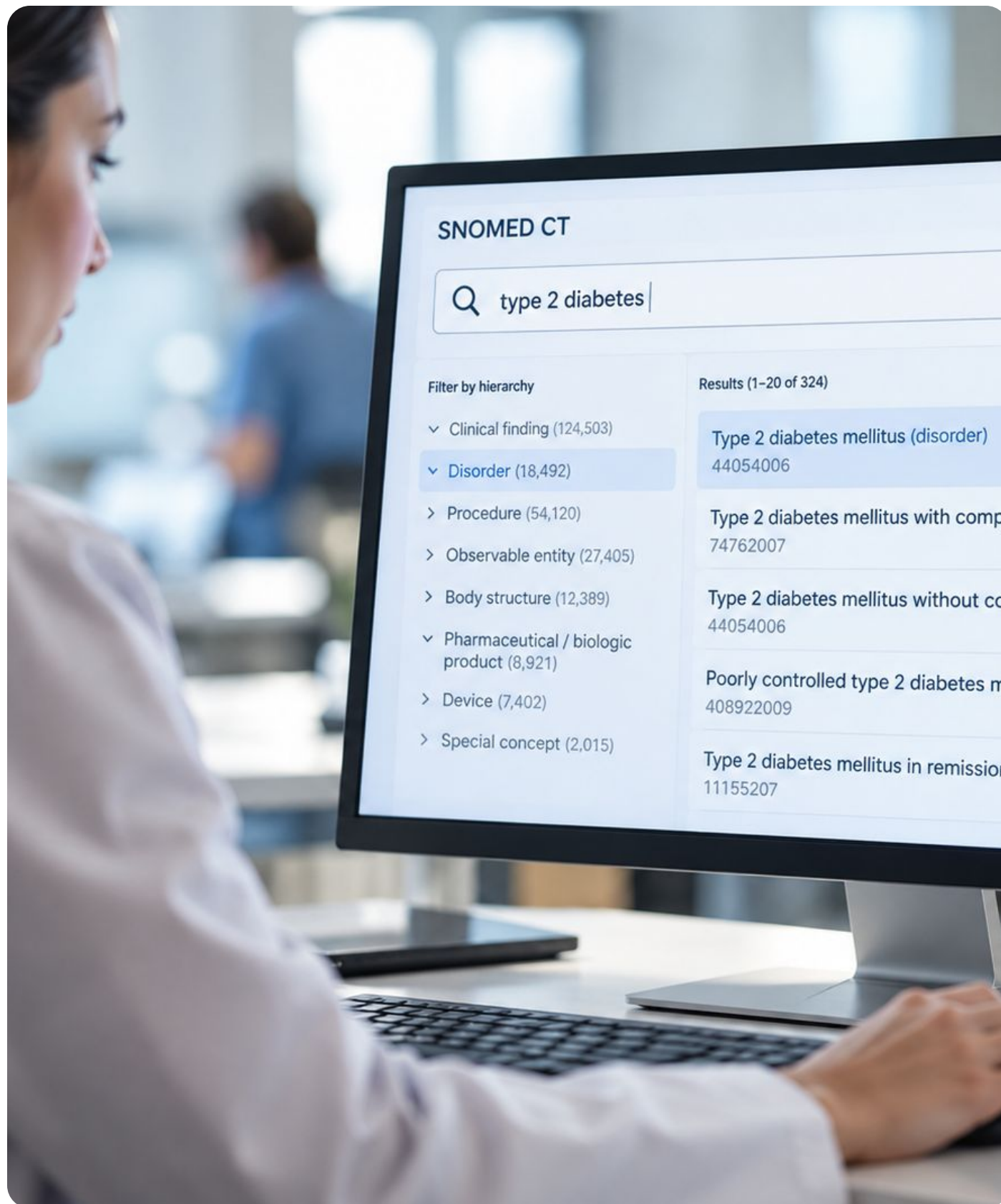
04 Bind to a reference set.
What the system loads and the clinician searches.

```
^ |Respiratory problem list reference set|
```

The expression is the specification. It is re-evaluated at every release, so the subset stays current without manual re-curation.

SCALE & TOOLING

the scale problem is solved by tooling



Search, not memorisation

Terminology servers and ECL authoring turn 350,000+ concepts into a search problem.

The real comparison

Not SNOMED CT versus a smaller code list, but SNOMED CT versus free text and its clinical risks.

The evident winner

On safety, analytics and interoperability, the large governed terminology wins every time it is measured.

Tooling handles the complexity, so clinical utility is never traded away.

example: structured input instead of a new concept

THE CLINICAL IDEA

Closed fracture of the left radius

ONE OPTION

Request a new pre-coordinated concept, and another for every laterality, morphology and site combination after it.

THE RECOMMENDED APPROACH

Capture it as structured input. The form holds one field per attribute, and each field is bound to a concept that already exists.



STRUCTURED DATA ENTRY

DIAGNOSIS	Fracture of bone
FINDING SITE	Bone structure of radius
LATERALITY	Left
MORPHOLOGY	Closed fracture

Every field carries a coded value, so the record stays queryable and the edition does not grow by a single concept.

PART THREE · CLAIM 02

where is the evidence?

A look at the research, clinical outcomes and system evaluations that measure the impact of SNOMED CT.



snomed ct is a means, not the end

WHAT IT IS

Semantic meaning and logical assertions

Computable infrastructure and a common language, defining concepts and their structural relationships.

Answers: what does this data mean?

≠

WHAT IT CANNOT DO ALONE

Dynamic clinical evidence

No decision rules, protocols, guidelines or situational logic.

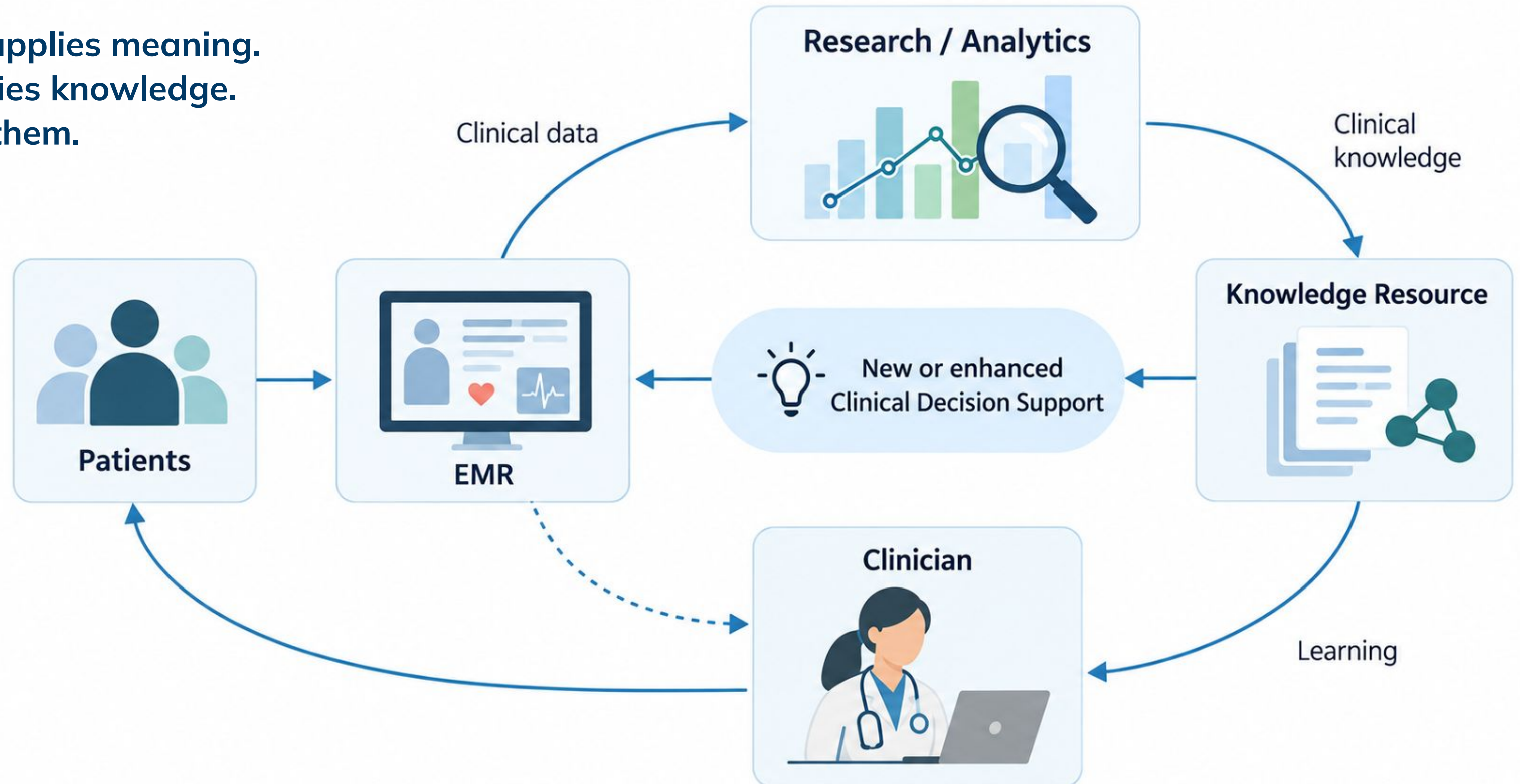
External engines execute decisions on patient context.

Answers: nothing about what to do next.

You cannot query terminology to discover clinical evidence.

Where the evidence actually goes

SNOMED CT supplies meaning.
Evidence supplies knowledge.
CDS connects them.



Separating terminology business logic

THE SIMPLISTIC CDS ALERT

Drug A + Drug B present



“Therefore: interaction!”

(Interactions are not defining properties of the concepts)

THE CLINICAL TERMINOLOGY BOUNDARY

Terminology

≠

clinical knowledge
(rules and guidelines)

≠

clinical decision
(contextual action)

Make clinical knowledge computable over **meaningful data**.

Active ingredients vs. causative agents in CDS

THE CDS ALLERGY ALERT

Drug (Active Ingredient X) +
Allergy (Causative Agent X)



“Therefore: Allergy Alert!”

(CDS rule matches Active Ingredient with
Causative Agent)

THE CLINICAL TERMINOLOGY BOUNDARY

Terminology

≠

clinical knowledge

(CDS rules linking ingredient to causative agent)

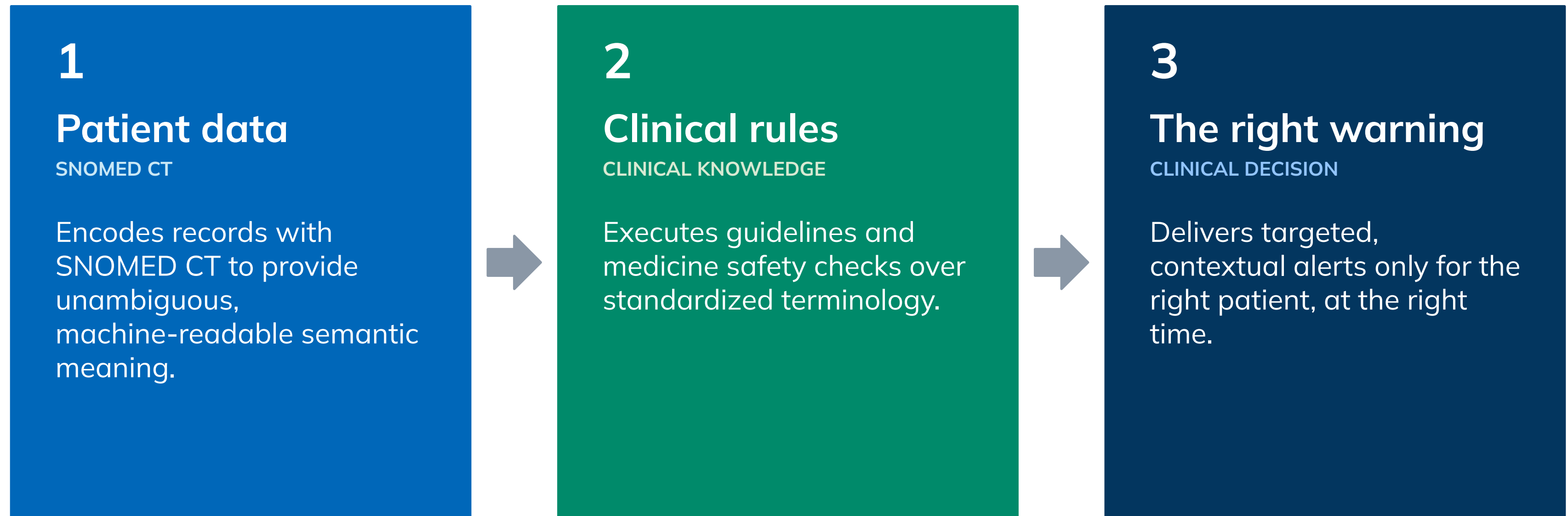
≠

clinical decision

(contextual action & risk evaluation)

Terminology relates drugs & allergens; CDS executes the decision logic.

Coded data makes clinical rules work



SNOMED CT gives the meaning. Guidelines give the knowledge. Together: safer care.

what snomed ct safely asserts

01 · CLINICAL IDENTITY

Semantic meaning

Lobar pneumonia means acute inflammation of one or more lobes of the lung.

02 · HIERARCHICAL RELATION

Generalisation

Lobar pneumonia is a Pneumonia, which is an Infectious disease of the lung.

03 · DEFINING ATTRIBUTES

Structural logic

Finding site: Lung structure. Associated morphology: Inflammation.

Computers can infer that this patient has an infectious disease of the lung, with no rule written for every clinical variation.

Example: one query, every variant

CODED WITH SNOMED CT

```
<< 233604007 |Pneumonia|
```

Lobar pneumonia,
Bronchopneumonia,
Aspiration pneumonia,
Pneumonia due to *Streptococcus pneumoniae*
...and every descendant added in later releases

One expression.
No maintenance when content changes.

THE SAME PATIENTS IN FREE TEXT

```
LIKE '%pneumon%'
```

"LLL pneumonia"
"?pneumonia, treat as CAP"
"chest infection"
"HAP, day 4 post-op" "pnuemonia"

Five strings, one typo, one abbreviation, and a query that misses patients.

The granularity has to live somewhere. Coded, it is queryable; written out, it is not.

SNOMED CT helps computers find patients at risk

PLANNED BRAIN SURGERY · UK

36 % → 4 %

patients missed, before and after

A computer read the notes of 2 268 patients and found the SNOMED CT concepts in them. It then warned about patients who would need intensive care.

Ive et al., npj Digital Medicine, 2025

DIABETES · 8 HOSPITALS, SPAIN

2 years

early estimate of kidney disease risk

SNOMED CT concepts from the records of 588 786 people with type 2 diabetes. The model also worked in 2 other hospitals.

Navarro-González et al., Kidney Diseases

Coded data saves lives

CAMBRIDGE, UK

42 %

**fewer deaths from
sepsis**

Automatic sepsis warnings
in the record. At least 64 lives
saved in 2018.

NORTH YORK, CANADA

56 %

**fewer preventable
deaths from pneumonia
and COPD**

The coded diagnosis opens
the correct, evidence-based
treatment plan. More than
120 lives saved in 5 years.

BARTS HEALTH, LONDON, UK

30 %

**fewer infectious patients
in shared wards**

Automatic infection reports
from coded laboratory results.
Staff can see at once who
must be isolated.

Coded data saves time and money

NORTH YORK, CANADA

38.1 M

Canadian dollars of costs avoided in 5 years, from less harm to patients. After paying for the system: 1.2 M net saving.

CAMBRIDGE, UK

£1.1 M

of nurses' time saved every year. Plus £460 000 a year, because paper records are no longer needed.

EAST LONDON, UK

1 233

referrals avoided every year, with one shared, coded patient record for 1.5 million people.

MACKAY, AUSTRALIA

67 %

shorter waiting lists (up to) for diabetes, with care pathways built on SNOMED CT.

Record once. Use the data for safety, reporting and planning.

Source: SNOMED CT Case Studies, The Case for Investment, SNOMED International, 2021 ·
More evidence: snomed.org/value-of-snomedct

PART THREE · CLAIM 03

How difficult is it to implement?

Structured implementation frameworks, tooling and migration pathways, and where they already exist.



SNOMED CT is not simple

01

Massive scale

Over 360,000 active concepts in a multi-layered polyhierarchy. Unprecedented coverage, but it needs structured navigation.

02

Logical foundation

Formal description logic, not a flat code list. It behaves as an ontology, with machine-readable clinical relationships.

03

Expressive power

ECL and the concept model are where the depth lives, and they take professional training to use well.

Complexity is the byproduct of clinical precision, and it pays out across every downstream system.

Layered, not mandatory

Most people using SNOMED CT never touch its full complexity.



01

Simple interfaces

Clinicians interact through search-select-record, not the raw terminology.

KEY TAKEAWAYS

- Search & select interaction
- Complexity hidden behind UI
- Fast, intuitive clinical recording



02

Specialised skills

Subsumption, ECL and authoring are needed by a small terminology team, not by everyone.

KEY TAKEAWAYS

- Subsumption & ECL queries
- Dedicated terminology team
- Minimal training required for end-users



03

Targeted scope

You scope what you need: a subset or reference set, not the whole edition.

KEY TAKEAWAYS

- Custom subsets & refsets
- Domain-specific scoping
- Streamlined data footprint



04

Software & vendors

Software tools and EHR vendors embed SNOMED CT via standard APIs and terminology servers.

KEY TAKEAWAYS

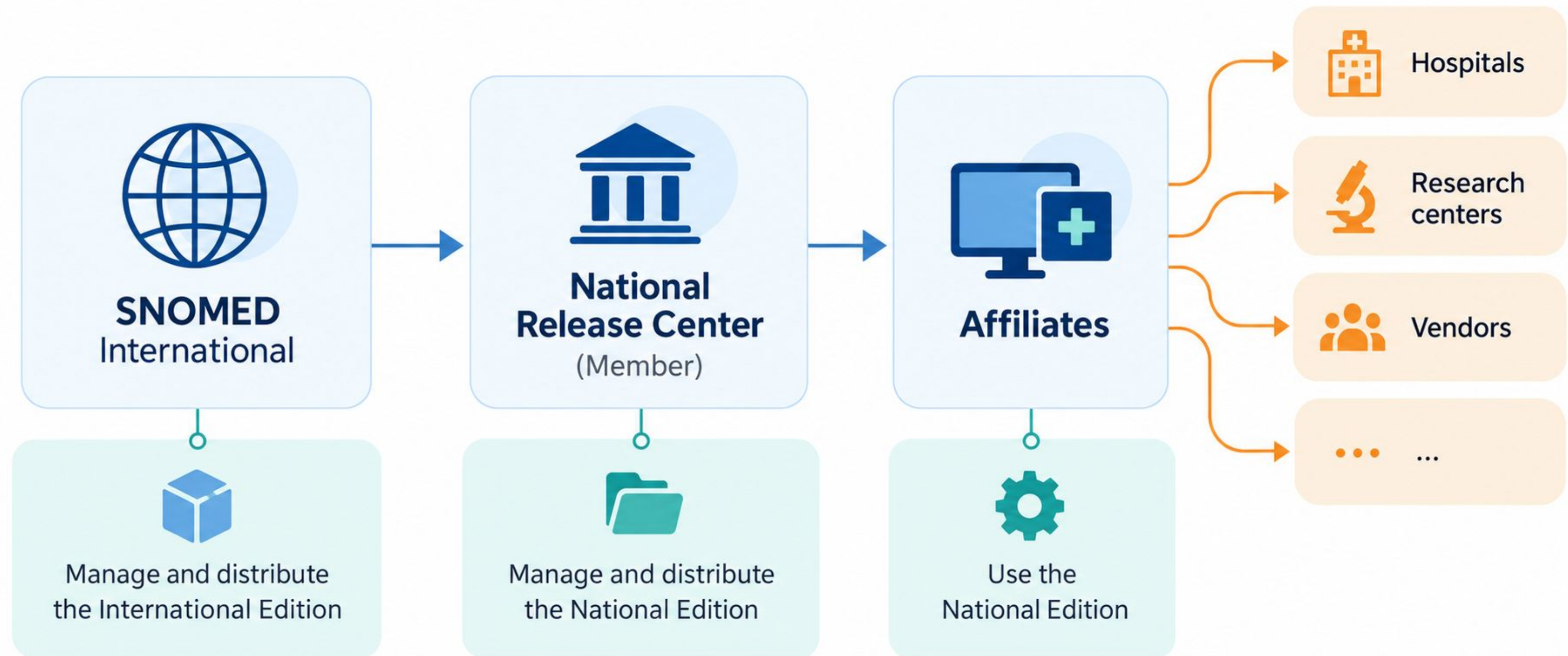
- Standard API integration
- Terminology server support
- Off-the-shelf vendor tooling

How SNOMED CT Reaches Clinical Systems



Every step has existing tooling and a named point of contact.
None of it has to be built from scratch.

How SNOMED CT Reaches Clinical Systems



One International Edition, many national extensions

Local Extension

Facility or vendor-specific content, built on top of the editions above it

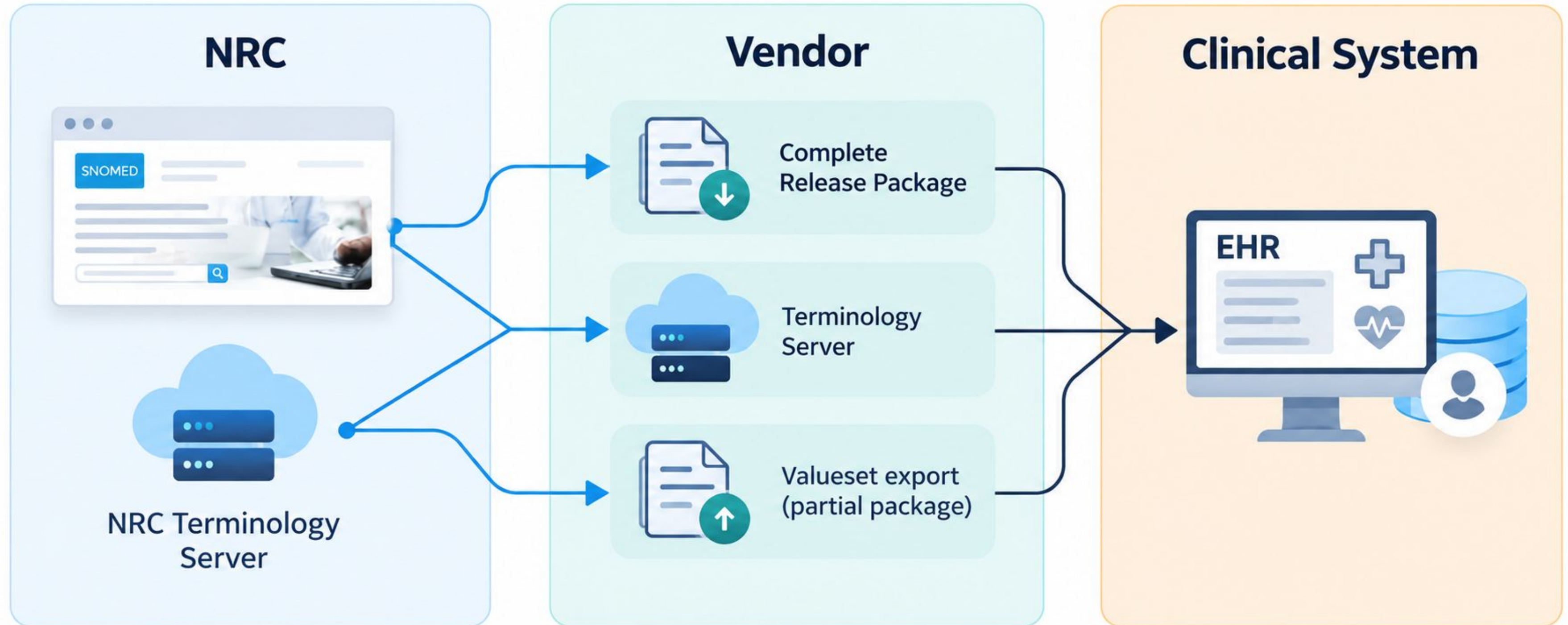
National Extension

Country-specific content, maintained by each Member's National Release Center, SNOMED CT-US, SNOMED CT-UK, SNOMED CT-AU and others

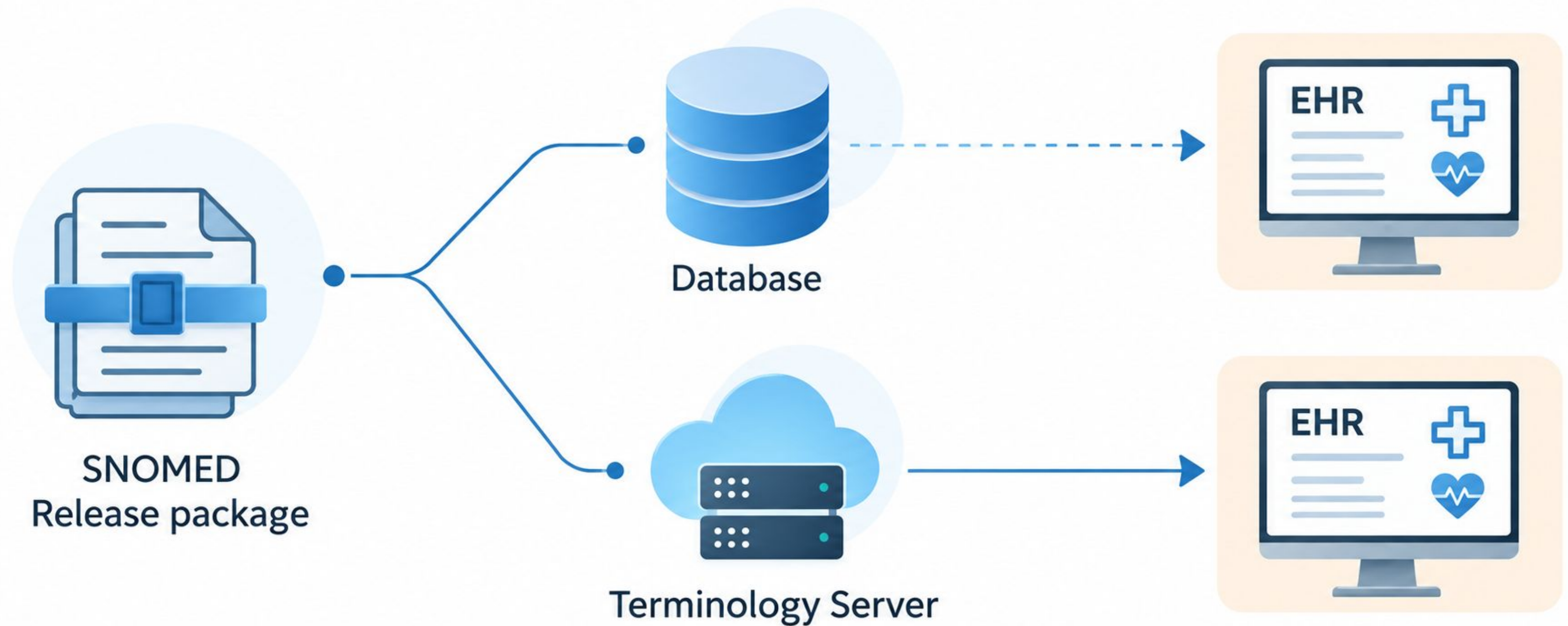
International Edition

The common core, maintained by SNOMED International, released on the first of every month

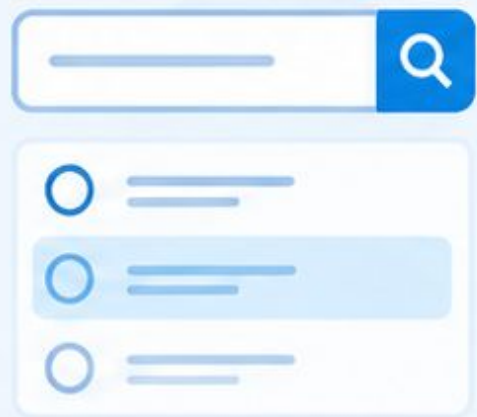
How SNOMED CT Reaches Clinical Systems



How SNOMED CT Reaches Clinical Systems



Why use a Terminology Server?



Fast search

Find the right clinical term quickly.



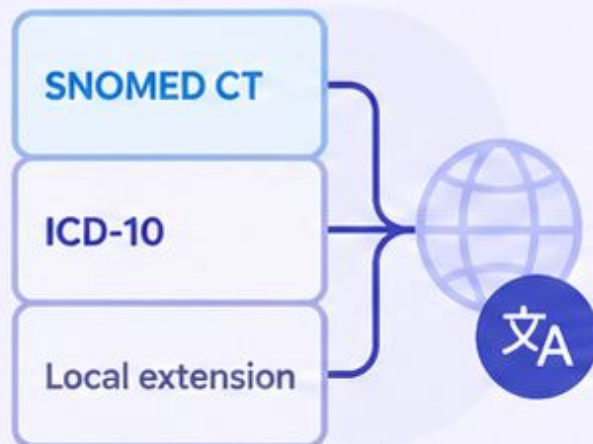
Smart subsets

Define value sets once; keep them current automatically.



Clinical meaning

Understand relationships between concepts, not just codes.



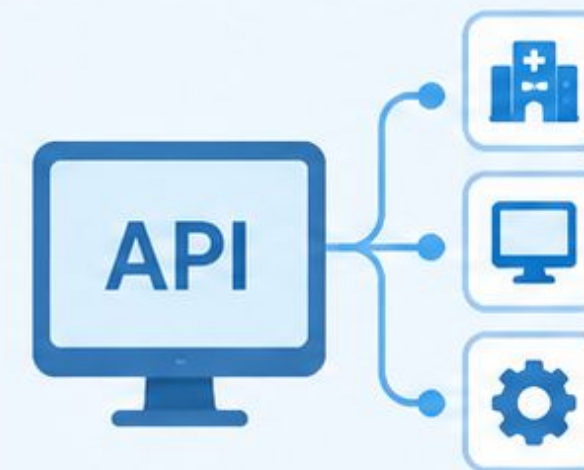
Maps & translations

Manage mappings, extensions and languages centrally.



Easy updates

Update terminology once for all connected systems.



Standard APIs

Connect applications through standard interfaces.

How SNOMED CT Reaches Clinical Systems

HL7 FHIR

Sends the data

Moves information between systems, for example from a hospital to the national e-health platform.



openEHR

Structures the data

Defines the fields in the record, for example what a diagnosis or a blood pressure contains.

A diagram showing a form structure for a blood pressure record. It includes a green document icon and the title 'Blood pressure'. The form contains the following fields: 'Systolic' with the value '120' and unit 'mmHg', 'Diastolic' with the value '80' and unit 'mmHg', 'Position' with a dropdown menu showing 'Sitting', and 'Taken at' with the value '2024-05-01 10:30' and a calendar icon.

SNOMED CT

Gives the meaning

The code inside the field. It says exactly which diagnosis, finding or procedure it is.

Systolic blood pressure

271649006

SNOMED CT



Think of a letter

FHIR

is the envelope and the post.

openEHR

is the form inside.

SNOMED CT

is the words on the form.



They do not compete. Each one needs the others.

what a vendor gets for the work



Stay eligible to bid

Meets national standards.



Build once, sell widely

Same product works in many markets.



Content curated for you

Load the release and stay current.



Smaller mapping burden

One map to maintain.



Capabilities out of the box

Decision support, cohort queries and analytics.



Standard integrations

Same APIs across all implementations.



The work is front-loaded. The benefit is every customer, every market and every interface after the first.

Six things to remember

1 Store the identifier, not the words

Keep the concept ID in your data. Display the term at read time.

Concept ID

404684003

Display term

Clinical finding

2 Use the right identifier format

Identifiers are strings (up to 18 digits). Store them as text, not numbers.

"404684003"

Aa

3 Plan for the release cycle

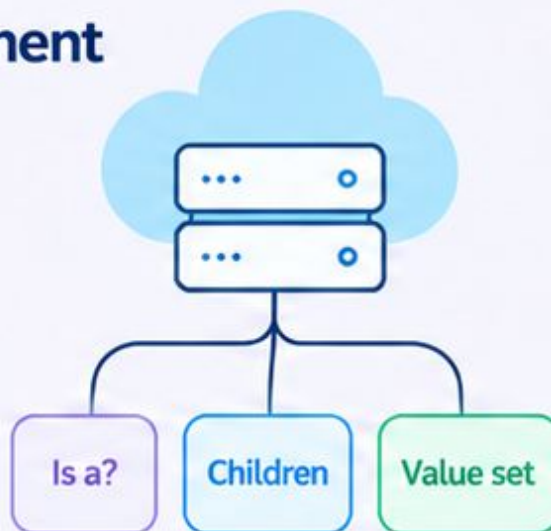
Concepts can be inactivated (not deleted). Follow the historical association to find the replacement.

404684003

New concept ID

4 Don't reimplement the logic

Use the terminology server for subsumption, hierarchy and expansion queries via standard APIs.



5 One entry, more than one code

A clinical concept can have one SNOMED CT concept ID and multiple mapped codes (e.g. ICD-10, local codes).



6 Enable efficient integration of value sets

Use SNOMED CT-enabled value sets so they stay current and are easy to consume via standard APIs.



NO SINGLE BLUEPRINT

tailor it to your environment

SNOMED
International

Start from what you already run

Your systems, your national extension and the standards already in place shape the work.

A terminology server is an option, not a requirement

Some teams call a server. Others load a value set straight into the product. Both are valid implementations.

Scope it to your use case

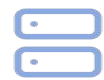
One problem list, one specialty, one exchange. The scope you choose sets the effort.

There is no single correct implementation, only the one that fits your use case and your environment.



you don't start from a blank page

01 · SNOWSTORM



A fully functional open-source terminology server, ready to deploy.

02 · BROWSER & MAPPING



The official SNOMED CT Browser and mapping tools, including ICD-10.

03 · LEARNING RESOURCES



Documentation, eLearning and implementation support to speed up onboarding.

04 · VENDOR TOOLKITS



Specifications, toolkits, demonstrators, etc.

A National Release Centre in every member country,
plus an active community of practice.

you don't have to figure this out alone



01 · IMPLEMENTATION PORTAL

implementation.snomed.org

Implementation library, structured training and step-by-step guidance.



02 · ONLINE TRAINING

snomed.org/courses

Free e-learning courses, from foundation to developer and authoring tracks.



03 · NATIONAL RELEASE CENTRE

Your local point of contact

Localised support in every member country, not a generic global help desk.



04 · DOCUMENTATION

docs.snomed.org

Starter guides, technical documentation and deployment resources.

“

SNOMED CT isn't hard because it's poorly designed.
It's detailed because clinical reality is detailed.

The tooling and support exist so you don't have to face that detail alone.

SNOMED
International

Thank You
Questions & Discussion



Implementation Support Portal
implementation.snomed.org

RESOURCES

Where to learn more

WHY SNOMED CT

The value of SNOMED CT · Case studies

snomed.org/value-of-snomedct

Latvia at SNOMED International · Member page

snomed.org/members/latvia

LEARN

Starter Guide · A first introduction

docs.snomed.org

Education · Free e-learning courses

snomed.org/education

SNOMED CT Browser · Search the concepts

browser.ihtsdotools.org

USE THE DATA

Document Library

docs.snomed.org

Implementation Support Portal

implementation.snomed.org

WITH OTHER STANDARDS

SNOMED CT in FHIR · How FHIR uses SNOMED CT

hl7.org/fhir/snomedct.html

ENGAGE

SNOMED CT Forum

<https://forums.snomed.org/>