

The “Common Ontology” between ICD 11 and SNOMED CT

medical plausibility vs. ontological soundness

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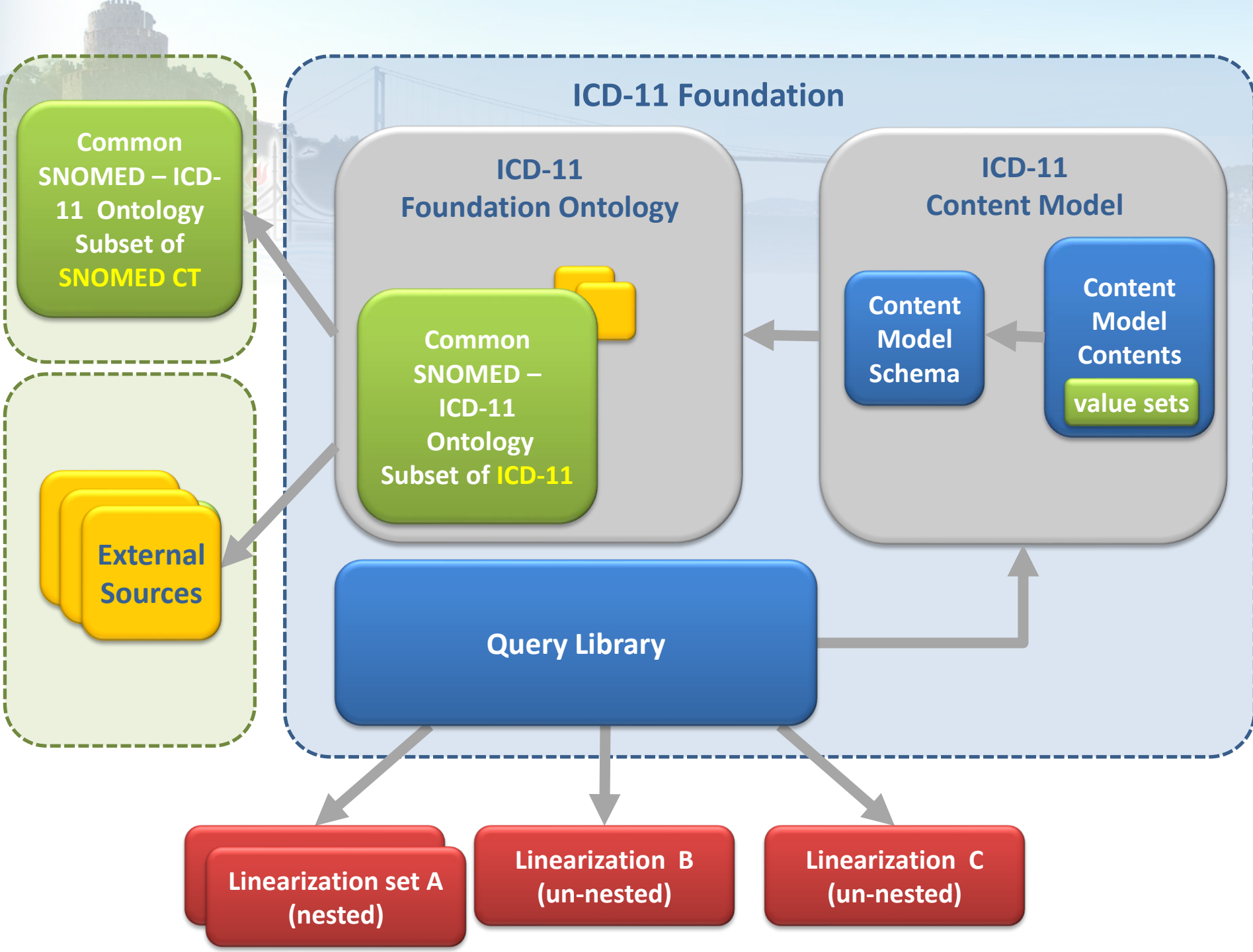
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ICD-11 – SNOMED CT harmonization

- Background:
 - ICD: **Classification** maintained by WHO, currently under revision → ICD-11
 - SNOMED CT: **Ontology-based clinical terminology** maintained by IHTSDO (International Health Terminology Standards Development Organisation)
- Large content overlap between ICD and SNOMED CT disorder / findings hierarchy
- Joint Advisory Group (WHO and IHTSDO), based on institutional agreement:
 - Synergistic and not antagonistic terminology development
 - Jointly develop a **common ontological basis** for both ICD-11 and SNOMED CT
 - Maximum of interoperability between ICD and SNOMED coded data





Inventory of
clinicians'
language:
words, terms,
phrases

Categorization and
formal description of
domain entities:
clinical situations,
information entities,
taxonomies, partonomies

Purpose-specific
reporting units:
billing,
health statistics

SNOMED CT

ICD-11

Vocabulary

Inventory of
clinicians'
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words, terms,
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Ontology

Categorization and
formal description of
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Classification

Purpose-specific
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research,...

SNOMED CT

ICD-11

SNOMED CT

ICD-11

Vocabulary

Inventory of
clinicians'
language:
words, terms,
phrases

Desiderata: Ready-
to-use terms, one-
click encoding of
complex statements

Desiderata:
pragmatic
orderings for
specific purposes

Ontology

Categorization and
formal description of
domain entities:
clinical situations,
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Desiderata: context-
independent, precise
categorizations

Classification

Purpose-specific
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health statistics,
research,...

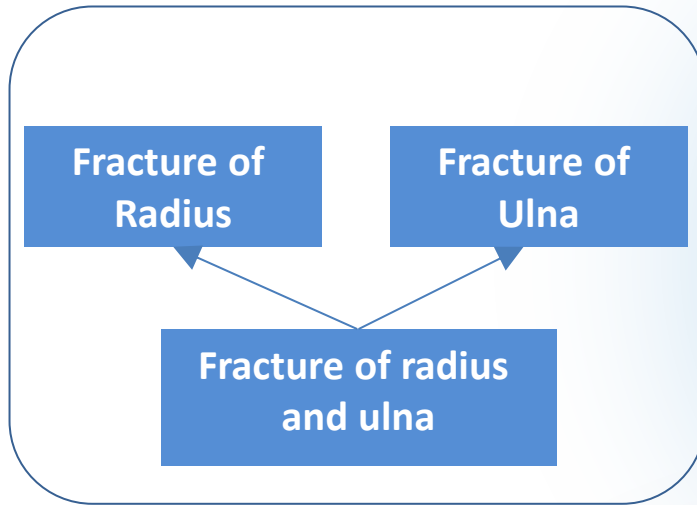
SNOMED CT

ICD-11

SNOMED CT Findings/Disorders and WHO – IHTSDO Common Ontology

Formal taxonomies of clinical situations

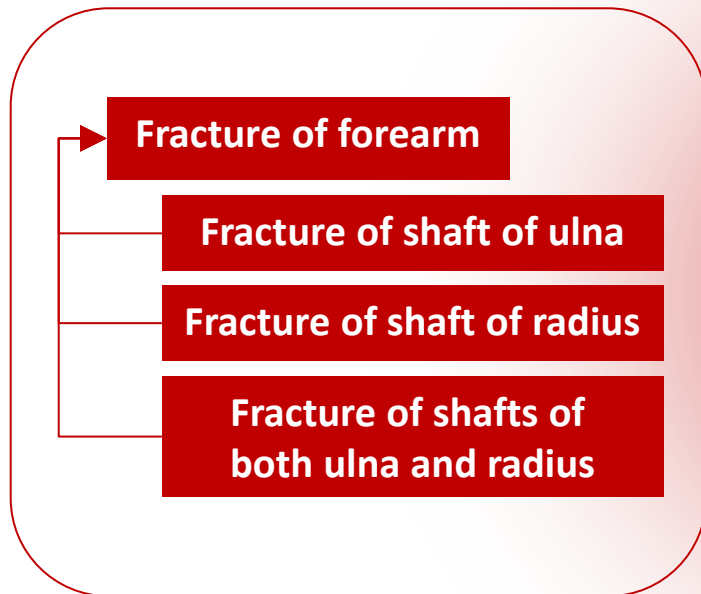
(life periods in which one or more
clinical conditions are present)



ICD-11

Linearizations

Hierarchical orderings of
reporting units
into disjoint “classes”

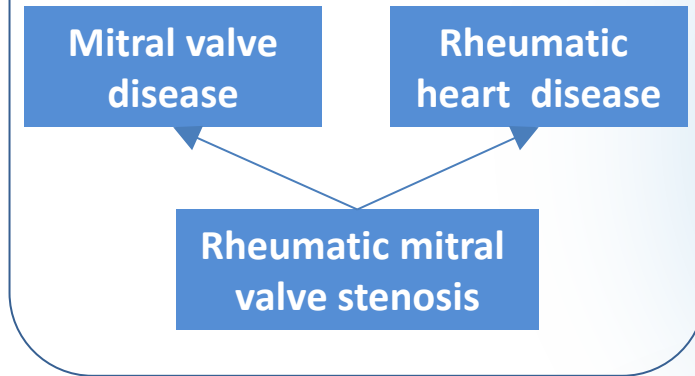


SNOMED CT Findings/Disorders and WHO – IHTSDO Common Ontology

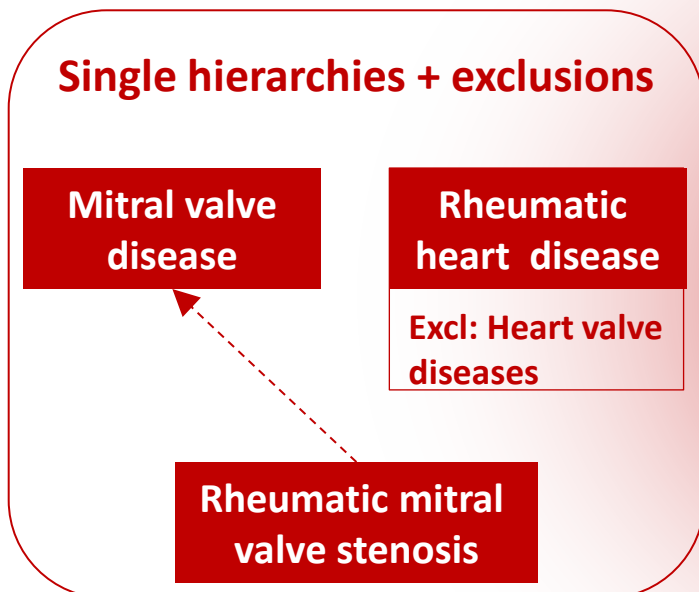
Formal taxonomies of clinical situations

(life periods in which one or more
clinical conditions are present)

Multiple hierarchies:



Single hierarchies + exclusions



ICD-11

Linearizations

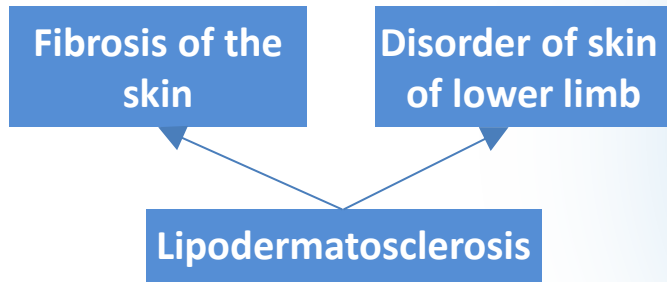
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SNOMED CT Findings/Disorders and WHO – IHTSDO Common Ontology

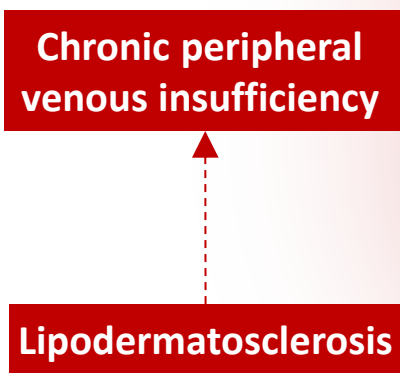
Formal taxonomies of clinical situations

(life periods in which one or more
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Strict taxonomic relations



Approximate taxonomies



ICD-11

Linearizations

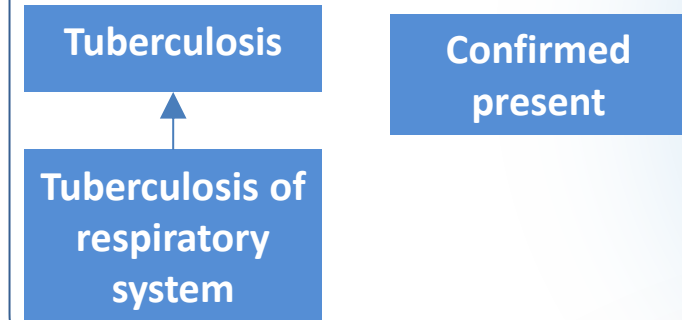
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SNOMED CT Findings/Disorders and WHO – IHTSDO Common Ontology

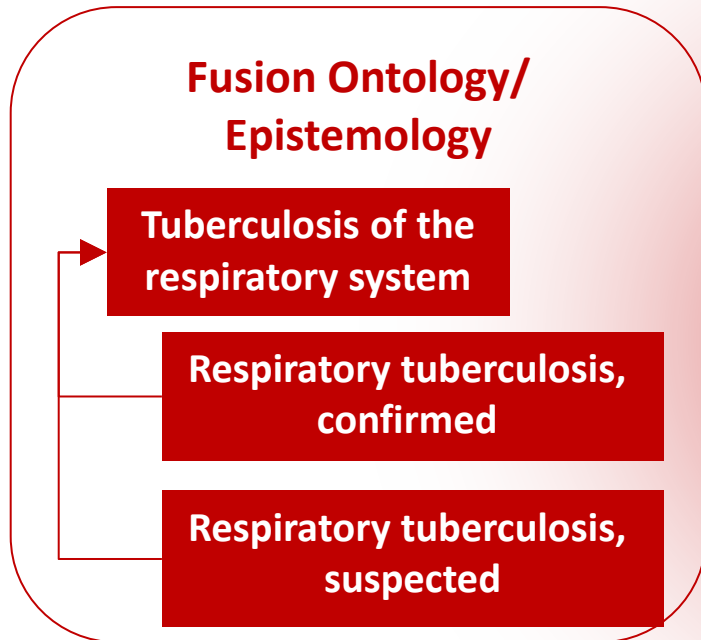
Formal taxonomies of clinical situations

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Separation Ontology/ Epistemology



Fusion Ontology/ Epistemology



ICD-11

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Mapping as Querying

Query mechanism, e.g.

X = select A minus select B

Y = select A and B

Z = select A and (rel C)

...

X

Y

Z

ICD-11

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