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Drug Concept Model Development and Deployment: A Long Journey

Kuala Lumpur, Malaysia
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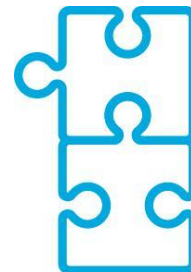
Where we started

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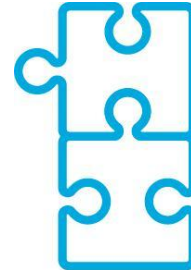
Where we started

- Substance hierarchy
 - Overloaded Is A relationships
 - Groupers that produced incorrect inferences because Is A relationships were not always true



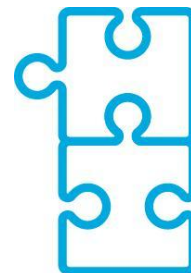
Where we started

- Product hierarchy
 - Primitive hierarchy that manually duplicated substance model
 - Unable to leverage classifier to manage content
 - Blockers (e.g. concrete domains, universal restrictions)
 - Missing foundational components required to create concept model
 - Unable to use Product concept to model in SNOMED CT hierarchies



Where we started

- Other concerns
 - Supporting hierarchies such as Pharmaceutical dose forms
 - Evolving international standards
- Documentation lacking



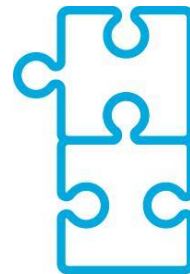
Where we are

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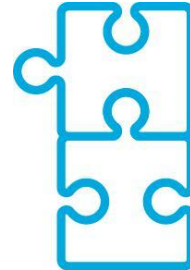
Substance Hierarchy

- Resolution for groupers that resulted in overloaded or incorrect Is A relationships
 - Has disposition attribute introduced and populated
 - High level groupers reviewed
- Resolution for conflicting use cases requiring the representation of substances both as a flat list and as a hierarchy
 - Is modification of attribute introduced and populated
- Updates to terming for substances to reflect INN in FSN and correct US/GB preferred terms



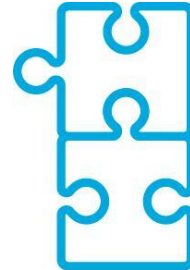
Pharmaceutical Dose Forms

- Concept model
 - Compatible with ISO 11239 IDMP Standard lists regulated information on pharmaceutical dose forms, units of presentation, routes of administration and packaging
 - Guidelines for modeling and terming; existing content updated accordingly
 - Based on analysis of existing concepts, created new Pharmaceutical dose form concepts required to remodel Medicinal Product concepts



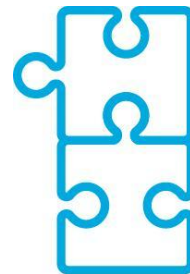
Representation of numeric values and universal restrictions

- Numeric values
 - Support future transformation to concrete domains
 - Guidance from Modeling Advisory Group
 - Result was to create a new “temporary” Number subhierarchy
- Universal restrictions
 - Implemented ingredient count to support classification needs



Pharmaceutical Dose Forms

- Created concept model and editorial guidelines
- Updated existing content, validating against existing member data (primarily dm+d, RxNorm) to determine attribute values

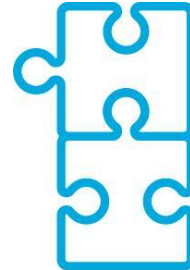


Where we're going next



Next areas

- Quality Improvement Project
 - Subproject for patterns modeled with substances
 - Starting with “Allergy to X” and “Adverse reaction caused by X” patterns
- Vaccine Product Concept Model
 - Concept model, terming, editorial guidelines
 - Address Substance vaccine concepts
- Concrete Domains
 - Modeling AG leading this effort
- Address feedback received from implementers and stakeholders



Links to further information

Medicinal Products, Substances, and Vaccines

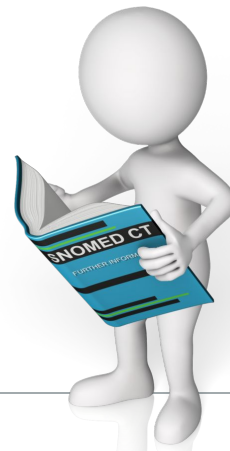
- <https://confluence.ihtsdotools.org/display/IAP/Drugs+Project>

Modeling Advisory Group (concrete domains)

- <https://confluence.ihtsdotools.org/display/mag/Modeling+Advisory+Group>

QI Project

- <https://confluence.ihtsdotools.org/display/IAP/QI+Project>





Thank you.

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