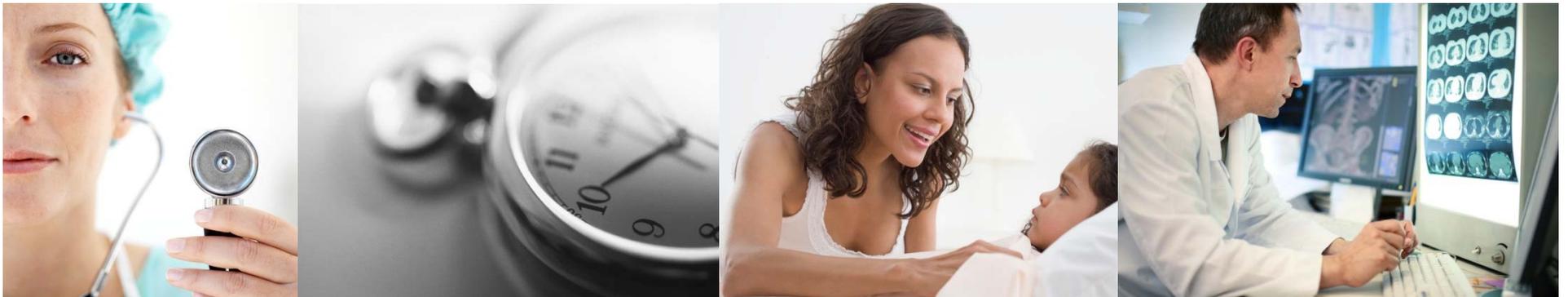


Binding SNOMED CT to HL7 FHIR



Delivering
SNOMED CT
The global
language of
healthcare

Dr Linda Bird
Senior Implementation Specialist

Discussion Overview

- Collaboration Overview
- Proposed Approach
- Testing on FHIR Resources
- Future Work



Collaboration Overview

IHTSDO HL7 Collaborations

- **SNOMED CT FHIR Terminology Binding Collaboration**
 - Purpose
 - For IHTSDO to provide SNOMED CT expert input to assist HL7 International with its efforts to ensure the quality and appropriateness of the use of SNOMED CT in value sets and bindings specified for use in international FHIR resources
 - Phase 1 – Development of approach (Apr to Dec 2015)
 - a) Model meaning binding approach for Condition resource
 - b) Value set review process for SNOMED CT value sets
 - Phase 2 – Testing of approach (Jan 2015 to Sep 2016)
 - a) Model meaning binding for a selection of resources
 - b) Value set view process tested on these resources
 - Phase 3 – Adoption of approach (Oct 2016 onwards)
 - HL7 to use approaches developed for remaining resources



Proposed Approach

HL7 FHIR Priority Use Cases¹

1. Quality checking FHIR models
 - Checking for missing qualifiers or inappropriate qualifiers
2. Semantic checking of data instances
 - E.g.: Code = |Fracture of femur|, Body site = |Humerus|
3. Composing/decomposing expressions
 - Composing postcoordinated expressions from values
 - Decomposing precoordinated expressions

1: As defined by Grahame Grieve (May 2016)

Example – “Suspected Lung Cancer”

General Practice ✕

Problem/Dx

Prob/Dx:

Body Site:

Status:

Suspected

Confirmed

Not found

Polyclinic ✕

Problem/Diagnosis

Prob/Dx Name:

Body Site:

Restructured Hospital ✕

Diagnosis

Name:

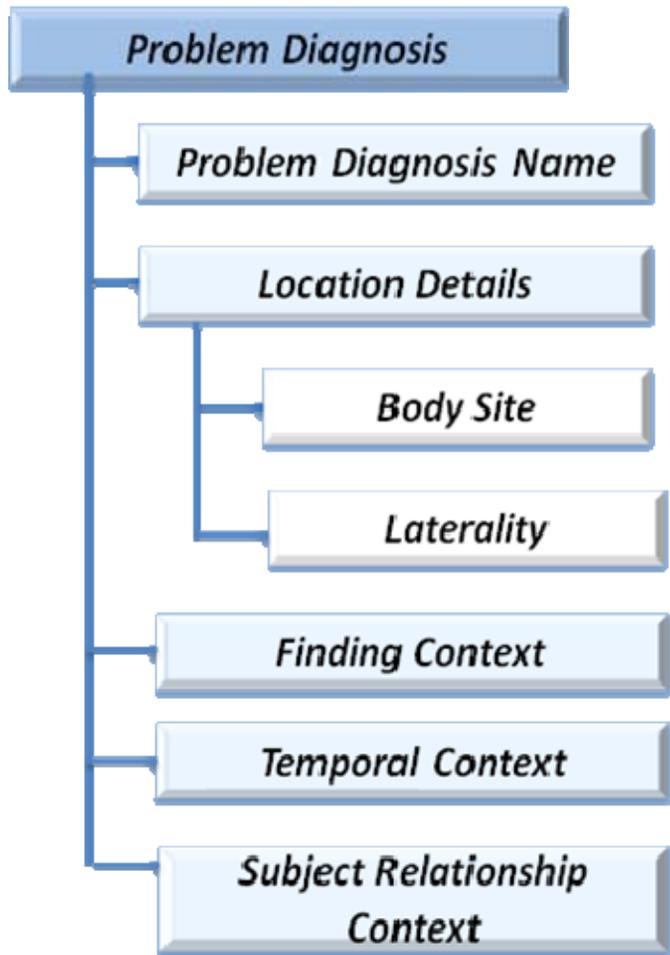
Example – “Suspected Lung Cancer”

Model Hierarchy

General Practice

Polyclinic

Hospital



Cancer	Suspected Cancer	Suspected Lung Cancer
Lung	Lung	
Suspected		

Model Meaning Bindings – Proposed Approach

- **Attribute binding**
 - Linking coded data elements to a corresponding attribute in the SNOMED CT concept model.

- **Concept domain binding**
 - Linking a resource or data element to a set of SNOMED CT concepts that represent the intended semantics of the instances (whether or not SNOMED CT is used to encode that element)

- **Template binding**
 - Linking a resource (or data group) to a SNOMED CT expression templates that enable the composition and decomposition of data instances using the SNOMED CT concept model.

Model Meaning Bindings – Examples / Objectives

- **Attribute binding**
 - Condition.bodySite bound to 363698007 |Finding site| attribute
 - Objective 1: Quality checking models (Clarify and highlight)
 - Objective 3: Enabling decomposition of data instances
- **Concept domain binding**
 - Example: Condition.severity bound to “< 272141005 |Severities|”
 - Objective 1: Quality checking models (Meaning and values)
 - Objective 2: Semantic checking of data instances (inconsistencies)
- **Template binding**

```

413350009 |Finding with explicit context| : [[ ~ @group1 ]]
{ 246090004 |Associated finding| = [[ +id @condition ]],
  408732007 |Subject relationship context| = [[+id @subjectContext ]],
  408731000 |Temporal context| = 410512000 |Current or specified time|,
  408729009 |Finding context| = 410518001 |Goal context| }

```

 - Objective 3: Enabling composition and decomposition of instances

SNOMED CT Value Set Review – Proposed Process

1. Valid display text

- Display text is an acceptable synonym for the given 'code' (en-US)

2. Active concepts

- All concepts in international value sets are active in international edition of SNOMED CT (unless specifically required to be inactive)

3. Appropriate concepts

- All concepts in the value set are consistent and appropriate for the intended use

4. No content gaps

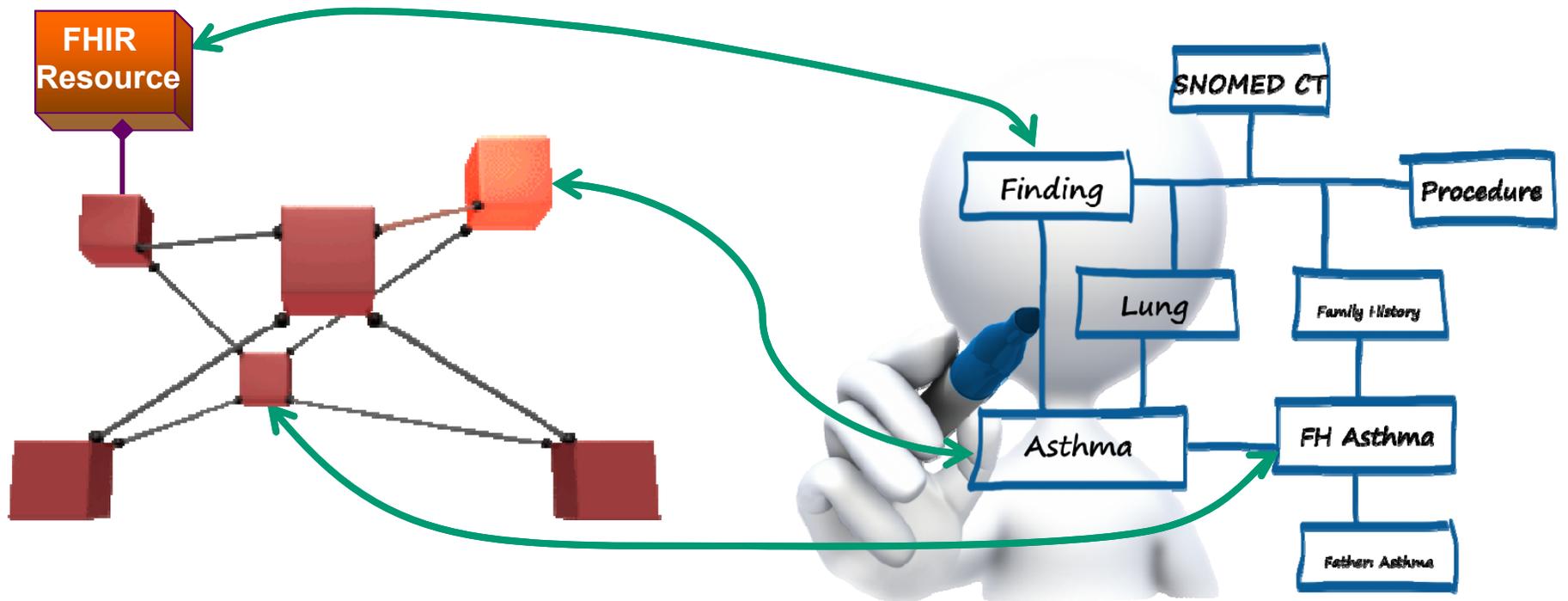
- No obvious gaps in the content of the value set (for intended use)

5. Clear context and meaning

- Context and qualifying information is represented consistently with no ambiguity, either in the terminology or separate elements

A value set version management strategy is also required

Testing on FHIR Resources



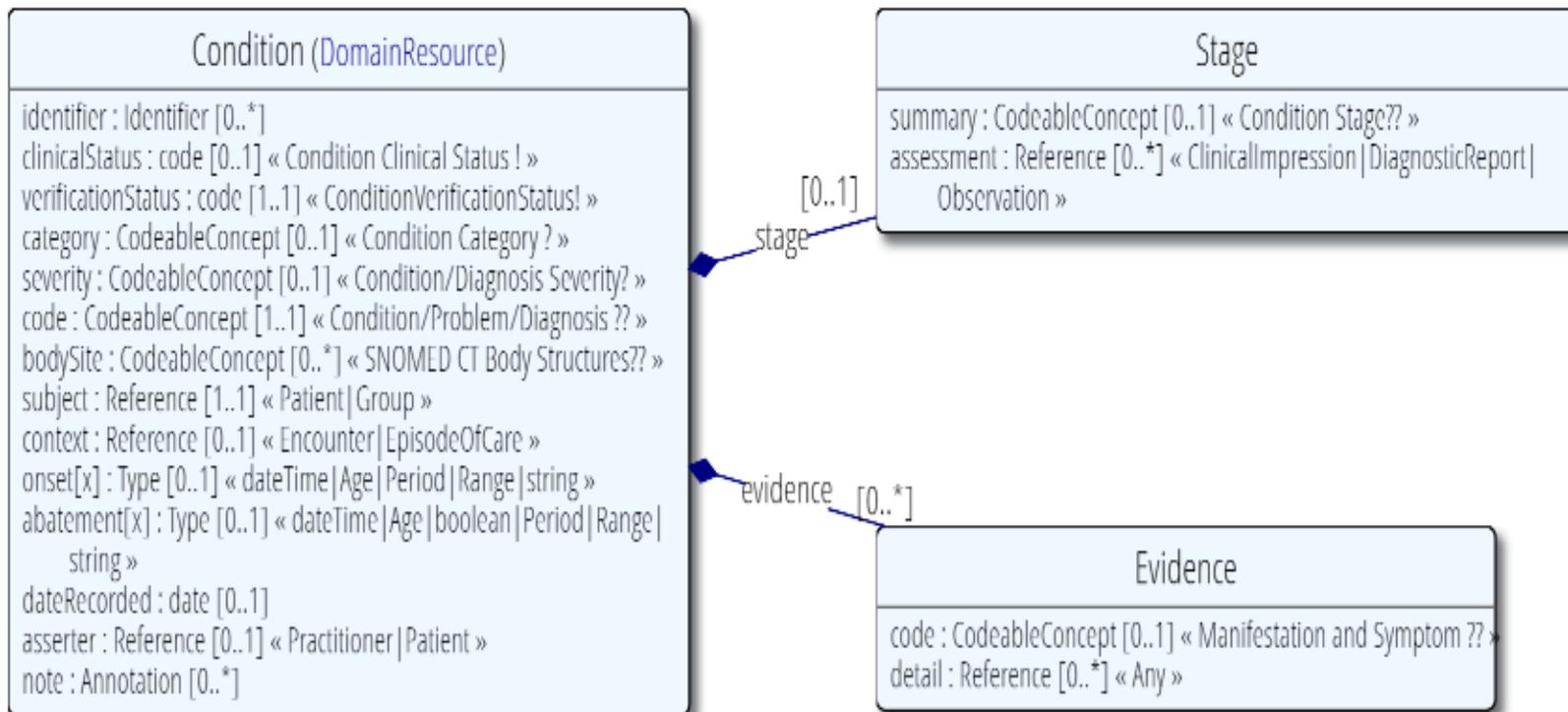
FHIR Resources

- Condition
- Allergy Intolerance
- Procedure
- Goal
- Observation
- Family Member History



Condition Resource - Overview

- *Used to record* detailed information about conditions, problems or diagnoses recognized by a clinician – e.g.
 - Recording a diagnosis during an encounter
 - Populating a problem list or a summary statement



Condition Resource – Model Meaning

Element	Attribute Binding	Concept Domain
clinicalStatus	-	< 303105007 Disease phases
verificationStatus	246112005 Finding context	< 410514004 Finding context value
category	-	< 404684003 Clinical finding
code	246090004 Associated finding	< 404684003 Clinical finding OR < 413350009 Finding with explicit context OR < 272379006 Event
severity	246112005 Severity	< 272141005 Severities
bodySite	363698007 Finding site	< 442083009 Anatomical or acquired body structure
stage.summary	-	< 254291000 Staging and scales
evidence. code	-	< 404684003 Clinical finding

Condition Resource – Model Meaning (details)

Element	Attribute Binding	Concept Domain
clinicalStatus	-	< 303105007 Disease phases
verificationStatus	246112005 Finding context	< 410514004 Finding context value
category	-	< 404684003 Clinical finding
code	246090004 Associated finding	((((((<< 404684003 Clinical finding MINUS << 420134006 Propensity to adverse reactions MINUS << 473010000 Hypersensitivity condition MINUS << 79899007 Drug interaction) MINUS << 69449002 Drug action) MINUS << 441742003 Evaluation finding) MINUS << 307824009 Administrative status) MINUS << 385356007 Tumor stage finding OR < 413350009 Finding with explicit context OR < 272379006 Event
severity	246112005 Severity	< 272141005 Severities
bodySite	363698007 Finding site	< 442083009 Anatomical or acquired body structure
stage.summary	-	< 254291000 Staging and scales
evidence.code	-	< 404684003 Clinical finding

SNOMED Template Mapping – Condition

```
clinicalStatus = "active"  
verificationStatus = "provisional"  
severity = 246090004 |Severe|  
code = 125605004 |Fracture of bone|  
bodySite = 71341001 |Femur|  
subject = <Patient>
```

```
clinicalStatus = "active"  
verificationStatus = "provisional"  
severity = 246090004 |Severe|  
code = 71620000 |Fracture of femur|  
bodySite =  
subject = <Patient>
```

SNOMED Template Mapping

- Step 1 – Select FHIR resource elements that correspond to SNOMED CT concept model (**mapping source**)
- Step 2 – Define SNOMED CT expression template
- Step 3 – Convert SNOMED CT Expression Template into FHIR Structure Definition (**mapping target**)
- Step 4 – Define mapping rules from source (FHIR resource) to target (SNOMED CT Expression Template)
- Step 5 – Serialize target Template Structured Definition to generate resulting SNOMED CT Expression

SNOMED Template Mapping – Condition

- Step 1 – Select the FHIR data elements that correspond to the SNOMED CT concept model (**source**)

Resource	Relevant Subset of FHIR Data Elements
Condition	clinicalStatus [0..1]: code verificationStatus [1..1]: code severity [0..1]: CodeableConcept code [1..1]: CodeableConcept bodySite [0..*]: CodeableConcept subject [1..1]: Reference (Patient Group)

SNOMED Template Mapping – Condition

- Step 2 – Define SNOMED CT expression template

Resource	SNOMED CT Expression Template
Condition	<pre> [[+id @conditionWithContext]] : [[~ @group1]] { 246090004 Associated finding = ([[+id @condition]] : 246112005 Severity = [[+ @severity]], [[~ @group2]] { 363698007 Finding site = [[+ @bodySite]], 255234002 After = [[+ @after]], 116676008 Associated morphology = [[+ @morphology]], 47429007 Associated with = [[+ @associatedWith]], 246075003 Causative agent = [[+ @agent]], 42752001 Due to = [[+ @dueTo]], 363713009 Has interpretation = [[+ @hasInterpretation]], 363714003 Interprets = [[+ @interprets]], 370135005 Pathological process = [[+ @pathProcess]] 246454002 Occurrence = [[+ @occurrence]] }) 408732007 Subject relationship context = [[+ @subjectContext]], 408731000 Temporal context = [[+ @temporalContext]], 408729009 Finding context = [[+ @findingContext]] } </pre>

SNOMED Template Mapping – Condition

- Step 3 – Convert SNOMED CT Expression Template into FHIR Structure Definition (**mapping target**)

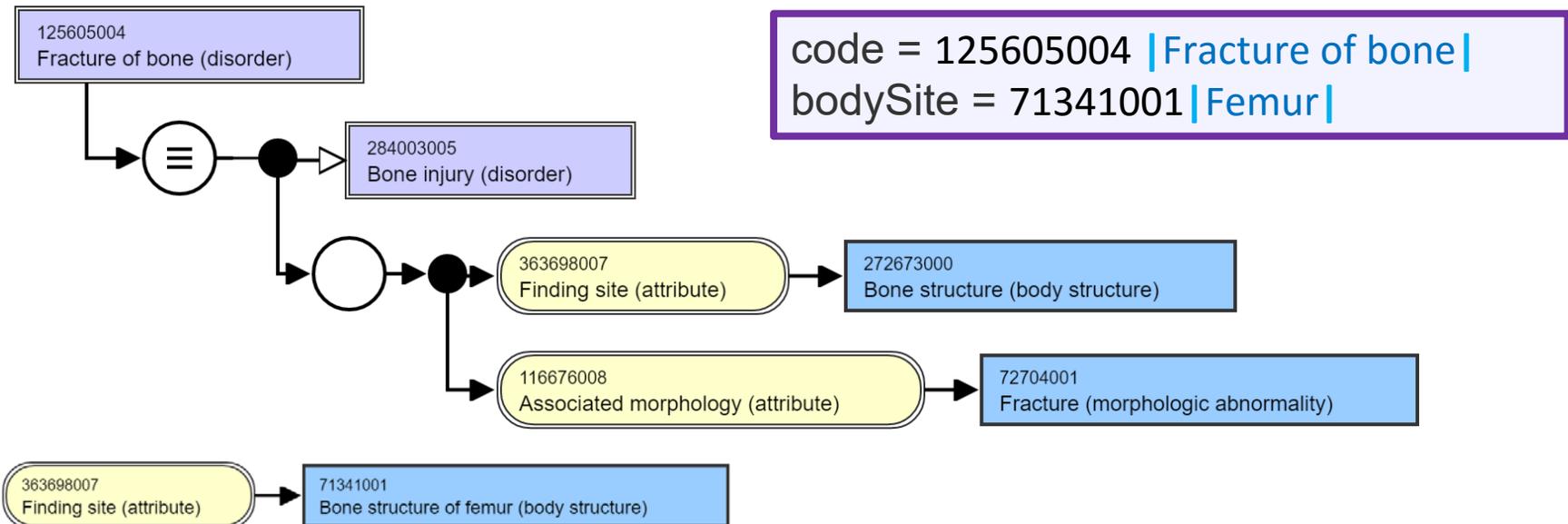
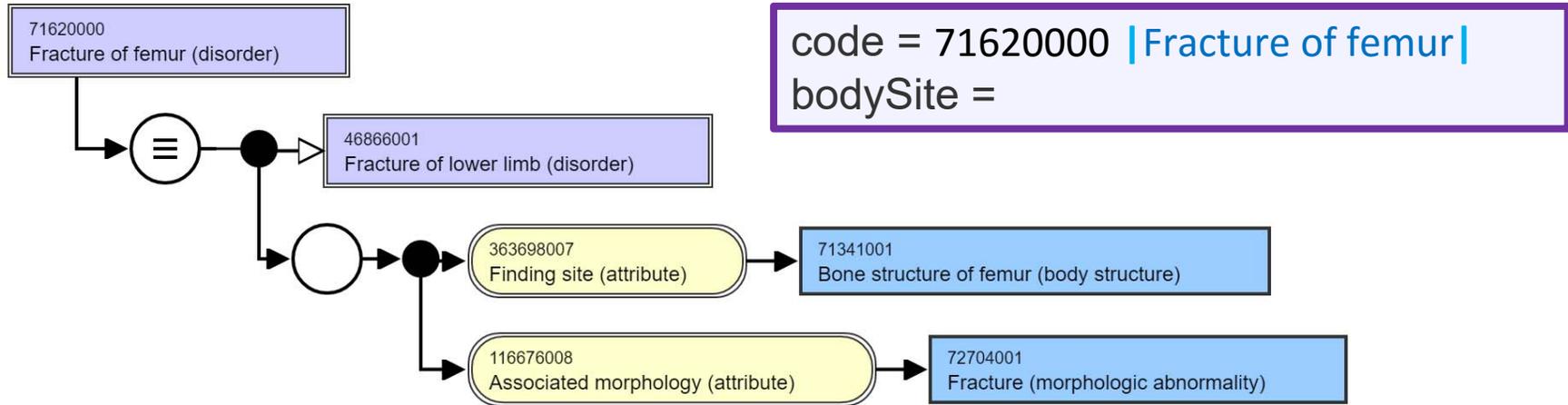
Resource	SNOMED CT Expression Template - Structure Definition
Condition	<p>SCT_Condition_Template: SNOMEDCTExpressionTemplate</p> <p>findingWithExplicitContext [1]: Coding</p> <p>group1 [0..*]: RelationshipGroupElement</p> <p> associatedFinding [1..1]: Coding</p> <p> severity [0..1]: Coding</p> <p> group2 [0..*]: RelationshipGroupElement</p> <p> findingSite [0..1]: Coding</p> <p> after [0..1]: Coding</p> <p> morphology [0..1]: Coding</p> <p> associatedWith [0..1]: Coding</p> <p> agent [0..1]: Coding</p> <p> dueTo [0..1]: Coding</p> <p> hasInterpretation [0..1]: Coding</p> <p> interprets [0..1]: Coding</p> <p> pathProcess [0..1]: Coding</p> <p> occurrence [0..1]: Coding</p> <p> subjectRelationship [1]: Coding</p> <p> temporalContext [1]: Coding</p> <p> findingContext [1]: Coding</p>

SNOMED Template Mapping – Condition

- Step 4 – Define mapping rules from source (FHIR resource) to target (SNOMED CT Expression Template)

Resource	Resource-to-Template Mapping Rules
	<pre> rule_1: for source.code as code where verificationStatus != "entered-in-error" then { rule_1a: for code where code in memberOf("http://snomed.info/sct?fhir_vs=isa/404684003") make target.findingWithExplicitContext = 413350009 Finding with explicit context , target.group as groupA then { rule_1aa: for code make groupA.associatedFinding = code rule_1ab: for code where severity in memberOf("http://snomed.info/sct?fhir_vs=isa/272141005") OR findingSite in memberOf("http://snomed.info/sct?fhir_vs=isa/123037004) make groupA.group as groupB then { rule_1aba: for source.severity as sev where severity in memberOf("http://snomed.info/sct?fhir_vs=isa/272141005") make groupB.severity = sev rule_1abb: for source.bodySite as bs where findingSite in memberOf("http://snomed.info/sct?fhir_vs=isa/123037004) make groupB.findingSite = bs } rule_1ac: for code make groupA.subjectRelationship = 410604004 Subject of record rule_1ad: for code make groupA.temporalContext = 410512000 Current or specified time rule_1ae: for source.clinicalStatus as cs, source.verificationStatus as vs make groupA.findingContext as fc then { rule_1aea: for vs make fc.code = translate ('status-to-findingContext-map', cs, vs) rule_1aeb: for vs make fc.system = "http://snomed.info/" rule_1aec: for vs make fc.display = "http://snomed.info/sct?lookupPT(coding.code, 900000000000509007) } } rule_1b: for code where code in memberOf("http://snomed.info/sct?fhir_vs=isa/413350009 ") make target.findingWithExplicitContext = code then { rule_1ba: } } </pre>

SNOMED Template Mapping – Condition



SNOMED Template Mapping – Condition

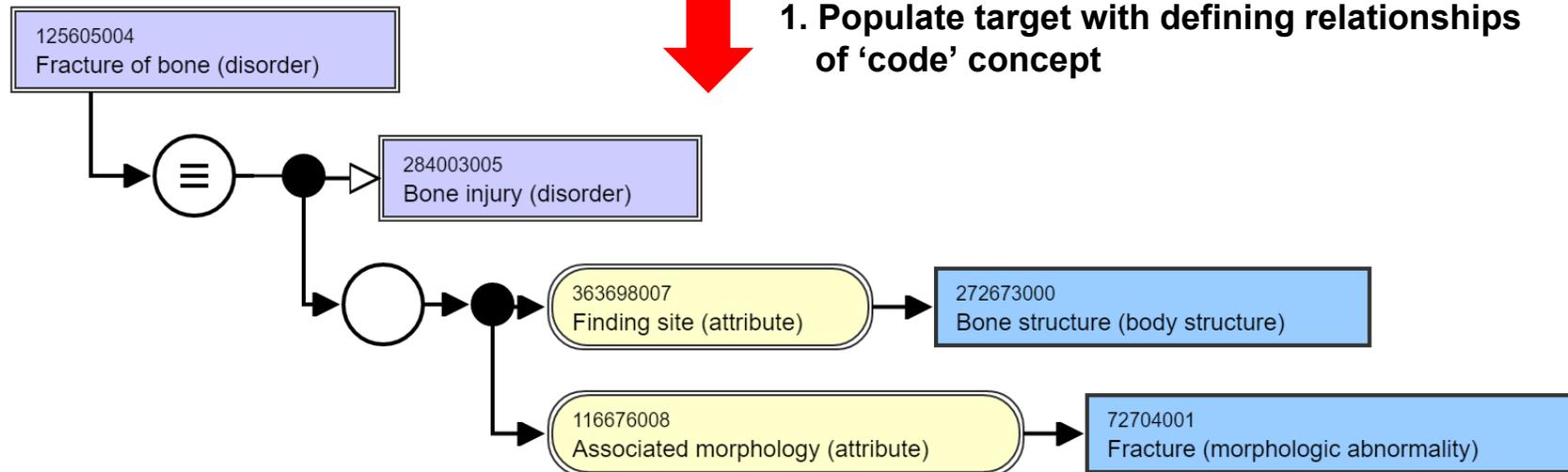
- Step 4 – Define mapping rules from source (FHIR resource) to target (SNOMED CT Expression Template)

```

clinicalStatus = "active"
verificationStatus = "provisional"
severity = 246090004 |Severe|
code = 125605004 |Fracture of bone|
bodySite = 71341001 |Femur|
subject = <Patient>
  
```



1. Populate target with defining relationships of 'code' concept



SNOMED Template Mapping – Condition

- Step 4 – Define mapping rules from source (FHIR resource) to target (SNOMED CT Expression Template)

```
clinicalStatus = "active"  
verificationStatus = "provisional"  
severity = 246090004 |Severe|  
code = 125605004 |Fracture of bone|  
bodySite = 71341001 |Femur|  
subject = <Patient>
```



1. Populate target with defining relationships of 'code' concept

```
SCT_Condition_Template  
definitionStatus = 900000000000073002 |Defined|  
group1  
  associatedFinding = 125605004 |Fracture of bone|  
group2  
  findingSite = 272673000 |Bone structure|  
  morphology = 246090004 |Fracture|
```

SNOMED Template Mapping – Condition

- Step 4 – Define mapping rules from source (FHIR resource) to target (SNOMED CT Expression Template)

```
clinicalStatus = "active"  
verificationStatus = "provisional"  
severity = 246090004 |Severe|  
code = 125605004 |Fracture of bone|  
bodySite = 71341001 |Femur|  
subject = <Patient>
```



2. Add other values from FHIR resource

SNOMED Template Mapping – Condition

- Step 4 – Define mapping rules from source (FHIR resource) to target (SNOMED CT Expression Template)



2. Add other values from FHIR resource

```
SCT_Condition_Template
definitionStatus = 900000000000073002 |Defined|
findingWithExplicitContext = 413350009 |Finding with explicit context|
group1
  associatedFinding = 125605004 |Fracture of bone|
  severity = 246090004 |Severe|
  group2
    findingSite = 272673000 |Bone structure|
    findingSite = 71341001 |Femur|
    morphology = 246090004 |Fracture|
  subjectRelationship = 246090004 |Subject of care|
  temporalContext = 246090004 |Current or specified|
  findingContext = 246090004 |Suspected|
```

SNOMED Template Mapping – Condition

- Step 4 – Define mapping rules from source (FHIR resource) to target (SNOMED CT Expression Template)



2. Add other values from FHIR resource

```
SCT_Condition_Template
definitionStatus = 900000000000073002 |Defined|
findingWithExplicitContext = 413350009 |Finding with explicit context|
group1
  associatedFinding = 125605004 |Fracture of bone|
  severity = 246090004 |Severe|
group2
  findingSite = 71341001 |Femur|
  morphology = 246090004 |Fracture|
subjectRelationship = 246090004 |Subject of care|
temporalContext = 246090004 |Current or specified|
findingContext = 246090004 |Suspected|
```

SNOMED Template Mapping – Condition

- Step 5 – Serialize target Template Structured Definition to generate resulting SNOMED CT Expression

```
SCT_Condition_Template
definitionStatus = 900000000000073002 |Defined|
findingWithExplicitContext = 413350009 |Finding with explicit context|
group1
  associatedFinding = 125605004 |Fracture of bone|
  severity = 246090004 |Severe|
group2
  findingSite = 71341001 |Femur|
  Morphology = 246090004 |Fracture|
subjectRelationship = 246090004 |Subject of care|
temporalContext = 246090004 |Current or specified|
findingContext = 246090004 |Suspected|
```



Serialize into SNOMED Compositional Grammar

SNOMED Template Mapping – Condition

- Step 5 – Serialize target Template Structured Definition to generate resulting SNOMED CT Expression



Serialize into SNOMED Compositional Grammar

```

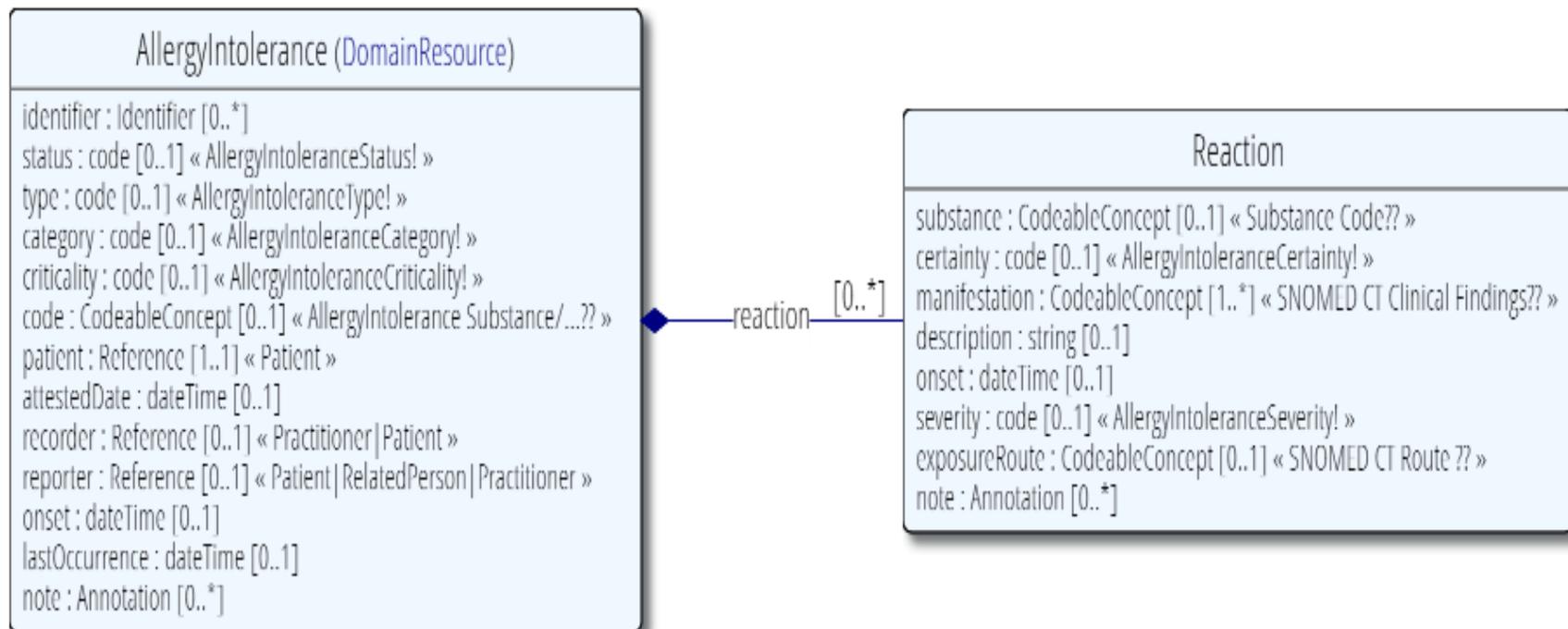
=== 413350009 |Finding with explicit context| :
  { 246090004 |Associated finding| = (125605004 |Fracture of bone| :
    246112005 |Severity| = 246090004 |Severe| ,
    { 363698007 |Finding site| = 71341001 |Femur| ,
      116676008 |Associated morphology| = 246090004 |Fracture| )
    408732007 |Subject relationship context| = 46090004 |Subject of care| ,
    408731000 |Temporal context| = 246090004 |Current or specified| ,
    408729009 |Finding context| = 246090004 |Suspected| }
  }
  
```

Condition Resource – Value Sets

- SNOMED CT Value Sets
 - Condition-code
 - Condition-severity
 - Condition-stage
 - Manifestation-or-symptom
 - Body-site
- Other Value Sets in scope of SNOMED CT
 - Condition-category
 - Condition-clinical
 - Condition-ver-status

Allergy Intolerance Resource - Overview

- Used to record a clinical assessment of an allergy, intolerance, propensity, or a potential risk to an individual to have an adverse reaction on future exposure to a specified substance or class of substances.



Allergy Intolerance Resource - Model Meaning

Element	Attribute Binding	Concept Domain
AllergyIntolerance	-	< 413350009 Finding with explicit context : 246090004 Associated finding = << 473010000 Hypersensitivity condition
status	408729009 Finding context	< 410514004 Finding context value
type	-	473010000 Hypersensitivity condition OR 418038007 Propensity to adverse reactions to substance
category	-	116273005 Dietary substance OR 410942007 Drug or medicament OR 115668003 Biological substance OR AAAAAA Environmental substance
criticality	-	< 30207005 Risk of

Allergy Intolerance Resource - Model Meaning

Element	Attribute Binding	Concept Domain
code	246075003 Causative agent	< 105590001 Substance OR < 373873005 Pharmaceutical / biologic product OR < 418038007 Propensity to adverse reactions to substance OR < 267425008 Lactose intolerance OR < 29736007 Syndrome of carbohydrate intolerance OR < 340519003 Lysine intolerance OR < 190753003 Sucrose intolerance OR < 413427002 Acquired fructose intolerance OR < 716186003 No known allergy
reaction. substance	363701004 Direct substance	< 105590001 Substance OR < 373873005 Pharmaceutical / biologic product
reaction. certainty	408729009 Finding context	< 410514004 Finding context value
manifestation	-	< 404684003 Clinical finding
severity	246112005 Severity	< 272141005 Severities

Allergy Intolerance Resource – Template

Element	SNOMED CT Binding
Allergy Intolerance	<pre> [[+id @conditionWithContext]] : [[~ 0..* @group1]] { 246090004 Associated finding = ([[+id @condition]] : 246112005 Severity = [[+ @severity]], [[~ 0..* @group2]] { 363698007 Finding site = [[+ @bodySite]], 255234002 After = [[+ @after]], 116676008 Associated morphology = [[+ @morphology]], 47429007 Associated with = [[+ @associatedWith]], 246075003 Causative agent = [[+ @agent]], 42752001 Due to = [[+ @dueTo]], 363713009 Has interpretation = [[+ @hasInterpretation]], 363714003 Interprets = [[+ @interprets]], 370135005 Pathological process = [[+ @pathProcess]] }) 408732007 Subject relationship context = [[+ @subjectContext]], 408731000 Temporal context = [[+ @temporalContext]], 408729009 Finding context = [[+ @findingContext]] } </pre>

Allergy Intolerance Resource – Template

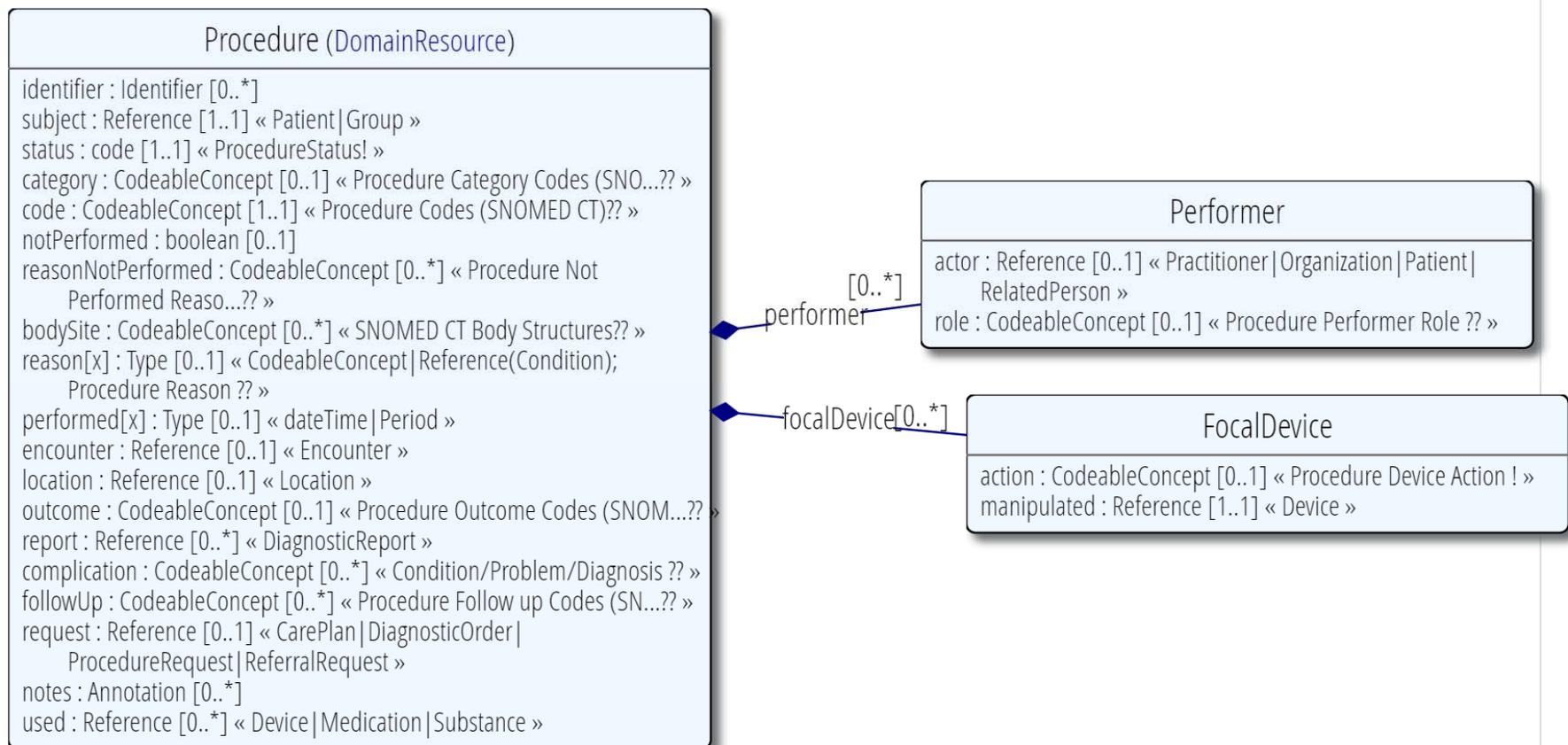
Element	SNOMED CT Binding
reaction	<pre> 413350009 Finding with explicit context : [[~ 1..* @group1]] { 246090004 Associated finding = (282100009 Adverse reaction caused by substance : [[~ 1..1 @group2]] { 246075003 Causative agent = [[+ @agent]], 246112005 Severity = [[+ @severity]], 255234002 After = (432102000 Administration of substance : [[~ 1..1 @group3]] {363701004 Direct substance = [[+ @agent]], 410675002 Route of administration = [[+ @route]] }))) 408732007 Subject relationship context = 410604004 Subject of record , 408731000 Temporal context = [[+ @temporalContext]], 408729009 Finding context = [[+ @findingContext]] } </pre>

AllergyIntolerance Resource – Value Sets

- **SNOMED CT Value Sets**
 - Allergyintolerance-substance-code
 - Substance-code
 - Manifestation-codes
 - Route-codes
- **Other Value Sets in scope of SNOMED CT**
 - Allergy-intolerance-status
 - Allergy-intolerance-type
 - Allergy-intolerance-category
 - Allergy-intolerance-criticality
 - Reaction-event-certainty
 - Reaction-event-severity

Procedure Resource - Overview

- Used to record details of procedures performed on a patient. A procedure is an activity that is performed with or on a patient as part of the provision of care.



Procedure Resource - Model Meaning

Element	Attribute Binding	Concept Domain
status	408730004 Procedure context	< 288532009 Context values for actions
category	-	< 71388002 Procedure
code	363589002 Associated procedure	< [[+(< 7138802 Procedure \$Procedure.category)]]
notPerformed	408730004 Procedure context	<< 262008008 Not performed
bodySite	405813007 Procedure site - Direct	< 442083009 Anatomical or acquired body structure
focalDevice. manipulated. type	363699004 Direct device	< 49062001 Device
usedCode	424226004 Using device	< 49062001 Device
	424361007 Using substance	< 373873005 Pharmaceutical / biologic product OR < 105590001 Substance

Procedure Resource – Template

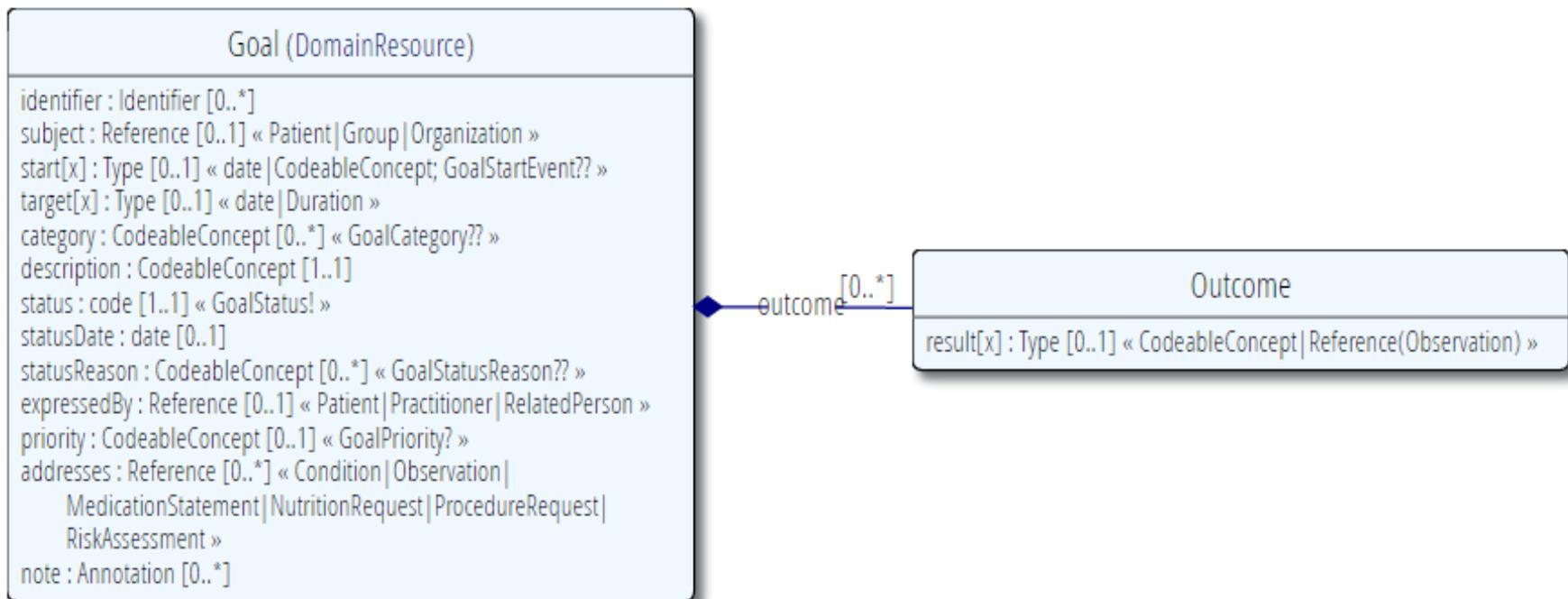
Element	SNOMED CT Binding
Procedure	<pre> 129125009 Procedure with explicit context = [[~ @group1]] { 363589002 Associated procedure = ([[+ @condition]]: [[~ @group2]] { 405813007 Procedure site - Direct = [[+ @bodySite]], 363699004 Direct device = [[+@directDevice]], 424226004 Using device = [[+ @directDevice]], 424361007 Using substance = [[+ @usedSubstance]], 260507000 Access = [[+ @access]], 363700003 Direct morphology = [[+ @directMorph]], 363701004 Direct substance = [[+ @directSubstance]], 363710007 Indirect device = [[+ @indirectDevice]], 363709002 Indirect morphology = [[+ @indirectMorph]], 260686004 Method = [[+ @method]], 405816004 Procedure morphology = [[+ @morphology]], 405814001 Procedure site - Indirect = [[+ @indirectSite]], 370130000 Property = [[+ @property]], 410675002 Route of administration = [[+ @route]], 425391005 Using access device = [[+ @accessDevice]], 424244007 Using energy = [[+ @energy]] }), 408732007 Subject relationship context = [[+@subject]], 408731000 Temporal context = 410512000 Current or specified time , 408730004 Procedure context = [[+ @procedureContext]] } </pre>

Procedure Resource – Value Sets

- SNOMED CT Value Sets
 - Procedure-category
 - Procedure-code
 - Procedure-not-performed-reason
 - Body-site
 - Procedure-reason
 - Performer-role
 - Procedure-outcome
 - Condition-code
 - Procedure-followup
- Other Value Sets in scope of SNOMED CT
 - Procedure-status
 - Device-action
- Data Element in scope of SNOMED CT
 - notPerformed: Boolean

Goal Resource - Overview

- Used to express a desired health state or intended objective to be achieved by a subject of care, group or organization over a period or at a specific point of time – e.g. weight loss, restoring an activity of daily living.



Goal Resource - Model Meaning

Element	Attribute Binding	Concept Domain
category	-	< 404684003 Clinical finding
description	246090004 Associated finding	< [[+ (< 404684003 Clinical finding) \$Goal.category]]
status	-	< 390800000 Goal achievement finding
statusReason	-	< 404684003 Clinical finding
priority	260870009 Priority	< 272125009 Priorities
outcome. result [Codeable Concept]	-	< 404684003 Clinical finding

Goal Resource – Template

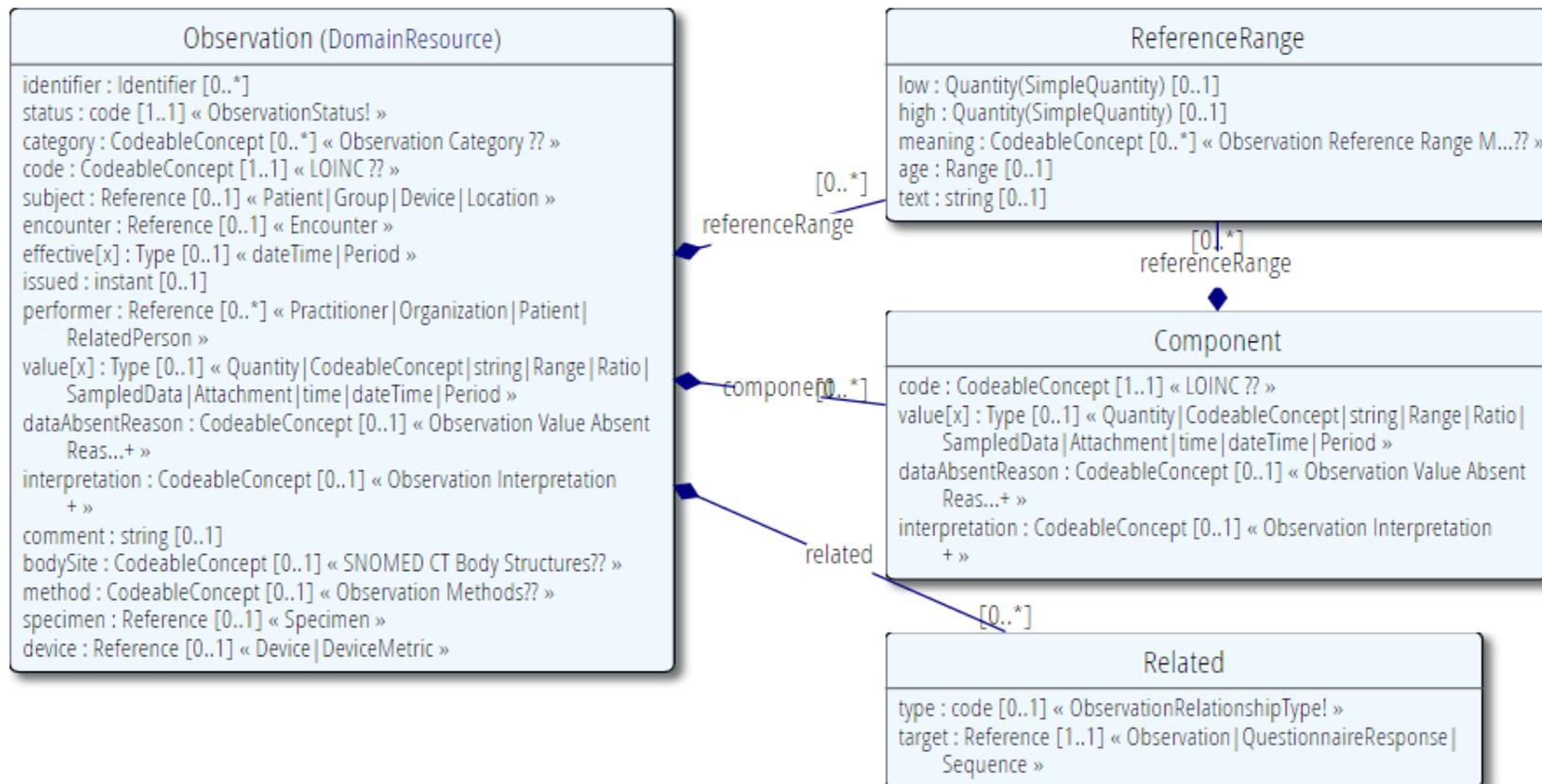
Element	SNOMED CT Binding
Goal	413350009 Finding with explicit context : [[~ 1..1 @group1]] { 246090004 Associated finding = [[+ @condition]], 408732007 Subject relationship context = [[+@subjectContext]], 408731000 Temporal context = 410512000 Current or specified time , 408729009 Finding context = 410518001 Goal context }

Goal Resource – Value Sets

- SNOMED CT Value Sets
 - Goal-start-event
- Other Value Sets in scope of SNOMED CT
 - Goal-status
 - Goal-status-reason
 - Goal-priority

Observation Resource - Overview

- Used to support diagnosis, monitor progress, determine baselines and patterns and capture demographics.



Observation Resource - Model Meaning

Element	Attribute Binding	Concept Domain
category	116680003 Is a	< 363787002 Observable entity OR < 386053000 Evaluation procedure
value [codeable Concept]	R 363714003 Interprets	< 441742003 Evaluation finding
interpretation	363713009 Has interpretation	< 260245000 Findings values
bodySite	718497002 Inherent location	< 123037004 Body structure
method	246501002 Technique	< 272394005 Technique
specimen	704319004 Inheres in	< 123038009 Specimen
device.type	424226004 Using device	< 49062001 Device

Observation Resource – Template

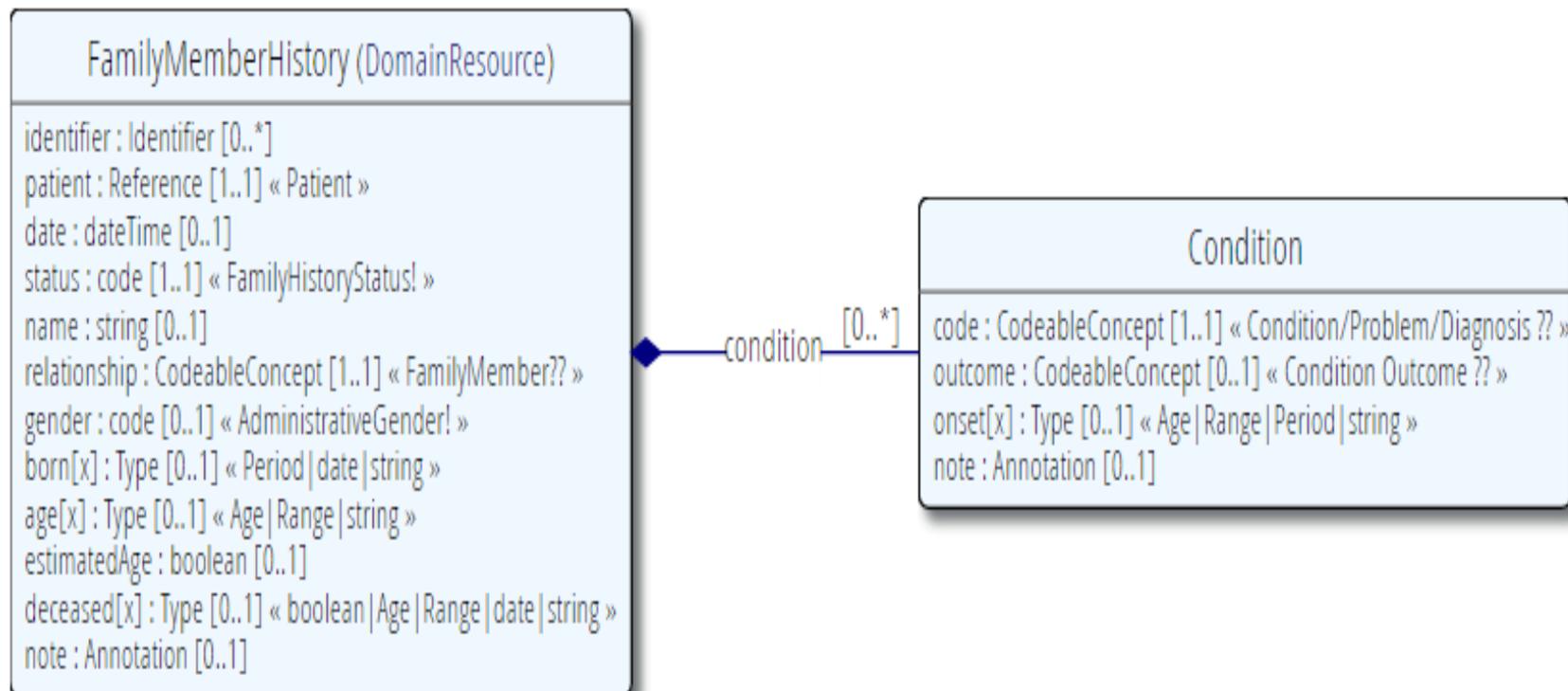
Element	SNOMED CT Binding
Observation	<pre> [[+id @observation]] : [[~ @group1]] { 718497002 Inherent location = [[+@bodySite]], 246501002 Technique = [[+ @method]], 704319004 Inheres in = [[+ @specimen]], 424226004 Using device = [[+ @specimen]] } </pre>

Observation Resource – Value Sets

- SNOMED CT Value Sets
 - Body-site
 - Observation-method
 - Referencerange-meaning
- Other Value Sets in scope of SNOMED CT
 - Observation-status
 - Observation-category-codes
 - Observation-code
 - Observation-interpretation-code

Family Member History Resource - Overview

- Used to record significant health events and conditions for a particular individual related to the subject.



Family Member History Resource - Model Meaning

Element	Attribute Binding	Concept Domain
FamilyMember History	-	< 416471007 Family history of clinical finding
status	-	< 445584004 Report by finality status
relationship	408732007 Subject relationship context	< 444148008 Person in family of subject
gender	-	< 429019009 Finding related to biologic sex
condition.code	246090004 Associated finding	< 404684003 Clinical finding
condition.outcome	-	< 404684003 Clinical finding OR < 272379006 Event

Family Member History Resource – Template

Element	SNOMED CT Binding
Family Member History	<pre> 413350009 Finding with explicit context : [[~ @group1]] { 246090004 Associated finding = [[+ @condition]], 408732007 Subject relationship context = [[+ @relationship]], 408731000 Temporal context = 410511007 Current or past , 408729009 Finding context = 410515003 Known present } </pre>

Family Member History Resource – Value Sets

- SNOMED CT Value Sets
 - Family-member
 - Condition-code
 - Condition-outcome
- Other Value Sets in scope of SNOMED CT
 - Administrative-gender



Questions and Discussions