



## SNOMED CT July 2016 International Edition - IHTSDO Release notes

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## 1 Introduction

### 1.1 Background

SNOMED CT terminology provides a common language that enables a consistent way of indexing, storing, retrieving, and aggregating clinical data across specialties and sites of care.

The International Health Terminology Standards Development Organization (IHTSDO®) maintains the SNOMED CT technical design, the content architecture, the SNOMED CT content (includes the concepts table, the descriptions table, the relationships table, a history table, and ICD mappings), and related technical documentation.

### 1.2 Purpose

This document provides a summarized description of the content changes included in the July 2016 release of SNOMED Clinical Terms® (SCT) International Release.

It also includes technical notes detailing the known issues which have been identified. These are content or technical issues where the root cause is understood, and the fix has been discussed and agreed, but has yet to be implemented.

This document is available as part of the July 2016 International Edition release.

### 1.3 Scope

This document is written for the purpose described above and is not intended to provide details of the technical specifications for SNOMED CT or encompass every change made during the release.

### 1.4 Audience

The audience includes National Release Centers, WHO-FIC release centers, vendors of electronic health records, terminology developers and managers who wish to have an understanding of changes that have been incorporated into the July 2016 International Edition release.



## 2 Content Development Activity

### 2.1 Summary

Continuous quality improvement and enhancement of existing content is ongoing based on requests received via the SNOMED International Request Submission System (SIRS). Over 900 requests have been successfully edited using the new Single Concept Authoring (SCA) Tool. In addition, specifically, the July 2016 International Edition release has seen a continuation of the work driven by contributions from the Kaiser Permanente Convergent Medical Terminology (CMT), Global Medical Device Nomenclature Agency (GMDNA) and Orphanet to add new content to SNOMED CT. Further, member-identified priority projects, have driven enhancements in the anatomy hierarchy, while other project-driven changes have resulted in over (to be confirmed) edits in total, including new content additions and enhancements to existing content.

### 2.2 New and Updated Content

- In total: 2602 new concepts were authored with an additional 2019 changes made to existing concepts.

#### 2.2.1 Anatomy

- Over 100 new anatomy concepts have been added for representation of different sections of the prostate to support annotation for clinical imaging. The new codes are included in the DICOM subset for structured reporting.

#### 2.2.2 Assessment Scale

- 750 requests for new assessment scales and associated concepts e.g. procedures and observables to record scores have been added.

#### 2.2.3 Convergent Medical Terminologies (CMT)

- New concepts added continuously.

#### 2.2.4 Dentistry

- To continue improvements in coverage of the periodontal domain, over 90 new concepts to support the Dentistry subset have been added.

##### 2.2.4.1 Cephalometry

- 23 new concepts added for cephalometry a specialist domain for dentistry, subtypes of 698965000[Immaterial anatomical entity (body structure)]

#### 2.2.5 Diagnostic Imaging Procedures

- 48 new concepts added for cone beam CT imaging procedures;
- 23 new concepts added as site specific subtypes of 430447002[Computed tomography for radiotherapy planning (procedure)]

#### 2.2.6 LOINC

- Added 6 new concepts to support LOINC-SNOMED CT cooperation project: 1 Metadata; 1 Concept Model Attribute; 1 Technique; 1 Physiological process; 2 Measurement property.

#### 2.2.7 Medical Devices

- The medical devices content has been updated to align with the GMDN monthly release up to an including April 2016. This resulted in the addition of 208 new concepts. The linkage to GMDN is provided as a simple mapping file and is also current through the April 2016 GMDN monthly update. Future work will include the resolution of conceptual duplicates.



## 2.2.8 Organisms

- Added: 205 new concepts for microbiology reporting (in organism and finding hierarchies). These change resulted from review of SIRS requests, NRC RefSet gap analysis (part of post closure task for the Microbiology Reporting project), and recommendation by the Organism and Infectious Disease Redesign reporting project.

## 2.2.9 Pharmaceutical/biologic products

- Minor maintenance only.

## 2.2.10 Procedures

- New subtypes of 228615008|Provision of transport (procedure) added.

## 2.2.11 Substances

- Minor maintenance only.

## 2.2.12 Disorders

- As a result of collaboration with Orphanet (<http://www.orpha.net/consor/cgi-bin/index.php>) over 500 new concepts have been created to represent rare diseases.

## 2.2.13 Various

Based on SIRS requests a number of new concepts were added in various hierarchies.



## 2.3 Content Quality Improvement

### 2.3.1 Anatomy

- Changes made to 50 bone marrow concepts resolve the reported issue of redundant stated relationships for osteomyelitis concepts; i.e. bone marrow should not have a relationship to bone structure since bone marrow disorders are not considered to be musculoskeletal disorders.
- Changes made to over 70 concepts have fixed incorrect inferences, missing relationships and duplications. The concept model for abnormal shortening conditions by 'structure' anatomy concepts has undesirable inference results, e.g. Congenital short growth of innominate artery and Congenital short urethra are subconcepts of Congenital short trunk. The revision of the concept model has applied abnormal shortening only for 'entire' or 'part' body structures.

### 2.3.2 Disorders

- Modeling was updated for approximately 60 concepts with pattern |Allergy to X (disorder)| to correct an issue related to inference of more general |Causative agent| attributes. This work will continue with more concepts being updated in a similar manner for the January 2017 release.

### 2.3.3 Findings

- A number of changes were made as quality improvements based on SIRs requests.

### 2.3.4 Substances

- Minor maintenance only

### 2.3.5 Various

Where concepts include "Human papilloma virus" in the FSN, these have been inactivated and the FSN replaced with the new spelling of "Human papillomavirus". The current terminology for Papillomavirus as described by the International Committee on Taxonomy of Viruses (ICTV) is a single word string, i.e. Papillomavirus. Additional descriptions with 'papilloma virus' have not been inactivated; new descriptions that use 'papilloma virus' were not added where they did not already exist.



## 2.4 SNOMED CT derived products

### 2.4.1 ICD-10 map

The SNOMED CT to the International Statistical Classification of Diseases and Related Health Problems, Tenth Revision (© World Health Organization 1994) 2010 Version map (SNOMED CT to ICD-10 Map) is included in the SNOMED CT International release as a Baseline. The SNOMED CT to ICD-10 Map was created to support the epidemiological, statistical and administrative reporting needs of IHTSDO member countries and WHO Collaborating Centres.

The SNOMED CT to ICD-10 Map is released in Release Format 2 (RF2) only. It is located in the file `der2_iisssccRefset_ExtendedMapFull_INT_20160731.txt`, which is in the Map folder under Refset, in each of the three RF2 Release Type folders.

The SNOMED CT to ICD-10 Map is released as Refset 447562003 [ICD-10 complex map reference set (foundation metadata concept)].

#### 2.4.1.1 Content development activity summary

The map is a directed set of relationships from SNOMED CT source concepts to ICD-10 target classification codes. The SNOMED CT source domains for the MAP are limited to subtypes of 404684003 [clinical finding], 272379006 [event] and 243796009 [situation with explicit context]. The target classification codes are ICD-10 2010 release.

#### 2.4.1.2 Mapped content for July 2016

The map provided for the July 2016 release has been updated, and now represents a complete map from SNOMED CT International release to ICD-10 2010 version. We would welcome feedback on any issues that users of the map may detect when using the map. Issues should be submitted via [mapping@ihtsdo.org](mailto:mapping@ihtsdo.org)

### 2.4.2 ICD-9-CM map

IHTSDO produced a SNOMED CT to ICD-9-CM Epidemiological and Statistical Map with each SNOMED CT International Release. The artifact provided a map from a clinical statement expressed in SNOMED CT to a target code(s), or in some cases no target, in the ICD-9-CM classification. The SNOMED CT to ICD-9-CM Epidemiological and Statistical Map includes maps from the SNOMED CT Clinical Findings to ICD-9-CM 2012, the last updated version.

The World Health Organization stopped maintenance of ICD-9 in the 1990s when ICD-10 came into use by the WHO Member States. The United States (U.S.) National Center for Health Statistics (NCHS) is responsible for maintenance of the clinical modification (CM) of ICD-9. The last regular, annual update to ICD-9-CM code was on October 1, 2011.

In view of the legacy nature of the classification, a deprecation process has been followed, to remove the SNOMED CT to ICD-9-CM Epidemiological and Statistical Map from the International edition. The deprecation notice and documents can be found here: <https://confluence.ihtsdotools.org/display/PL/Deprecation>

The SNOMED CT to ICD-9-CM map has therefore been deprecated without support, as of the July 2016 International edition. The Static version of the map (based on the January 2016 content) is available on the IHTSDO MLDS distribution site (<https://mlds.ihtsdotools.org/#/ihtsdoReleases>), for any users who wish to access it during their transition to SNOMED CT or ICD-10-CM.



## 3 Technical notes

### 3.1 Known Issues

Known Issues are content or technical issues where the root cause is understood, and the resolution has been discussed and agreed but has yet to be implemented. This can be due to a number of reasons, from lack of capacity within the current editing cycle, to the risk of impact to the stability of SNOMED CT if the fix were to be deployed at that stage in the Product lifecycle.

For the Snomed CT July 2016 International edition, the following Known Issues were identified, and agreed to be resolved in the next editing cycle (to be published in January 2017):

Key	Summary	Description	P
ISRS-6	Qualifying Relationships (RF1)	In line with the RF1 deprecation plan approved by the General Assembly in October 2015, IHTSDO will take a new approach to generating qualifying relationships in the RF1 distribution of the SNOMED CT International Edition. The scope of qualifying relationships in the July 2016 International Edition will be limited to Lateralization Qualifying Relationships in the Body Structure hierarchy. The conversion utility will take an RF2 Laterality reference set (available from the IHTSDO Licensing and Distribution system (MLDS)) as its input. This approach is required so that the new algorithmic derivation of RF1 files from the authoritative RF2 distribution can be run independently of IHTSDO from 2017 onwards. The relevant stakeholders have confirmed that this will have no negative impact on them or their licensees.	4
ISRS-8	Additional, non-defining relationships	"Part-of" relationships are not currently maintained - they were originally defining relationships, which were changed to "additional" in 2005 and left in the relationship table. In 2008, when stated relationships became part of the distributed files, the stated "part-of" relationships were not included because they were non defining and were not available. Therefore, only inferred "part-of" relationships were distributed until 2005, after which they became non-defining. The Anatomy remodelling, which resolves this issue, is due for completion in 2018. The proposed interim solution, agreed with subject-matter experts, is to insert the additional relationships into the Stated relationship file, which would then create the Inferred relationships file as per the normal process. This would be actioned through the Delta files, with a current effectiveTime, in order to correctly preserve the historical audit trail. This will mean that parties who currently classify stated relationship files will need to ensure that their process removes any non-defining relationships prior to classification. After discussing the proposed solution in detail with the technical teams, we have identified several potential risks with the proposed approach, and so are conducting a thorough analysis before proceeding. This will necessarily include engagement with numerous parties, and so will take time to confirm the approach - once completed it will also require significant testing. We are therefore targeting the January 2017 International edition for implementation of the resolution - although this is open to rescheduling depending on the agreed solution.	4
ISRS-45	Historical relationship types (RF1)	Three retired concepts have a historical relationship of an inappropriate type: 139521000 267174001 700043003	4
ISRS-46	MOVED_TO status acceptability (RF1)	Ten RF1 descriptions for active concepts are status 10 (MOVED_TO), alongside descriptions with active status: 473038012: Hyperprolinemia type II 473040019: Hyperprolinemia, type II 357693015: Lichen planus pigmentosus 377070012: Joubert syndrome 378213010: Irapa type spondyloepimetaphyseal dysplasia 1787720010: Frontal fibrosing alopecia 473039016: Hyperprolinaemia type II 473043017: Hyperprolinaemia, type II 113698011: Warkany syndrome 187742012: Caroli's disease	4
ISRS-47	Multiple historical relationships (RF1)	Three concepts in RF1 have more than one historical relationship (except MAY_BE_As, MOVED_TOs OR WAS_As): 79965005 137650007 410068002	4
ISRS-49	Concepts with FSN's of inappropriate status (RF1)	Two RF1 concepts have FSN's of inappropriate status, due to having active inactivation indicators: 468477019 0 331569003 Soya oil 84.75% bath oil 0 1 en 1 721321019 1 331569003 Soya oil 84.75% bath oil (substance) 0 3 en 1 1192521011 5 331569003 Soya oil 84.75% bath oil (product) 0 3 en 1 2548498010 3 416097007 Pubic bone somatic dysfunction 0 1 en 1 2546220016 3 416097007 Pubic bone somatic dysfunction (finding) 0 3 en 1	4

6 issues





## 3.2 Resolved Issues

Resolved issues are Known Issues which were not fixed as part of the previous release lifecycle, but which have now been resolved in the latest release - in this case the July 2016 International Edition. They can also be issues found during the Alpha and Beta testing of the current release, which were resolved before the final deployment of the associated Member release. Finally they can be issues which were reported or found during the testing phase, but which have been closed without any action taken.

The Resolved Issues for the Snomed CT July 2016 International edition can be found here:

Key	Summary	Description	P	Reporting Entity	Resolved
ISRS-7	Complex map assertions to be removed from the RVF	<p>Due to the planned deprecation of ICD-9-CM (as of July 2016 International edition), the Complex Map files are being removed from the Release package (see the Release Notes for the July 2016 International edition for full details of this)</p> <p>All associated RVF assertions therefore need to be removed from the International edition assertion group, in order to prevent false positives when we run the validation against all International edition builds.</p> <p>RESOLUTION: The RVF assertion has been removed, and so the unnecessary issues will no longer appear in the report.</p>	2	Internal (IHTSDO)	2016-Jun-02
ISRS-10	The Extended Map file references 3 concepts which don't exist in the Concept file	<p>NEHTA reported this potential issue as part of the pre-alpha testing that they performed for IHTSDO on 11/05/2016</p> <p>The xder2_iisssccRefset_ExtendedMapSnapshot_INT_20160731.txt references 3 identifiers which don't exist in the data: 715392006 715393001 716708005</p> <p>RESOLUTION: All relevant mappings have either been removed, or updated with the correct concepts.</p> <p>NEHTA confirmed that this issue was fixed in the Beta release, as per their email at 21:45 on 07/06/2016</p>	3	Australia (NEHTA)	2016-Jun-02
ISRS-11	The following relationships violate the range for the "After" attribute	<p>NEHTA reported this as part of the pre-alpha testing that they performed for IHTSDO on 11/05/2016:</p> <p>The following relationships violate the range for the "After" attribute</p> <p>6555608023 2016-07-31 00:00:00.0 1 9000000000000207008 716103008 217701002 0 255234002 900000000000011006 9000000000000451002 6555613022 2016-07-31 00:00:00.0 1 9000000000000207008 716104002 217697000 0 255234002 900000000000011006 9000000000000451002</p> <p>RESOLUTION: This was resolved for the Alpha release, as both have had new FSNs added which involved removing the word "after" and replacing with "due to".</p> <p>NEHTA confirmed that this issue was fixed in the Beta release, as per their email at 21:45 on 07/06/2016</p>	3	Australia (NEHTA)	2016-Jun-02
ISRS-12	Language refset entries with multiple inactivated and activated states in the Delta	<p>NEHTA reported this as part of their pre-alpha testing that they did for IHTSDO on 11/05/2016:</p> <p>There are several language refset entries where the 20160731 release data retires an entry and recreates a new entry with a different UUID with the exact same data, e.g. You could delete all 4 of these rows from the delta and have the exact same result: (eg)</p> <p>0845f3af-a91e-555f-83c9-261d82120c88 20160731 0 9000000000000207008 9000000000000509007 512168017 9000000000000549004 1ea99a36-8ae1-4327-89bd-2397376d98e5 20160731 1 9000000000000207008 9000000000000508004 512168017 9000000000000549004 2e6c483b-67d9-4c38-812e-74d477e14f13 20160731 1 9000000000000207008 9000000000000509007 512168017 9000000000000549004 5533d7c5-c445-5197-a8f0-d4a002f359b3 20160731 0 9000000000000207008 9000000000000508004 512168017 9000000000000549004</p> <p>RESOLUTION: Language file was updated accordingly, and a new RVF assertion was created to capture any future recurrences of this issue.</p> <p>NEHTA confirmed that this issue was fixed in the Beta release, as per their email at 21:45 on 07/06/2016</p>	2	Australia (NEHTA)	2016-Jun-02
ISRS-14	ICD-0 Maps (RF1)	<p>The ICD-0 Cross Maps are incompatible with the new algorithmic RF1 conversion process, which needs to be self-contained self-contained in line with the RF1 deprecation plan approved by the General Assembly in October 2015. IHTSDO have therefore removed the ICD-0 Cross Maps from the RF1 package from the July 2016 International Edition onwards, in order to support the required standalone nature of the RF1 conversion utility.</p> <p>RESOLUTION: The relevant stakeholders have confirmed that this will not impact them or their licensees.</p>	4	Internal (IHTSDO)	2016-Jun-29
ISRS-15	RF1 derivative works	<p>The RF1 derivative works (DualKeyIndex, WordKeyIndex and Canonical) files are incompatible with with the new algorithmic RF1 conversion process, which needs to be self-contained in line with the RF1 deprecation plan approved by the General Assembly in October 2015. IHTSDO have therefore removed these files from the RF1 package from the July 2016 International Edition onwards, in order to support the required standalone nature of the RF1 conversion utility.</p> <p>RESOLUTION: The relevant stakeholders have confirmed that this will not impact them or their licensees.</p>	4	Internal (IHTSDO)	2016-Jun-29
ISRS-16	Minor spelling errors in definitions	<p>The content team found 3 minor spelling errors when reviewing the Content Validation reports that the technical team sent to them after the final cut was taken of the content for the Alpha release:</p>	3	Internal (IHTSDO)	2016-Jun-02

1. The word "metaphyseal" was spelled incorrectly (717221005 Metaphyseal dysplasia Braun Tinschert type (disorder)), below is the correct version:

US Preferred, GB No

Characterized by metaphyseal undermodeling with broadening of the long bones and femora with an 'Erlenmeyer flask' appearance, expansion and bowing of the radii with severe varus deformity and flat exostoses of the long bones at the metadiaphyseal junctions. It has been described in four German families originating from the same town in Bohemia and in a 7-year-old Japanese girl. Transmission is autosomal dominant.

GB Preferred, US No

Characterised by metaphyseal undermodelling with broadening of the long bones and femora with an 'Erlenmeyer flask' appearance, expansion and bowing of the radii with severe varus deformity and flat exostoses of the long bones at the metadiaphyseal junctions. It has been described in four German families originating from the same town in Bohemia and in a 7-year-old Japanese girl. Transmission is autosomal dominant.

2. 716096005 Hypospadias and intellectual disability syndrome Goldblatt type (disorder). Definition has misspelled word: "mirocephaly" - correction below:

A very rare multiple congenital anomalies syndrome described in three brothers of one South-African family, and with features of hypospadias and intellectual deficit, in association with microcephaly, craniofacial dysmorphism, joint laxity and beaked nails.

3. 715217004. Misspelled word: ophthalmoplegia - missing "h".

US Preferred; GB No:

An inherited developmental defect syndrome characterized by multiple congenital contractures of limbs, without primary neurologic and/or muscle disease that affects limb function, and ocular anomalies (ptosis, external ophthalmoplegia and/or strabismus). Intelligence is normal.

GB Preferred, US No:

An inherited developmental defect syndrome characterised by multiple congenital contractures of limbs, without primary neurologic and/or muscle disease that affects limb function, and ocular anomalies (ptosis, external ophthalmoplegia and/or strabismus). Intelligence is normal.

RESOLUTION: Spelling corrected in all cases.

ISRS-17	Identifier issue when versioning the content in MAIN for July 2016 release	When the versioning of the content was run in the Terminology Server it experienced issues, due to the assignment of the SCTID's in CIS (the setting of the effectiveTime and released flag on all the components in MAIN was successful). This turned out to be an issue with the ID Namespaces, likely a result of donated content.	2	Internal (IHTSDO)	2016-May-26
		RESOLUTION: IHTSDO technical team confirmed that this has been resolved in Production, and the ticket can therefore be closed.			
ISRS-18	RVF Failure (Pre-Alpha) - assertionUuid: "5c37bee7-62ad-41f9-93e3-12eb4803e618" - Complex Map failure	assertionUuid: "5c37bee7-62ad-41f9-93e3-12eb4803e618", assertionText: "The current complex map refset full file contains all previously published data unchanged", failureCount: 263919	3	Internal (IHTSDO)	2016-May-16
		RESOLUTION: This failure is a result of the fact that the Complex Map files have been removed from the International edition package from this release onwards, as they contained only the now deprecated ICD-9-CM data. The RVF is trying to compare the Complex Map files from the previous (Jan 2016) release against no files in this release, and so is failing all rows. This assertion failure can therefore be ignored with impunity - closing down the ticket.			
ISRS-19	RVF Failure (Pre-Alpha) - assertionUuid: "c3249e80-84f0-11e1-b0c4-0800200c9a66" - Language Refset EN-US issue	assertionUuid: "c3249e80-84f0-11e1-b0c4-0800200c9a66", assertionText: "Calling procedure testing that terms that contain EN-US language-specific words are in the same US language refset.", failureCount: 3	3	Internal (IHTSDO)	2016-May-16
		RESOLUTION: IHTSDO Content Team have confirmed on 14/05/2016 that these can safely be ignored, as they are expected errors. The content team have therefore signed them off as false positives that denote zero issues in the content, and this ticket will therefore be closed.			
ISRS-20	RVF Failure (Pre-Alpha) - assertionUuid: "6614ff12-fca2-42b7-a5da-ea26353979fe" - Invalid characters in descriptions	assertionUuid: "6614ff12-fca2-42b7-a5da-ea26353979fe", assertionText: "Active description of active concept consists of valid characters.", failureCount: 2	3	Internal (IHTSDO)	2016-May-16
		RESOLUTION: IHTSDO Content Team have confirmed on 14/05/2016 that these can safely be ignored, as they are expected errors. They show up as a spelling error was fixed in the FSN or similar. There will be no new FSNs with special characters created in future. The content team have therefore signed them off as false positives that denote zero issues in the content, and this ticket will therefore be closed.			
ISRS-21	RVF Failure (Pre-Alpha) - assertionUuid: "6138248d-8cc8-4bc2-8043-cd609fdd640c" - Non-Capitalisation of active definition	assertionUuid: "6138248d-8cc8-4bc2-8043-cd609fdd640c", assertionText: "The first letter of the active definition should be capitalized.", failureCount: 1	3	Internal (IHTSDO)	2016-May-16
		RESOLUTION: IHTSDO Content Team have confirmed on 14/05/2016 that these can safely be ignored, as they are expected errors. The content team have therefore signed this off as a false positive that denote zero issues in the content, and this ticket will therefore be closed.			
ISRS-22	RVF Failure (Pre-Alpha) - assertionUuid: "cc9c5340-84f0-11e1-b0c4-0800200c9a66" - Language refset issue EN-GB	assertionUuid: "cc9c5340-84f0-11e1-b0c4-0800200c9a66", assertionText: "Calling procedure testing that terms that contain EN-GB language-specific words are in the same GB language refset.", failureCount: 31	3	Internal (IHTSDO)	2016-May-16
		RESOLUTION: IHTSDO Content Team have confirmed on 14/05/2016 that these can safely be ignored, as they are expected errors. The content team have therefore signed them off as false positives that denote zero issues in the content, and this ticket will therefore be closed.			



ISRS-23	Content issue - Movements between International edition and extension Namespaces	Multiple concepts were found to have moved from the International edition to the UKTC extension namespace (370137002). These movements need to be verified as valid by the content team.  RESOLUTION: IHTSDO Content Team have confirmed on 16/05/2016 that all of the movements were valid. They subsequently confirmed that the movements were subject to the same author review process as normal concepts, and that therefore there's no requirement to validate these movements as part of the Release Process in future. This ticket can therefore be closed with no further action required.	2	Internal (IHTSDO)	2016-May-16
ISRS-26	Erroneously inactivated concept needs to be re-activated	The content team discovered that a valid concept had accidentally been inactivated:  126064005  Gastrostomy tube, device   They have therefore requested that we re-activate it accordingly.  RESOLUTION: Resolved as requested - concept re-activated.	2	Internal (IHTSDO)	2016-Jun-02
ISRS-27	Spelling error found in an FSN	The content team found the following spelling error in an FSN:  SCTID: 715536005 Positron emission tomography with computed tomography gallium 68 dotanoc whole body uptake study (procedure)  This should be corrected to:  Positron emission tomography with computed tomography gallium 68 dotatoc whole body uptake study (procedure)  RESOLUTION: Description updated accordingly.	3	Internal (IHTSDO)	2016-Jun-02
ISRS-29	Content issue - relationship has a morphologic abnormality as destination concept	This is one of several Concept model violations that NEHTA reported as part of their Alpha feedback:  · 6598215026 Injection of arteriovenous fistula using fluoroscopic guidance (procedure) Procedure site - Indirect (attribute) Arteriovenous fistula (morphologic abnormality)  This relationship has a morphologic abnormality as destination concept. Allowable range is "Anatomical or acquired body structure".  RESOLUTION: Resolved accordingly in the Beta Release.  NEHTA confirmed that this issue was fixed in the Beta release, as per their email at 21:45 on 07/06/2016	3	Australia (NEHTA)	2016-Jun-08
ISRS-30	Content issue - relationship is a "Due to" relationship to a "Procedure"	This is one of several Concept model violations that NEHTA reported as part of their Alpha feedback:  6598221027 is a "Due to" relationship to a "Procedure". Only Clinical Findings and Events are allowed. - I am not able to search on relationship IDs, need concept ID.  RESOLUTION: Relationship set to type "After" in Beta release.  NEHTA confirmed that this issue was fixed in the Beta release, as per their email at 21:45 on 07/06/2016	3	Australia (NEHTA)	2016-Jun-02
ISRS-31	Content issue - concepts are (incorrectly) subtypes of the Qualifier value hierarchy as well as some other hierarchy	This is one of several Concept model violations that NEHTA reported as part of their Alpha feedback:  The following 4 concepts are all (incorrectly) subtypes of the Qualifier value hierarchy as well as some other hierarchy. These were picked up because they failed our Concept Model checks for "Qualifier value" concepts. The attributes are fine, but there's a dodgy ancestor/parent. (We don't actually have a check for dual lineage – but it's not a bad idea.):  315058005 Hereditary nonpolyposis colon cancer (disorder) 716654007 Non-polyposis Turcot syndrome (disorder) 715807002 Familial Creutzfeldt-Jakob (disorder) 717248006 Colostomy Irrigation assessment (procedure)  "Autosomal dominant inheritance (qualifier value)" seems to be a common ancestor for all.  RESOLUTION: Resolved accordingly in the Beta release  NEHTA confirmed that this issue was fixed in the Beta release, as per their email at 21:45 on 07/06/2016	3	Australia (NEHTA)	2016-Jun-02
ISRS-32	Content issue - potential attribute issue (or issue with NEHTA's validate routine)	This is one of several Concept model violations that NEHTA reported as part of their Alpha feedback:  This one is a subtype of "Action (qualifier value)"  · 266719004 Oral chemotherapy (procedure) - 717248006  I'm getting a fail regarding this concept using "Route of administration" attribute, but looks fine as far as I can see. So probably some sort of a defect in our checks... Just mentioning in case the content team want to check. (If they find an issue, I'm keen to know what it is ... )  RESOLUTION: IHTSDO content team confirmed that the issue reported by NEHTA was not a problem. However, when investigating this concept another issue was found - Concept was made fully defined, had no substance and was inheriting two role groups. Therefore it was resolved as follows:	3	Australia (NEHTA)	2016-Jun-02



1. Concept was made primitive
2. Re-activated attribute/value "Direct - substance = Drug or medicament (substance)"

NEHTA confirmed that this issue was fixed in the Beta release, as per their email at 21:45 on 07/06/2016

ISRS-33	RF1 Issue - Foreign key constraint violation for 1 row	<p>The UKTC reported the following RF1 issue, after having completed their Alpha testing:</p> <p>Foreign key constraint violation for 1 row from the CONCEPTID2 column of the RELATIONSHIP table to the CONCEPTID column of the CONCEPTS table. Single offending CONCEPTID2 is 446609009 (Simple type reference set RF2 metadata). Row 1080220 700043003 159083000 446609009 2 0 0</p> <p>RESOLUTION: Relevant record was removed from the RF1 Beta package accordingly.</p>	3	UK (UKTC/HSCIC)	2016-Jun-02
ISRS-34	Content issue - inactivate concepts/descriptions created as new	<p>NEHTA reported the following concepts/descriptions as having been created as new but inactive in the Alpha release:</p> <p>Concepts:</p> <p>715969003 2016-07-31 00:00:00 0 900000000000207008 900000000000074008 716523003 2016-07-31 00:00:00 0 900000000000207008 900000000000074008 716715002 2016-07-31 00:00:00 0 900000000000207008 900000000000074008 716819003 2016-07-31 00:00:00 0 900000000000207008 900000000000074008 716886000 2016-07-31 00:00:00 0 900000000000207008 900000000000074008 717035001 2016-07-31 00:00:00 0 900000000000207008 900000000000074008 718057005 2016-07-31 00:00:00 0 900000000000207008 900000000000074008 718058000 2016-07-31 00:00:00 0 900000000000207008 900000000000074008 718102006 2016-07-31 00:00:00 0 900000000000207008 900000000000074008 718185005 2016-07-31 00:00:00 0 900000000000207008 900000000000074008 718203009 2016-07-31 00:00:00 0 900000000000207008 900000000000074008</p> <p>Descriptions</p> <p>3301757018 2016-07-31 00:00:00 0 900000000000207008 715167002 en 90000000000013009 Open Episcopal Church, follower of religion 90000000000017005 3302037013 2016-07-31 00:00:00 0 900000000000207008 715266002 en 9000000000003001 Infection of skin of periorcular region (disorder) 90000000000020002 3302696017 2016-07-31 00:00:00 0 900000000000207008 715449002 en 90000000000013009 Assessment using Bus Story 90000000000020002 3303828016 2016-07-31 00:00:00 0 900000000000207008 715823002 en 90000000000013009 Disability Assessment Schedule 2.0 score 90000000000020002 3304007015 2016-07-31 00:00:00 0 900000000000207008 715874005 en 9000000000003001 Neoscytalidium dimidiatum infection of skin (disorder) 90000000000017005 3304479011 2016-07-31 00:00:00 0 900000000000207008 716027008 en 9000000000003001 Dicarboxyhexadecanoylcarnitine (substance) 90000000000020002 3304480014 2016-07-31 00:00:00 0 900000000000207008 716027008 en 90000000000013009 Dicarboxyhexadecanoylcarnitine 90000000000020002 3304484017 2016-07-31 00:00:00 0 900000000000207008 716029006 en 9000000000003001  Dicarboxyoctadecanoylcarnitine (substance) 90000000000020002 3304485016 2016-07-31 00:00:00 0 900000000000207008 716029006 en 90000000000013009  Dicarboxyoctadecanoylcarnitine 90000000000020002 3304590016 2016-07-31 00:00:00 0 900000000000207008 716054006 en 9000000000003001 Human leukocyte antigen A 3101 allele present (finding) 90000000000020002 3304591017 2016-07-31 00:00:00 0 900000000000207008 716054006 en 90000000000013009 Human leukocyte antigen A 3101 allele present 90000000000020002 3304747015 2016-07-31 00:00:00 0 900000000000207008 716104002 en 9000000000003001 Open wound of hand after dog bite (disorder) 90000000000020002 3304748013 2016-07-31 00:00:00 0 900000000000207008 716104002 en 90000000000013009 Open wound of hand after dog bite 90000000000020002 3304807016 2016-07-31 00:00:00 0 900000000000207008 262570008 en 90000000000013009 Deep wound following human bite 90000000000020002 3304808014 2016-07-31 00:00:00 0 900000000000207008 262570008 en 9000000000003001 Deep wound following human bite (disorder) 90000000000020002 3305361016 2016-07-31 00:00:00 0 900000000000207008 89689008 en 90000000000013009 Congenital deformity of the knee 90000000000020002 3305434015 2016-07-31 00:00:00 0 900000000000207008 716294003 en 9000000000003001 Inadequate occlusal dental restoration (finding) 90000000000020002 3305435019 2016-07-31 00:00:00 0 900000000000207008 716294003 en 90000000000013009 Inadequate occlusal dental restoration 90000000000020002 3305444018 2016-07-31 00:00:00 0 900000000000207008 716299008 en 9000000000003001 Retention of dental device following dental procedure (disorder) 90000000000020002 3305445017 2016-07-31 00:00:00 0 900000000000207008 716299008 en 90000000000013009 Retention of dental device following dental procedure 90000000000020002 3306043012 2016-07-31 00:00:00 0 900000000000207008 716458004 en 9000000000003001 Able to tolerate changing nappy (finding) 900000000000448009 3306280014 2016-07-31 00:00:00 0 900000000000207008 285721000119104 en 90000000000013009 HX of MI, ST segment elevation 900000000000448009 3306281013 2016-07-31 00:00:00 0 900000000000207008 285721000119104 en 90000000000013009 HISTORY OF MYOCARDIAL INFARCTION (HEART ATTACK) 900000000000448009 3308499014 2016-07-31 00:00:00 0 900000000000207008 717139005 en 9000000000003001 Percutaneous electrosurgical probe, tumour-ablation (physical object) 90000000000020002 3312006018 2016-07-31 00:00:00 0 900000000000207008 28180100009108 en 9000000000003001 Bacterial prostatitis (disorder) 90000000000020002 3312010015 2016-07-31 00:00:00 0 900000000000207008 31819100009109 en 9000000000003001 Bacterial hepatitis (disorder) 90000000000020002</p> <p>RESOLUTION: All relevant concepts and descriptions have been removed accordingly in the Beta release.</p> <p>NEHTA confirmed that this issue was fixed in the Beta release, as per their email at 21:45 on 07/06/2016</p>	3	Australia (NEHTA)	2016-Jun-02
ISRS-35	Duplicate Association Reference record	<p>NEHTA reported the following duplicate Association Reference record as part of their Alpha feedback:</p>	3	Australia (NEHTA)	2016-Jun-02



03c48748-72db-43df-9644-0012e6ccdad1 2016-07-31 00:00:00 1 900000000000207008 900000000000527005 312897007 312901001  
3b9ea4b8-cfaa-4f5b-bd1c-7f812739a086 2016-07-31 00:00:00 1 900000000000207008 900000000000527005 312897007 312901001

RESOLUTION: Duplicate record removed accordingly in the Beta release.

NEHTA confirmed that this issue was fixed in the Beta release, as per their email at 21:45 on 07/06/2016

ISRS-36	Language refset entries referencing non-existent description ID's	NEHTA reported, as part of their Alpha feedback, that "There's about 4000 language references that references non-existent descriptionIds."  RESOLUTION: This was confirmed to be a non-issue, as the references were proven to be valid Text Definitions rather than Descriptions. Issue was therefore closed without action.	3	Australia (NEHTA)	2016-Jun-02
ISRS-38	OWL file name not matching latest naming convention	The Owl script naming convention was agreed to be updated from "tls2_StatedRelationshipsToOwlKRSS_INT_[date].pl" to "tls2_StatedRelationshipsToOwlKRSS_Script_INT_[date].pl"  RESOLUTION: Filename updated accordingly in the Beta release.	3	Internal (IHTSDO)	2016-Jun-02
ISRS-39	Duplicates in the Association Refset	After having created the new RVF assertions to capture the issue reported in ISRS35, the RVF report now shows new issues found:  <a href="https://rvf.ihtsdotools.org/api/v1/result/1464795731182?storageLocation=international/snomed_ct_international_edition_rf2_beta_release/2016-06-01T15:30:25">https://rvf.ihtsdotools.org/api/v1/result/1464795731182?storageLocation=international/snomed_ct_international_edition_rf2_beta_release/2016-06-01T15:30:25</a>  assertionUuid: "2ddc9a28-150d-47a4-9b0e-7dbff2efdd72", assertionText: "There is a 1:1 relationship between the id and the key values in the ASSOCIATION REFSET snapshot file.", failureCount: 2, firstNInstances: [ { conceptId: 253589000, detail: "ReferencedComponent: id=253589000 and targetComponentId:204342004 contains multiple association refset member ids." } , { conceptId: 439575008, detail: "ReferencedComponent: id=439575008 and targetComponentId:402878003 contains multiple association refset member ids." } ],  RESOLUTION: Inactive components reset to active so that the existing component ids are preserved, and duplicates removed.  RF1 records impacted: none  RF2 records impacted: <ul style="list-style-type: none"><li>• 2 records removed from the Association reference file.</li></ul>	3	Internal (IHTSDO)	2016-Jun-17
ISRS-41	RVF Assertion failure: 89ceaf00-79b9-11e1-b0c4-0800200c9a66	After improving the scope of the RVF testing by adding new validation assertions, the following new failure was evident in the Beta release:  assertionUuid: "89ceaf00-79b9-11e1-b0c4-0800200c9a66", assertionText: "All stated relationships inactivated in current release must have been active in the previous release.", failureCount: 67, firstNInstances: [ {conceptId: 274765004, detail: "Stated relationship: id=6539696029 is inactive in the current release but no active state found in the previous snapshot."}]  RESOLUTION: All 67 "born inactive" stated relationships have been deleted accordingly.  RF1 records impacted: none  RF2 records impacted: <ul style="list-style-type: none"><li>• 67 records removed from the Stated Relationship file.</li></ul>	3	Internal (IHTSDO)	2016-Jun-17
ISRS-43	Spelling errors in a new FSN: Concept 718390004	A spelling error was found in a synonym, then upon further investigation this turned out to also be an issue in the FSN. This meant that the priority increased, and so it was fixed in the July 2016 edition instead of in the next editing cycle for January 2017:  Incorrect version:  Modified Wisconsin Card Scoring Test score (observable entity) Modified Wisconsin Card Scoring Test score MWCST (Modified Wisconsin Card Scoring Test) score  Correct version:  Modified Wisconsin Card Sorting Test score (observable entity) Modified Wisconsin Card Sorting Test score M-WCST (Modified Wisconsin Card Sorting Test) score  The duplicate concept (718902005) created since the content cut was taken for July 2016 was also deleted.	2	Internal (IHTSDO)	2016-Jun-17

RESOLUTION: 1. New concept (719073006) created with the correct FSN. 2. Incorrect concept (718390004) deleted from the content accordingly.

RF1 records impacted:

- 1 additional record in the Concept file. 1 record removed from the Concept file.
- 3 additional records in the Description file. 3 records removed from the Description file.
- 3 additional records in the Subset Members file. 3 records removed from the Subset Members file.
- 1 additional record in the Relationship files. 1 record removed from the Relationship files.
- 4 additional records in the Component History file. 4 records removed from the Component History file.

RF2 records impacted:

- 1 additional record in the Concept file. 1 record removed from the Concept file.
- 3 additional records in the Description file. 3 records removed from the Description file.
- 6 additional records in the Language file. 6 records removed from the Language file.
- 1 additional record in the Relationship file. 1 record removed from the Relationship file. 7 records updated in the Relationship file.
- 1 additional record in the Stated Relationship file. 1 record removed from the Stated Relationship file.
- 2 additional records in the Simple Map file. 2 records removed from the Simple Map file.

ISRS-48 Unknown FSN postfix values (RF1), due to invalid RF2 relationships	<p>Unknown FSN postfix values occurring as children of other FSN postfix values, due to the following two RF2 concepts (the first relationship in each case is invalid):</p> <p>6549053021 716016006 Daratumumab (substance) 27867009 Antineoplastic agent (product)          6549054026 716016006 Daratumumab (substance) 49616005 Monoclonal antibody (substance)          6596307021 716318002 Lynch syndrome (disorder) 263681008 Autosomal dominant inheritance (qualifier value)          6596308027 716318002 Lynch syndrome (disorder) 699346009 Hereditary cancer-predisposing syndrome (disorder)</p> <p>RESOLUTION: Two erroneous relationships removed:</p> <p>20160731 1 900000000000207008 716016006 27867009 0 116680003 900000000000011006 900000000000451002          20160731 1 900000000000207008 716318002 263681008 0 116680003 900000000000011006 900000000000451002</p> <p>Correct relationships added in:</p> <p>20160731 1 900000000000207008 716016006 372688009 0 116680003 900000000000011006 900000000000451002          20160731 1 900000000000207008 716318002 11164009 0 116680003 900000000000011006 900000000000451002</p>	3	UK (UKTC/HSCIC)	2016-Jul-22
ISRS-51 Concepts with no Preferred Terms	<p>Six concepts have been found with no Preferred Terms:</p> <p>10637751000119102          137631000119107          315058005          363912006          411728000          63160006</p> <p>RESOLUTION: These were resolved immediately in time for today's Member Release, by making the appropriate description the Preferred Term in each case.</p> <p>RF1 records impacted:</p> <ul style="list-style-type: none"> <li>• 5 additional records in the Component History file.</li> <li>• 12 records updated in each of the Subset Members files.</li> <li>• 24 records updated in the Description file.</li> </ul> <p>RF2 records impacted:</p> <ul style="list-style-type: none"> <li>• 12 additional records in the Language files.</li> <li>• 16 records updated in the Language files.</li> </ul>	2	Internal (IHTSDO)	2016-Jun-30
ISRS-52 Duplicate Relationship ID's found across Stated and Inferred files	<p>There are 110 Stated Relationship records that have been found to have identical ID's to unrelated Inferred Relationship records.</p> <p>Whilst this has no clinical impact, and should not have any significant implementation impact, it should still be fixed before the Public release of the July 2016 International edition in order to ensure that the high quality of the release is preserved.</p> <p>RESOLUTION: The Inferred relationship file was re-created with new ID's assigned to the relevant records. The root cause was promptly fixed, which restricted the scale of the problem to only 110 records.</p>	2	Internal (IHTSDO)	2016-Jul-20



### 3.3 Technical updates

#### Complex map files

In line with the ICD-9-CM deprecation process described in section 2.4.2 above, the complex map files have been removed from the RF2 release package. This is because the ICD-9-CM map constituted the entirety of the complex map files, and as this map has now been deprecated, there is no longer a use case to include the complex map files. The same applies to the ICD9 CrossMaps files in the RF1 package, which have been removed for the same reason.

#### RF1 package

In line with the RF1 deprecation plan approved by the General Assembly in October 2015, IHTSDO will take a new approach to generating qualifying relationships in the RF1 distribution of the SNOMED CT International Edition.

The scope of qualifying relationships in the July 2016 International Edition will be limited to Lateralization Qualifying Relationships in the Body Structure hierarchy. The conversion utility will take a RF2 Laterality reference set as its input. The RF2 Laterality reference set will be available from the IHTSDO Licensing and Distribution system (MLDS). The approach also removes qualifiers not related to body structures because these cannot be reproduced algorithmically. This approach is required so that the new algorithmic derivation of RF1 files from the authoritative RF2 distribution can be run independently of IHTSDO from 2017 onwards.

#### File types now removed from the RF1 package

The following files will be removed from the RF1 package, as they are incompatible with the new algorithmic RF1 conversion process, which (as detailed above) needs to be self-contained going forward:

- res1\_DualKeyIndex\_Concepts-en-US\_INT\_[date].txt
- res1\_DualKeyIndex\_Descriptions-en-US\_INT\_[date].txt
- res1\_WordKeyIndex\_Concepts-en-US\_INT\_[date].txt
- res1\_WordKeyIndex\_Descriptions-en-US\_INT\_[date].txt
- res1\_Canonical\_Core\_INT\_[date].txt
- der1\_CrossMaps\_ICDO\_INT\_[date].txt
- der1\_CrossMapSets\_ICDO\_INT\_[date].txt
- der1\_CrossMapTargets\_ICDO\_INT\_[date].txt

#### Resource Filename update

The naming convention for the Stated Relationship to OWL resource file has been updated from "tls2\_StatedRelationshipsToOwlKRSS\_INT\_[date].pl" to "tls2\_StatedRelationshipsToOwlKRSS\_Script\_INT\_[date].pl"

#### RF2 package format

For future reference, the RF2 package convention dictates that it contains all relevant files, regardless of whether or not there is content to be included in each particular release. Therefore, the package contains a mixture of files which contain both header rows and content data, and also files that are intentionally left blank (including only a header record). The reason that these files are not removed from the package is to draw a clear distinction between

1. ...files that have been deprecated (and therefore removed from the package completely), due to the content no longer being relevant to RF2 in this or future releases, and
2. ...files that just happen to contain no data in this particular release (and are therefore included in the package but left blank, with only a header record), but are still relevant to RF2, and could therefore potentially contain data in future releases.

This allows users to easily distinguish between files that have purposefully been removed or not, as otherwise if files in option 2 above were left out of the package it could be interpreted as an error, rather than an intentional lack of content in that release.