

SNOMED CT July 2021 International Edition - SNOMED International 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.

SNOMED International 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 2021 release of SNOMED Clinical Terms® (SCT) International Release.

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

The SNOMED International Release Notes are available alongside the July 2021 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 2021 International Edition release.

2. Content Development Activity

2.1. Summary



NOTICE of significant changes in the July 2021 International Edition release

Following on from the successful technical previews of the impending Concrete Domains changes, released in September 2020 and February 2021 respectively, SNOMED International are now implementing these changes in the July 2021 International Edition Production release. This contains drug concept strengths and counts expressed as concrete values in a new Relationships file.

Please see the following sections for full details of the content and technical changes:

- [2.21.3. Concrete Domains and Numeric Representation](#)
- [3.2.1.3. Concrete Domains launch](#)

Continuous quality improvement and enhancement of existing content is an ongoing process undertaken by SNOMED International in preparation for every release. The July 2021 International Release has seen a continuation of the work driven by contributions from: Kaiser Permanente i.e. Convergent Medical Terminology (CMT), Global Medical Device Nomenclature Agency (GMDNA), Orphanet and other domain specific collaborations as well as requests received via the Content Request System (CRS).

Additionally quality improvement activities are advanced via project driven initiatives summarized below. Additional work items impacting every release are updates to the SNOMED CT derived maps such as ICD-10 and ICD-O; details are included in these release notes.

Information about editorial decisions may be found in the [SNOMED CT Editorial Guide](#); mapping guidance for ICD-10 can be found at this link <http://confluence.ihtsdotools.org/display/DOCICD10>

New Concepts July 2021 Release	
Domain	#New concepts
SNOMED CT Concept (SNOMED RT+CTV3)	4468
Body structure (body structure)	300
Clinical finding (finding)	2027

Event (event)	6
Environment or geographical location (environment / location)	4
Observable entity (observable entity)	377
Organism (organism)	128
Pharmaceutical / biologic product (product)	644
Physical force (physical force)	0
Physical object (physical object)	317
Procedure (procedure)	308
Qualifier value (qualifier value)	91
Record artifact (record artifact)	1
Situation with explicit context (situation)	92
Social context (social concept)	3
Specimen (specimen)	10
Staging and scales (staging scale)	29
Substance (substance)	104
SNOMED CT Model Component (metadata)	27

SCT Statistics July 2021 Release	
	#total
Total number of active concepts	350936
Total number of active + inactive components	485977
Concept inactivations	8813

2.2. COVID-19

Content relating to COVID-19 can be viewed here [SNOMED CT COVID-19 Related Content](#)

Any concepts in scope for the SNOMED CT to ICD-10 mapping have been mapped and adhere to the World Health Organization current guidelines.

2.3. Body structure

New body structure concepts: 300

Progress of the Anatomy Model and Plan for Further Demonstration Release

There are approximately 35,000 anatomy concepts to be modeled by different types of 'part of' relationships. The new model will enable the automatic generation of hierarchies to further improve content quality and consistency. The integumentary system (about 2000 concepts) has been modeled. The modeling of the musculoskeletal system (about 10,000 concepts) is currently in progress.

The concept model requires tooling enhancements to support nested expressions and the option of inferred relationships for transitive and reflexive attributes. We will inform the community of the schedule for the demo release when the tooling and content are ready. The demo release will help us to gather feedback to evaluate potential impact and options for future releases

2.3.1. Revision of Anatomy Model for Spine Related Concepts

The term 'spine' or 'vertebral column' in descriptions of disorders or procedures are often used loosely in clinical discourse but in actuality can relate to three different general anatomical concepts.

The hierarchy has been reorganized:

- 421060004 |Structure of vertebral column (body structure), with synonyms: Spinal column, Backbone, Spine, which includes the bones of the spine and associated joints and ligaments.
- 289959001 |Musculoskeletal structure of spine (body structure), which includes the vertebral column plus muscles and tendons associated with the spine.
- 1141981001 |Structure of vertebral column region (body structure), which includes the musculoskeletal structure of spine plus spinal canal, meninges, spinal cord, roots and ganglia and immediate soft tissue including adjacent vascular structures where specified.

The use of terms for combined segments of the spine, such as cervicothoracic, thoracolumbar, lumbosacral and sacrococcygeal are ambiguous in that they might relate to a combination of the segments or just the junctional area of the segments. In order to avoid false assumptions, in the anatomy class the junction of spinal segments have been made explicit by including the word 'junction' in the descriptions. The volume or extent of the junctional zones themselves are not defined consistently in the literature, but most commonly relate to the junction between two segments and one vertebra above and below. In addition, the segmental junctional joints only belong to the superior segment.

Further details can be found here <https://confluence.ihtsdotools.org/display/IAP/Review+and+quality+improvement+of+anatomy+relating+to+the+spine> (Please note, you may have to register for Confluence user account in order to access this link).

2.3.2. Joint regions

72 new concepts added for improved coverage of joint regions to support the Quality Initiative project.

2.3.3. Inactivation of 303295006 |Choroidal and/or retinal structures (body structure)

- 303295006 |Choroidal and/or retinal structures (body structure)|
- 721949003 |Structure of choroid and/or retina of left eye (body structure)|
- 721948006 |Structure of choroid and/or retina of right eye (body structure)|

The above three concepts have been inactivated. Concepts with relationships to these anatomic structures were remodeled with 2 role groups, one representing the finding site of 68703001 |Choroidal structure (body structure)| and the other for the finding site of 5665001 |Retinal structure (body structure)|.

The majority of the modeling changes were for 'chorioretinal' disorder concepts and findings and 3 procedures were also remodeled (plus one inactivation of 75278007 |Destruction of chorioretinopathy (procedure)|).

Approximately 54 disorder concepts were remodeled with 2 role groups, including 53854005 |Chorioretinal scar (disorder)| and its 18 subtypes, plus two concept inactivations of 69811008 |Peripheral disseminated choroiditis AND chorioretinitis (disorder)| and 56787009 |Peripheral focal choroiditis AND chorioretinitis (disorder)|. Approximately 30 clinical finding concepts were remodeled including 9 subretinal findings and 7 subretinal disorders all remodeled with a finding site of 41275009 |Structure of retinal pigment epithelium (body structure)|.

2.3.4. Inactivation of 266414008 |Supernumerary tooth (morphologic abnormality) and Descendants

Concepts in the 266414008 |Supernumerary tooth (morphologic abnormality) sub-hierarchy have been inactivated (approximately 60 concepts).

2.3.5. Update Spelling for Anulus Fibrosus

The spelling for concepts which include 'anulus' in the FSN have been updated to 'annulus'. A synonym with the spelling 'anulus' has been retained for this set of concepts.

For example:

- 24678008|Structure of anulus fibrosus of intervertebral disc of fifth thoracic vertebra (body structure)| has had FSN change to:
- 24678008|Structure of annulus fibrosus of intervertebral disc of fifth thoracic vertebra (body structure)

2.3.6. Reference set updates

Updated and validated release file for the lateralizable body structure reference set.

Updated and validated release files for the SEP refsets.

2.4. Quality Initiative Project

The Quality Initiative (QI) project is the implementation of the Quality Strategy. After a successful pilot project for the July 2018 release the next stage has been implemented for subsequent releases including July 2021.

Quality improvement tasks were deployed to improve internal structural consistency and ensure compliance with editorial policy related to the stated modeling of content. Additionally, correction or addition of defining relationships was carried out to accurately reflect current clinical knowledge and ensure the semantic reliability of descriptions associated with a concept.

Total count of changes for the QI project for the July 2021 release:

- Stated: A total of 10759 concepts had changes made to the Stated relationships.
- Inferred: A total of 18818 concepts affected by Inferred changes.

These figures reflect changes made in both the clinical finding and procedure hierarchies.

Information about the project can be found here [Quality Initiative - Progress](#) (Please note, you may have to register for Confluence user account in order to access this link).

QI Project July 2021 release (work has begun or been completed)	
5294002 Developmental disorder (disorder) (excluding congenital disorders)	112638000 Displacement (morphologic abnormality)

708530007 Obstructive morphology (morphologic abnormality)	70591005 Fetal disorder (disorder)
442021009 Enlargement (morphologic abnormality)	55680006 Drug overdose (disorder)
75478009 Poisoning (disorder)	1149322001 Intoxication (disorder)
708041002 Mechanical lesion (morphologic abnormality)	118245000 Measurement finding (finding)
29696001 Prolapse (morphologic abnormality)	77477000 Computerized axial tomography (procedure)
113091000 Magnetic resonance imaging (procedure)	71173004 Compression (morphologic abnormality)
276654001 Congenital malformation (disorder) (further revision with update to template)	782901001 Insertion procedure (procedure)
37068007 Lateral displacement (morphologic abnormality)	781459003 Medial displacement (morphologic abnormality)

2.5. Clinical Finding

New concepts added for clinical finding hierarchy: 2027

2.5.1. Poisoning Disorders

The modeling for approximately 3000 descendants of 441952005 |Poisoning caused by chemical substance (disorder)|, 7895008 |Poisoning caused by drug AND/OR medicinal substance (disorder)|, and 1149322001 |Intoxication (disorder)| sub-hierarchies have been updated for compliance with the newly constructed templates (based on feedback and recommendation from the Editorial Advisory Group):

- Poisoning caused by substance/product
- Intoxication caused by substance/product

More than 500 concepts of the type “ X poisoning of undetermined intent” were inactivated based on the Editorial Advisory Group recommendation.

The concepts in the clinical finding/disorder hierarchy that are defined by "Due to = << 418019003 |Accidental event (event)|" have an inferred parent of "417746004 |Traumatic injury (disorder)|". While this inference is correct for some concepts, it is not accurate for others e.g. Accidental poisoning subtypes. This is a known issue and a content tracker has been created to resolve the issue in a future release.

2.5.2. Overdose Disorders

The modeling for approximately 2200 descendants of 1149222004 |Overdose (disorder)| were updated for compliance with the newly constructed templates.

More than 400 concepts of type “ X overdose of undetermined intent” were inactivated based on the Editorial Advisory Group recommendation.

2.5.3. Remodel Rheumatoid Arthritis Diseases, Acute Rheumatic Fever, Rheumatic Heart Disease and Subtypes

Model development and remodeling for Acute rheumatic fever, Rheumatic heart disease and Rheumatoid arthritis including a separate model for the extraarticular manifestations of rheumatoid arthritis and inactivation of 34248003 [Rheumatic inflammation (morphologic abnormality)] and 103628006 [Chronic rheumatic inflammation (morphologic abnormality)] which have been replaced in defining relationships by 409774005 [Inflammatory morphology (morphologic abnormality)] and 409777003 [Chronic inflammatory morphology (morphologic abnormality)] respectively.

34248003 [Rheumatic inflammation (morphologic abnormality)] and 103628006 [Chronic rheumatic inflammation (morphologic abnormality)] had been used inconsistently for some rheumatic fever and rheumatic heart disease concepts, and a number of concepts for both rheumatic arthritis and rheumatoid arthritis. In total 82 concepts previously used 34248003 [Rheumatic inflammation (morphologic abnormality)] and 7 concepts previously used 103628006 [Chronic rheumatic inflammation (morphologic abnormality)].

A new model was developed sufficiently defining 23685000 [Rheumatic heart disease (disorder)] and 48 subtypes, and a new model developed for sufficiently defining 195528001 [Acute rheumatic fever (disorder)] and 10 subtypes and both sub-hierarchies were fully remodeled for the July 2021 release.

A new model was developed for the extra-articular manifestations of rheumatoid arthritis, and 32 relevant concepts fully remodeled and aligned under parent concept 52661003 [Extra-articular rheumatoid process (disorder)].

2.5.4. Remodel 367534004 Supernumerary tooth (disorder) and Descendants

Approximately 69 disorder concepts that are descendants of 367534004 Supernumerary tooth (disorder) have been remodeled to subsume under 371136004 Disorder of tooth development (disorder) and have had the value of their 116676008 [Associated morphology (attribute)] relationship changed to 91431006 [Supernumerary structure (morphologic abnormality)].

Concepts in the 266414008 [Supernumerary tooth (morphologic abnormality)] sub-hierarchy have been inactivated (approximately 60 concepts).

2.5.5. Remodel Injury Disorder Concepts

"Injury of X" concepts have been remodeled to reflect their generic nature by assigning the parent of "Traumatic or non-traumatic injury".

2.5.6. Inactivation of 'Acute Cerebrovascular Accident' Concepts

Concepts with an FSN that includes the term 'acute cerebrovascular accident' have been reviewed and inactivated because cerebrovascular accident is by its nature an acute disorder. Replacement concepts have been created without inclusion of the word 'acute' where required.

2.5.7. Revision 118245000 |Measurement finding (finding) and Descendants

The hierarchy 118245000 |Measurement finding (finding)| is currently undergoing structural updates as part of the Quality Initiative project.

Where appropriate this will include modeling with 363713009 |Has interpretation (attribute)| with above, below, and within reference range attribute values.

These changes will continue to be made over a number of future releases.

2.5.8. Remodel 609406000 |Pseudoallergic reaction (disorder)

609406000 |Pseudoallergic reaction (disorder)| was remodeled and renamed to 609406000 |Non-allergic hypersensitivity reaction (disorder)| (no change in meaning) to reflect current editorial guidelines.

2.5.9. Inactivation of 250171008|Clinical history and observation findings (finding)

The primitive concept 250171008 |Clinical history and observation findings (finding)| has been inactivated.

2.5.10. Inactivation of Nutritional Finding/Disorders with 'Infancy, Childhood and Adolescence' in FSN

8 nutritional finding/disorder concepts with 'infancy childhood and adolescence' in FSN have been inactivated.

For example 717930008 |Severe nutritional stunting in infancy childhood and adolescence (disorder)|.

2.5.11. Inactivation of Subtypes of 267280004 |Venous complication of pregnancy and/or puerperium (disorder)

Classification-derived descendants of 267280004 |Venous complication of pregnancy and/or puerperium (disorder)| have been inactivated.

For example, |Superficial thrombophlebitis in pregnancy and the puerperium - delivered with postnatal complication (disorder)|

2.5.12. Revision 41969006 |Idiopathic disease (disorder)

Remodeling of concepts specified as idiopathic, etiology unknown, cryptogenic, to be subtypes of 41969006 |Idiopathic disease (disorder)| when appropriate.

2.5.13. Revision 43064006|Hydronephrosis (disorder)

The modeling of 43064006|Hydronephrosis (disorder)| and descendants has been reviewed and improved where indicated.

2.5.14. Revision 109675004|Oroantral fistula (disorder)

Content in the area of Oroantral communication and fistula has been reviewed and revised in both the disorder and procedure hierarchies.

2.5.15. Inactivation of 402625004 |Developmental and/or congenital abnormality of nail (disorder)

402625004 |Developmental and/or congenital abnormality of nail (disorder)| was inactivated and its subtypes assigned with more appropriate supertypes and defined where possible.

2.5.16. Remodel 399992009 |Erythroderma (disorder)

After review, 399992009 |Erythroderma (disorder)| was marked as primitive and its inferred subtypes reclassified as appropriate.

2.5.17. Revise Descriptions for Pacemaker Finding/Disorder

Concepts which refer to a cardiac pacemaker but do not include "cardiac" in the FSN have been updated to include "cardiac pacemaker."

Where the content was ambiguous as to the location of the pacemaker, it was inactivated and replaced. Work on this area of content continues.

2.5.18. Revision 302227002 |Ecchymosis (finding)

302227002 |Ecchymosis (finding)| and descendants have been remodeled and defined where appropriate.

2.5.19. Revision 200983001 |Pityriasis lichenoides (disorder)

200983001 |Pityriasis lichenoides (disorder)| and descendants have been remodeled with a change to finding site.

2.5.20. Inactivation of 19410003 |Macrocephaly (disorder) and 1829003|Microcephalus (disorder)

19410003 |Macrocephaly (disorder)| has been inactivated and replaced by two concepts:

- 1145403003 |Macrocephaly (finding)|
- 1145402008 |Congenital macrocephaly (disorder)|

1829003|Microcephalus (disorder)| has been inactivated and replaced by two new concepts:

- 1148757008 |Microcephaly (finding)|
- 1148758003 |Congenital microcephaly (disorder)|

Subtype concepts have been added as appropriate to these new concepts.

2.5.21. Update FSN that use Non Permissible Characters

FSN has been updated for 185 concepts (across hierarchies) to align with this rule "An active FSN should not contain the special characters &, %, \$, @ or #.", and also with the editorial guidance for special characters.

2.5.22. SDoH - Social Determinants of Health Finding

5 new concepts added for housing instability finding.

2.5.23. Nutrition Finding

Added 20 nutrition finding concepts.

Notice: Inactivation reason of LIMITED/WAS_A is not allowed for any new content inactivations after the July 2018 release. The WAS_A association refset has not been updated thereafter.

At the Editorial Advisory Group meeting in April 2019, agreement was reached to discontinue the maintenance of WAS_A relationships when inactivating concepts that have a historical association to an inactive concept. When changes are made to a historical relationship for a concept that was previously inactivated using WAS_A, effort will be made to assign a new historical relationship that facilitates traceability of the concept (e.g. DUPLICATE or AMBIGUOUS) as opposed to NON-CONFORMANCE TO EDITORIAL POLICY.

Existing WAS_A relationships will be inactivated in a future release once a plan for batch reassignment of historical relationships has been developed. Until then, SNOMED International will not continue to use or maintain WAS_A relationships.

Notice: 'Co-occurrent and due to' pattern:

During the implementation of the new Description Logic features, a conflict was uncovered between the modeling of 'Co-occurrent and due to' and General Concept Inclusions (GCI). This has resulted in the need to reconsider the modeling of 'Co-occurrent and due to' and update the Editorial Guide for this area.

The Editorial Guide and all concepts that are currently modeled as 'Co-occurrent and due to' will be updated over future release cycles.

2.6. Convergent Medical Terminology (CMT)

New CMT concepts: 700

Focus areas include:

- Acquired disorder
- Thrombophlebitis
- Amputation stump finding/disorder
- Injury
- Seropositive rheumatoid arthritis
- Cerebrovascular accident
- Neoplasm

2.7. Procedure

New concepts for procedure hierarchy: 308

2.7.1. Revise Descriptions for Pacemaker Procedures

Concepts which refer to a cardiac pacemaker but do not include "cardiac" in the FSN have been updated to include "cardiac pacemaker."

Where the content was ambiguous as to the location of the pacemaker, it was inactivated and replaced. Work on this area of content continues.

2.7.2. Update Descriptions for Subtypes of 418272005|Computed tomography angiography with contrast (procedure)

Update to the descriptions for CT arteriography and CT venography concepts in the procedure hierarchy to align with the editorial guide for [Computed Tomography - CT](#).

2.7.3. Inactivation of Subtypes of 77477000 |Computed tomography (procedure)

- 303678006 |Computed tomography of regions (procedure)|
- 303679003 |Computed tomography of systems (procedure)|

Both of the above concepts have been inactivated with reason 'ambiguous' and 'Possibly equivalent to' 77477000 |Computed tomography (procedure)|.

2.7.4. SDoH - Social Determinants of Health Procedure

One new concept added for education procedure.

2.7.5. Nutrition

Added 24 diet regime/therapy concepts.

Remodeled 120 diet regime/therapy concepts.

2.7.6. Revision of Teletherapy and Teleradiotherapy Procedures

60 concepts which included "teletherapy" or "teleradiotherapy" in the FSN were updated to include "external beam radiation therapy."

7 concepts which included "external beam" in the FSN were updated to include "external beam radiation therapy" in the FSN.

49569001 |Consultation in teletherapy (procedure)| was inactivated and replaced with a new concept: 1144767008 |Consultation in external beam radiation therapy (procedure)|.

2.7.7. Update to 271422003 |Fit denture (procedure)| Subhierarchy

Concepts in the 271422003 |Fit denture (procedure)| subhierarchy have been remodeled with the finding site of 28035005 |Tooth, gum, and/or supporting structure (body structure)| or subtype.

Ambiguous concepts have been inactivated and replaced. For example 6502003 |Complete lower denture (procedure)| has been replaced by 1144276002 |Fitting of complete lower denture (procedure)|.

Changes have been made to approximately 25 concepts, including approximately 15 inactivations.

2.7.8. Inactivation of 68972003 |Insertion of therapeutic device (procedure)

Therapeutic role is out of scope for devices so this and related content has been inactivated.

- 45290003 |Closed insertion of therapeutic device (procedure)|
- 20554002 |Open insertion of therapeutic device (procedure)|
- 25101005 |Removal of therapeutic device (procedure)|
- 19798005 |Removal of therapeutic device from neck (procedure)|
- 22852002 |Therapeutic implant, device (physical object)|

2.8. Collaboration/Harmonization Agreements

2.8.1. Orphanet

Working in collaboration with Orphanet (<http://www.orpha.net/consor/cgi-bin/index.php>), creation of new concepts for the original set of prioritized rare diseases has been completed. All of the concepts added for the Orphanet project have been mapped to ICD-10.

The alpha release was published on schedule please see [April 2020 SNOMED CT Orphanet Simple Map package ALPHA release available](#) (*Please note, you may have to register for Confluence user account in order to access this link*).

The Production release of the SNOMED CT to Orphanet Simple Map will be published in October 2021 and will be based on the July 2021 International release of SNOMED CT.

2.8.2. ICD-11 Update

A total of 433 new concepts were added for the July 2021 release.

2.8.3. Global Medical Device Nomenclature Agency (GMDNA)

57 new physical object device concepts were added for the SNOMED CT - GMDN map for the July 2021 release.

245 concepts have been removed from the scope of the map due to modifications to descriptions or obsolete GMDN codes.

2.8.4. Inactivation and Replacement of Neoplastic Morphology Concepts Containing ICD-O-3 Classification Terminology

The WHO ICD-O version 3 morphology code listing is used for recording the histological cell type and behavior of neoplasms (mainly by cancer registries). ICD-O-3 classification terminology of 'NOS' (not otherwise specified) has been historically included in SNOMED CT neoplastic morphologic abnormalities, but this wording is no longer acceptable in SNOMED CT as per Editorial Guidance, and is not meaningful outside of the 'closed' ICD-O-3 classification context.

In the current 400177003 [Neoplasm and/or hamartoma (morphologic abnormality)] sub-hierarchy there are approximately 75 neoplastic morphology concepts containing the terminology "no International Classification of Diseases for Oncology subtype (morphologic abnormality)" and/or the description terminology "no ICD-O subtype" and they are utilized in the modeling of about 460 disorders in the 55342001 [Neoplastic disease (disorder)] hierarchy.

An ongoing project will inactivate concepts and descriptions termed "no International Classification of Diseases for Oncology subtype (morphologic abnormality)" and "no ICD-O subtype" with reason Outdated (pending the development of a specific inactivation reason for classification schema entities) and they will be replaced with either a new neoplasm morphology concept or pointed to an existing replacement morphology concept and at the same time their related disorders are being remodeled. This work is being carried out with expert input when required from the pathologists in the Cancer Synoptic Reporting Clinical Project Group. For example: 79074005 [Odontoma, no International Classification of Diseases for Oncology subtype (morphologic abnormality)] has been inactivated and replaced with new concept 1156647001 [Benign odontoma (morphologic abnormality)]. The project also involves identifying non-synonymous descriptions on these morphology concepts originating from ICD-O-3 and also similar synonyms on some disorders, and inactivating these synonyms and recreating as new concepts where appropriate.

For the July 2021 release approximately half of these concepts have been inactivated, comprising 38 morphological abnormality concepts termed "no International Classification of Diseases for Oncology subtype."

In some cases the work has overlapped with the next planned larger phase of the project which will be addressing those groupers containing the word "- category" and 6 of these groupers have been inactivated e.g. 409703003 [Adrenal cortical adenoma - category (morphologic abnormality)].

2.8.5. ICNP - International Classification for Nursing Practice

Approximately 250 new concepts have been added to support the SNOMED CT to International Classification for Nursing Practice equivalence product.

2.8.6. Cancer Synoptic Reporting

Over 300 concepts representing cancer synoptic reporting content were added or updated in the areas of histologic type, histologic grade, invasion and lymph nodes. This content primarily encompasses observable entity concepts and also includes supporting concepts from other hierarchies, including properties, techniques, staging scales and body structures.

Cancer synoptic reports are used by many member countries to record pathology examination of cancer specimens including the College of American Pathologists (US and Canada), Royal College of Pathology (UK), Royal College of Pathology Australasia (Australia, New Zealand), PALGA (The Netherlands), Swedish Society of Pathology, and others.

For more information about this project, please see [Cancer Synoptic Reporting Clinical Project Group](#) (*Please note, you may have to register for Confluence user account in order to access this link*).

2.9. Event

New concepts added: 6

2.10. Qualifier Value

New concepts added: 91

2.10.1. Technique

2 new technique concepts were added to the Qualifier value hierarchy with a use case of defining COVID-19 tests.

2.11. Social context

New concepts added: 3

2.12. Situation with explicit context

New concepts added: 92

2.13. Physical object

New concepts added: 317

2.13.1. Physical Object Concept Inactivations

Physical object concepts that are described as a kit or set have been inactivated with reason 'nonconformance to editorial policy' without a replacement concept. Exceptions are noted in the editorial guidelines for the Physical object hierarchy.

- Inactivation of approximately 600 physical object concepts that refer to a kit or set.
- Inactivation of approximately 1200 physical object concepts that include use frequency (e.g., "single use catheter").
- Inactivation of approximately 600 physical object concepts that include a size or dimension (e.g., "30 cm catheter").

2.13.2. New Physical Object Attributes

New attribute types added for:

- Has absorbability
- Has surface texture
- Is sterile
- Has coating material

Existing attribute types for 'Has surface characteristic' and 'Has device characteristic' have been inactivated.

Further details are available in the briefing note posted here [Devices Project](#) (*Please note, you may have to register for Confluence user account in order to access this link*).

2.14. Specimen

New concepts added: 10

2.15. Observable Entity

New concepts added: 377

2.15.1. Revision of Height Observables

The body height concepts in the observable entity hierarchy have been remodeled:

- Added a new concept 1153637007 |Body height (observable entity)| which is the supertype for all the body height concepts (1149101003 |Recumbent body height (observable entity)|, 248333004 |Standing height (observable entity)|, and 276353004 |Crown heel length (observable entity)|). This new concept includes a text definition for clarity.
- Added a new concept 1149101003 |Recumbent body height (observable entity)| which includes descriptions of "Crown heel length" and "Supine length."
- Inactivated the following concepts: 248334005 |Length of body (observable entity)|, 276351002 |Infant length (observable entity)|, 276353004 |Crown heel length (observable entity)|, 422769007 |Method for measuring height (observable entity)|.

2.15.2. New Content for Parameter Observables

New content additions to represent parameter observables:

- 1156597009 |Parameter (observable entity)| with text definition "A parameter is an entity whose value is determined by decision of an agent as opposed being observed in reality. Examples of parameters are goals or targets, equipment settings, and treatment parameters."
- This is the supertype of 1055210001 |Target parameter (observable entity)| as well as new concepts 1156601009 |Treatment parameter (observable entity)| and 1156600005 |Device setting parameter (observable entity)|.

Work in this area is ongoing and additional changes will be made.

2.15.3. Nutrition Observables

Added 115 new nutrition observable entity concepts.

2.15.4. Review and Update of Mental Health Function and State Observables

A review and update of mental health function and state observables has been undertaken by the Mental and Behavioral Health Clinical Reference Group in preparation for work to define mental health clinical findings and disorders. The resulting improvement in clinical findings will be the correct subsumption of concepts enabling improved searching/selection of content and analysis of patient groups.

For example: 413384008 |Ability to perform cognitive activity (observable entity)| assigned the additional parent of 311465003 |Cognitive functions (observable entity)| so clinical finding concepts using this attribute value in modeling would usefully and correctly classify as subtypes of 373930000 |Cognitive function finding (finding)| or one of its subtypes.

2.16. Organism

New concepts added: 128

2.16.1. Inactivation of Breed Content

More than 3000 concepts in the organism hierarchy related to various breeds and were inactivated from the International release and moved to the veterinary extension.

Based on the editorial guidelines, breeds are restricted to the veterinary domain.

2.17. Pharmaceutical/Biological Product

Drug model project

For further details on the planned changes in this area, please refer to the [Drugs Project](#)

Please note, you may have to register for Confluence user account in order to access this project and the relevant link.

New concepts added: 644

2.17.1. Precise Active Ingredient/Basis of Strength Substance Reconciliation of Clinical Drugs

A review has been initiated of instances where the Basis of strength substance (BoSS) and Precise active ingredient (PAI) combination differs for the same dose form (e.g. for a conventional release oral tablet, we would expect the BoSS + PAI combination would be the same for all existing concepts).

As a result, approximately 120 clinical drug concepts have been inactivated and replaced by existing content or new concepts. Note: This review will span multiple releases.

2.17.2. New Vaccine Attributes

The SNOMED CT Editorial Advisory Group (EAG) has recommended replacement of the existing 'Has product characteristic' and 'Has ingredient characteristic' attributes used to model vaccine products in the Medicinal product hierarchy with more explicit attributes. For the July 2021 International edition of SNOMED CT:

- Added new attribute 1149367008 |Has target population (attribute)| and transition existing instances of 860781008 |Has product characteristic (attribute)| to the new attribute.
- Added new attribute 1149366004 |Has ingredient qualitative strength (attribute)| and transition existing instances of 860779006 |Has ingredient characteristic (attribute)| to the new attribute.

The existing attributes 860781008 |Has product characteristic (attribute)| and 860779006 |Has ingredient characteristic (attribute)| will no longer be used for modeling in the International Release. Inactivation of these attributes will be discussed with the EAG. Users and implementers are encouraged not to use these attributes and to request addition of specific attributes to support modeling in national extensions moving forward.

2.17.3. Editorial Guides Available via SNOMED CT Document Library

The following editorial guides are now available:

- SNOMED CT Editorial Guide - Pharmaceutical Dose Form
- SNOMED CT Editorial Guide - Pharmaceutical and Biologic Product (includes the Medicinal Product hierarchy)

Access via the SNOMED CT Document Library <https://confluence.ihtsdotools.org/display/DOCEG>

2.18. Veterinary Extension

3018 concepts were moved to the Veterinary Extension.

This number includes more than 3000 concepts in the organism hierarchy as noted above in Section 2.16.1.

2.19. Metadata concept

New concepts added: 27

2.20. Substance

Release plans, Substance hierarchy

For further details on the planned changes in this area, please refer to [Substance Project](#)

Please note, you may have to register for Confluence user account in order to access this project and the relevant links above.

New concepts added: 104

2.20.1. Nutrition Substance

4 new concepts added.

2.21. Internal Quality Improvement

2.21.1. Replacement of the Stated Relationship files with the new OWL Axiom refset files

A set of documentation has been developed to support the Logic Profile Enhancements. (*Please note, you may have to register for Confluence user account in order to access the links below.*)

- [SNOMED DL Profile Enhancements](#)
- [SNOMED CT Logic Profile Specification](#)
- [SNOMED CT OWL Guide \(OWL Refsets specification\)](#)
- Snomed OWL Toolkit - <https://github.com/IHTSDO/snomed-owl-toolkit>
- Classifying SNOMED CT using the Snomed OWL Toolkit - <https://youtu.be/-91egY9mJqA>
- Creating an OWL file containing SNOMED CT - https://youtu.be/sfFbMMioA_4

For any questions, please contact SNOMED International at support@snomed.org with "OWL Axiom refset files implementation question" in the subject line.

2.21.2. Machine Readable Concept Model (MRCM) Changes

The MRCM includes new rows to indicate that the new attribute types are expected to take a concrete domain - specifically numbers - as target values.

MRCM for new attributes:

- 1003703000 |Process extends to (attribute)|
- 1148965004 |Is sterile (attribute)|
- 1148967007 |Has coating material (attribute)|
- 1148968002 |Has surface texture (attribute)|
- 1148969005 |Has absorbability (attribute)|
- 1149367008 |Has target population (attribute)|
- 1149366004 |Has ingredient qualitative strength (attribute)|

Extend the range of:

- 363713009 |Has interpretation (attribute)|

MRCM remove:

- 840562008 |Has device characteristic (attribute)|
- 246196007 |Has surface characteristic (attribute)|

Further details can be found here [MRCM changes in the July 2021 release](#) (Please note, you may have to register for Confluence user account in order to access this project and the relevant links above).

2.21.3. Concrete Domains and Numeric Representation

The July 2021 International Edition is the first release after the transition to Concrete Domains.

- The RF2 package is impacted as follows:
 - existing drug concept strength and count relationships inactivated +
 - existing strength and count attribute types inactivated, replaced with new ones using the same FSNs.
 - Inferred Relationship file changes:
- Stated OWL Axiom file changes:
 - existing drug concept axioms updated to use concrete values +
 - existing strength and count attribute types inactivated, replaced with new ones using the same FSNs.
- Additional Features in International Release
 - new separate concrete value relationship file expresses these same attributes using numeric values
 - new attributes used, although they will have the same FSNs as the current attributes
 - MRCM includes new rows to indicate that the new attribute types are expected to take a concrete domain - specifically numbers - as target values.

Please contact SNOMED International with questions at support@snomed.org with "Concrete Domains transition question" in the subject line.

2.22. SNOMED CT derived products

2.22.1. ICD-10 map

The SNOMED CT to the International Statistical Classification of Diseases and Related Health Problems, Tenth Revision (© World Health Organization 1994) 2016 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 SNOMED International member countries and WHO Collaborating Centers.

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_20200731.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)].

2.22.2. 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 2016 release.

2.22.3. Mapped content for July 2021

The map provided for the July 2021 release has been updated, and now represents a complete map from SNOMED CT International release to ICD-10 2016 version.

- 2192 newly authored concepts have been added and mapped (2096 Clinical findings, 90 Situation with explicit context, and 6 Event)
- 3 new codes for special purposes have been added to the terminology browser in accordance with WHO guidelines:
 - U08 Personal history of COVID-19
 - U09 Post COVID-19 condition
 - U10 Multisystem inflammatory syndrome associated with COVID-19
- The SNOMED to ICD-O (morphology) map has had a total of 80 concepts added as a result of the ICD-O 3.2 review or added due to CRS requests.

We would welcome feedback on any issues that users of the map may detect when using the map. Issues should be submitted via mapping@snomed.org

2.22.4. Technical Guide Exemplars

The Technical Guide Exemplars document has now been moved from the International Edition release package to a Confluence page. This page can be found as part of the ICD-10 Mapping Technical Guide (see Appendix B), which is hosted here: <http://snomed.org/icd10map>

2.22.5. SNOMED CT to OWL conversion and classification

The repository containing the toolkit enabling simple SNOMED CT to OWL conversion and classification can be found here, including documentation on its use: <https://github.com/IHTSDO/snomed-owl-toolkit>

Please contact SNOMED International at support@snomed.org if you would like to provide any feedback on ways to extend and improve the new toolkit.

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 current SNOMED CT International edition, the following Known Issues were identified, and agreed to be resolved in future editing cycles:

Key	Summary	Description
ISRS-1023	Primitive Stated parents	<p>Australia have reported the following potential issue with the modelling, which requires valid source concepts:</p> <p><i>"These concepts fail. I think the problem is their stated parent is primitive... and not a subtype of [433590000 Administration of substance via specific route (procedure)]([http://snomed.info/id/433590000])"</i></p> <ul style="list-style-type: none">• 427633002 Intravenous injection of vaccine (procedure)• 787016008 Administration of vaccine product containing only Influenza virus antigen in nasal dose form (procedure)• 871728006 Administration of vaccine product containing only live attenuated Salmonella enterica subspecies enterica serovar Typhi antigen in oral dose form (procedure)• 871899004 Administration of vaccine product containing only live attenuated Human alphaherpesvirus 3 antigen via subcutaneous route (procedure)• 572391000119109 Administration of vaccine product containing only Rabies lyssavirus antigen via intramuscular route (procedure)• 572431000119104 Administration of vaccine product containing only Salmonella enterica subspecies enterica serovar Typhi capsular polysaccharide Vi antigen via intramuscular route (procedure)• 626061000119109 Administration of pentavalent vaccine product containing only live attenuated Rotavirus antigen via oral route (procedure)• 16292691000119104 Administration of vaccine product containing only inactivated whole Japanese encephalitis virus antigen (procedure)

- 16292731000119106 Administration of vaccine product containing only inactivated whole Japanese encephalitis virus antigen adsorbed via intramuscular route (procedure)

KNOWN ISSUE: The SNOMED CT Content Team have confirmed that the reason for this being reported as an issue is that all of these concepts use a DIRECT SUBSTANCE of <<Vaccine product as opposed to substance. This is technically not an error, however, as it is the "Administration of **product** via specific route". As the parent in question is a non-clinical grouper, there is no concern about the loss of this parent. Administration by a specific route can be easily handled using ECL. However, further investigation will be conducted into the classification of these and other concepts, with the aim to resolve any issues in future International Edition releases. These will therefore be temporarily whitelisted until they are resolved.

ISRS-1038 RVF Assertion failure: cc9c5340-84f0-11e1-b0c4-0800200c9a66

testType: "SQL",
assertionUuid: "cc9c5340-84f0-11e1-b0c4-0800200c9a66",
assertionText: "Terms that contain en-gb specific words are in the en-gb language refset.",
queryInMilliseconds: 4239,
failureCount: 11,
firstNInstances: [

- { conceptId: "1149100002", detail: "DESCRIPTION: id=4554148011: Synonym is preferred in the en-gb language refset but refers to a word that has en-us spelling: leukemia" }
- { conceptId: "1144752009", detail: "DESCRIPTION: id=4543121010: Synonym is preferred in the en-gb language refset but refers to a word that has en-us spelling: organization" }
- { conceptId: "1144665009", detail: "DESCRIPTION: id=4543129012: Synonym is preferred in the en-gb language refset but refers to a word that has en-us spelling: organization" }
- { conceptId: "396659000", detail: "DESCRIPTION: id=4550820019: Synonym is preferred in the en-gb language refset but refers to a word that has en-us spelling: organization" }
- { conceptId: "1149429006", detail: "DESCRIPTION: id=4571932013: Synonym is preferred in the en-gb language refset but refers to a word that has en-us spelling: organization" }
- { conceptId: "1149430001", detail: "DESCRIPTION: id=4571937019: Synonym is preferred in the en-gb language refset but refers to a word that has en-us spelling: organization" }
- { conceptId: "1149434005", detail: "DESCRIPTION: id=4579394016: Synonym is preferred in the en-gb language refset but refers to a word that has en-us spelling: organization" }
- { conceptId: "1013761000004104", detail: "DESCRIPTION: id=4579413013: Synonym is preferred in the en-gb language refset but refers to a word that has en-us spelling: organization" }
- { conceptId: "1149429006", detail: "DESCRIPTION: id=4571932013: Synonym is preferred in the en-gb language refset but refers to a word that has en-us spelling: tumors" }
- { conceptId: "1149430001", detail: "DESCRIPTION: id=4571937019: Synonym is preferred in the en-gb language refset but refers to a word that has en-us spelling: tumors" }
- { conceptId: "1149434005", detail: "DESCRIPTION: id=4579394016: Synonym is preferred in the en-gb language refset but refers to a word that has en-us spelling: tumors" }

KNOWN ISSUE: The SNOMED International Content Team have confirmed that these are all proper names, and can therefore be permanently whitelisted. No further action is required.

ISRS-1063 Concepts inactivated with no replacements suggested

There were 1006 concepts inactivated in the July 2021 International Edition editing cycle, that had no replacements suggested. This can cause additional work for the Extension users which are using these concepts in their relationships.

KNOWN ISSUE: The full set of inactive concepts and inactivation reasons were reviewed by the SNOMED International content team. The conclusion was that the majority of the concepts are physical object concepts relating to single use, kits, sets and these concepts do not have a replacement - the inactivation reason is therefore correct in these cases.

For a small number of the concepts, however, the inactivation reason was deemed to be insufficient, and therefore updates will be made for the the next International Edition release for the following records:

- 371499003 - reactivated
- 399548004 - outdated
- 399618007 - erroneous
- 244577002 - erroneous
- 244655006 - erroneous
- 416631005 - ambiguous
- 699934001 - ambiguous
- 732166009 - ambiguous
- 42656008 - outdated
- 609344008 - erroneous
- 609346005 - erroneous
- 609347001 - outdated
- 16224631000119103 - outdated
- 130995001 - outdated
- 130996000 - outdated
- 250349006 - outdated
- 194282005 - outdated
- 236623005 - reactivated
- 420656008 - outdated

ISRS-1066	Module id for property chain axioms	<p>The module id for property chain axioms should be the same as module id of property, which should be 900000000000012004 [SNOMED CT model component module (core metadata concept)].</p> <p>The 'core' module id has been assigned to the Property Chain for 246093002 [Component (attribute), as per the following entry in the OWL expression refset:</p> <ul style="list-style-type: none"> b8074e53-7157-4f2c-826f-c9019afb88 20210731 1 9000000000000207008 733073007 246093002 SubObjectPropertyOf (ObjectPropertyChain(:246093002 :738774007) :246093002) <p>KNOWN ISSUE: As this has been confirmed by the SNOMED International Content Team to not be a clinical risk, and the modification of property chains can only be fixed from the backend by technical team, the decision has been made to carry this issue over, to be fixed in future editing cycles.</p>
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4 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. 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 current Snomed CT International edition can be found here:

Key	Summary	Description	Resolved
ISRS-922	DROOLS assertion failure: "An axiom marked as defined must have one or more defining relationship, i. e., not is-a type relationships."	<p>assertionText: "An axiom marked as defined must have one or more defining relationship, i.e., not is-a type relationships.", failureCount: 824, firstNInstances: [</p> <ul style="list-style-type: none"> {conceptId: "403702001", detail: "An axiom marked as defined must have one or more defining relationship, i.e., not is-a type relationships."} {conceptId: "272634000", detail: "An axiom marked as defined must have one or more defining relationship, i.e., not is-a type relationships."} {conceptId: "275786006", detail: "An axiom marked as defined must have one or more defining relationship, i.e., not is-a type relationships."} <p>RESOLUTION: All issues resolved in time for the July 2021 International Edition release.</p>	
ISRS-945	DROOLS assertion failure: "An axiom marked as defined must have one or more defining relationship, i. e., not is-a type relationships."	<p>assertionText: "An axiom marked as defined must have one or more defining relationship, i.e., not is-a type relationships.", failureCount: 824, Ticket logged with QI project will be resolved for July 2021 release.</p> <p>RESOLUTION: All issues resolved in time for the July 2021 International Edition release.</p>	
ISRS-947	OCCURRENCE (246454002) - only modelled with valid destination concepts	<p>Australian NRC reported the following: OCCURRENCE(246454002) - only modelled with valid destination concepts 13169917021 Traumatic aniridia (disorder):Occurrence=Periods of life Technically this is legal MRCM, and Australia have updated their validation so it passes now. There may still be an issue with the content, in that the concept may not need to have this attribute, as it's a "nothing property". It's also the only instance of "Occurrence=Periods of life" in the whole of the terminology, which may be indicative of a problem. All other "Occurrences" use subtypes of "Periods of life" – which is what the original test was setup to verify. It would make sense on a grouper, but not this concept.</p> <p>RESOLUTION: Relationship inactivated in time for the July 2021 International Edition release.</p>	
ISRS-948	MRCM validation failures	<p>Some additional MRCM failures have been found by running the MRCM validation against the inferred view as well as the stated view. https://docs.google.com/spreadsheets/d/1e71VzDGWKq_c-mfpbpQGmNutmQyvPOAPClwvd_wyzXl/edit#gid=0</p> <p>RESOLUTION: The content team have reviewed all the issues identified, and come to the following conclusion: The Rule is correct, but the failures have the correct value, and so the report is picking up false positives. No action required.</p>	2021-Jun-11

ISRS-1036	RVF Assertion failure: bab42070-7f25-11e1-b0c4-0800200c9a66	<p>testType: "SQL", assertionUuid: "bab42070-7f25-11e1-b0c4-0800200c9a66", assertionText: "There is one and only one CTV3 simple map refset member per concept.", queryInMilliseconds: 41964, failureCount: 2785, firstNInstances: [</p> <ul style="list-style-type: none"> {conceptId: "6024204", detail: "CONCEPT: id=6024204: Concept does not have an associated CTV3 refset member."} {conceptId: "773561008", detail: "CONCEPT: id=773561008: Concept does not have an associated CTV3 refset member."} {conceptId: "773563006", detail: "CONCEPT: id=773563006: Concept does not have an associated CTV3 refset member."} <p>RESOLUTION: All issues resolved in time for the July 2021 International Edition release.</p>	
ISRS-1037	RVF Assertion failure: c82246b1-a137-40c5-8653-554c9ce82c6b	<p>assertionUuid: "c82246b1-a137-40c5-8653-554c9ce82c6b", assertionText: "Active preferred terms for active concepts are unique in the same hierarchy", failureCount: 2, firstNInstances: [</p> <ul style="list-style-type: none"> {conceptId: "420559008", detail: "Preferred term=L is duplicated in hierarchy (qualifier value)"} conceptId: "258770004", detail: "Preferred term=L is duplicated in hierarchy (qualifier value)"} <p>RESOLUTION: The SNOMED International Content team have investigated these potential duplicates (as part of the International Edition validation) and confirmed that they are all valid terms. These potential issues have therefore been permanently whitelisted (see ISRS-737), and can be safely ignored with no action currently required.</p>	2021-May-12
ISRS-1039	RVF Assertion failure: 1a4e40a9-cf14-4703-b206-9f2fbeb56c7f	<p>testType: "SQL", assertionUuid: "1a4e40a9-cf14-4703-b206-9f2fbeb56c7f", assertionText: "All active Refset records are valid.", failureCount: 3153, firstNInstances: [</p> <ul style="list-style-type: none"> {conceptId: "63786009", detail: "Reference component id:63786009 for refset id: 734138000 in association refset member must be valid."} {conceptId: "110532002", detail: "Reference component id:110532002 for refset id: 734138000 in association refset member must be valid."} {conceptId: "244113003", detail: "Reference component id:244113003 for refset id: 734138000 in association refset member must be valid."} <p>RESOLUTION: All issues resolved in time for the July 2021 International Edition release.</p>	
ISRS-1040	DROOLS Assertion failure: Active concepts must have at least one IS A relationship	<p>testType: "DROOL_RULES", assertionText: "Active concepts must have at least one IS A relationship.", failureCount: 1, firstNInstances: [</p> <ul style="list-style-type: none"> {conceptId: "138875005", conceptFsn: "SNOMED CT Concept (SNOMED RT+CTV3)", detail: "Active concepts must have at least one IS A relationship."} <p>RESOLUTION: SNOMED International Content Team confirmed that as this is the root concept (138875005 SNOMED CT Concept (SNOMED RT+CTV3)) it is the only exception to this rule, and will therefore never have an IS_A relationship. The rule now appears to be running correctly, and so no editing changes are required - this one concept just needs to be manually whitelisted in all future validation runs.</p>	2021-May-12
ISRS-1059	UATG feedback - Unknown ModuleID's in the Description Inactivation Indicator refset	<p>When the test import of the July 2021-07-31 Beta Release files was run an error occurred saying that there are four Description Inactivation Reference Set Members that reference an unknown 'moduleid'. The records had to be removed in order to import the Beta package into their UAT database:</p> <ul style="list-style-type: none"> aea46645-ca47-4709-8286-37691827e2da 20210731 1 1145237009 900000000000490003 1208224012 723277005 ead0b94a-45a9-4d9e-bf2b-f9a8ce8f5e11 20210731 1 1145237009 900000000000490003 1776499019 723277005 10057def-1a25-4929-8f0c-b6783494e638 20210731 1 1145237009 900000000000490003 170673014 723277005 3fed3f08-c599-419d-b820-6bd7db593e2f 20210731 1 1145237009 900000000000490003 1210846018 723277005 	

The 'moduleid' 1145237009 could not be found in the Beta package, in any of the Delta/Snapshot /Full files.

RESOLUTION: The AttributeValue records were confirmed to have invalid moduleID's. These records were therefore manually fixed in time for the July 2021 International Edition Production release, by amending the moduleID's to valid values.

ISRS-1060	UATG feedback - invalid SNOMED CT Concept ID	<p>During the test import, an incorrect SNOMED CT ID was discovered - with a partition ID of "2" - in one of the Concept file rows:</p> <ul style="list-style-type: none">6024204 Vaccine product containing only Influenza A virus A/Indonesia/05/2005 (H5N1)-like virus strain split virion hemagglutinin antigen (medicinal product) <p>RESOLUTION: Concept and related components replaced with valid SCTID 1162629006.</p>	
ISRS-1064	RVF Assertion failure: 5c6b6bc0-79b9-11e1-b0c4-0800200c9a66	<p>testCategory: "release-type-validation", testType: "SQL", assertionUuid: "5c6b6bc0-79b9-11e1-b0c4-0800200c9a66", assertionText: "All relationships inactivated in current release must have been active in the previous release.", failureCount: 2, firstNInstances: [</p> <ul style="list-style-type: none">{conceptId: "1149367008", detail: "Relationship: id=13763994028 is inactive but no active state found in previous release."}{conceptId: "1149366004", detail: "Relationship: id=13764011027 is inactive but no active state found in previous release."} <p>RESOLUTION: SNOMED International Content Team confirmed that the concepts were added as new for the July 2021 release with an effective time 20210731. However the related inferred relationships have been inactivated in the latest Vaccines work, and have effectively been created and inactivated within the same 20210731 release cycle (as they were never active in a previous release). They have confirmed that this is therefore an expected status and doesn't suggest any underlying issue with the content - no action is required.</p>	2021-Jun-21
ISRS-1065	Redundant Inferred Relationship records	<p>There are 96 potentially redundant inferred relationships in the BETA release of the July 2021 International Edition. The entire list is attached to the ticket, however here is an example:</p> <ul style="list-style-type: none">92945021 20210731 0 9000000000000207008 274183004 24257003 0 116680003 900000000000011006 90000000000004510022756593026 20210731 1 9000000000000207008 274183004 24257003 0 116680003 900000000000011006 9000000000000451002 <p>RESOLUTION: After investigation by the SNOMED International development team, it has been confirmed that there is no redundancy - it just looks like there is because of a historical issue where the classifier didn't reconcile older relationships when they were re-activated during authoring (due to modeling changes). Taking the above relationship as an example, every time throughout history that it's been inactivated, the classifier re-activates it with the alternate ID - so putting them in chronological order:</p> <ul style="list-style-type: none">92945021 20020131 1 9000000000000207008 274183004 24257003 0 116680003 900000000000011006 900000000000045100292945021 20020131 1 9000000000000207008 274183004 24257003 0 116680003 900000000000011006 900000000000045100292945021 20020731 0 9000000000000207008 274183004 24257003 0 116680003 900000000000011006 90000000000004510022756593026 20050131 1 9000000000000207008 274183004 24257003 0 116680003 900000000000011006 90000000000004510022756593026 20210131 0 9000000000000207008 274183004 24257003 0 116680003 900000000000011006 900000000000045100292945021 20210131 1 9000000000000207008 274183004 24257003 0 116680003 900000000000011006 900000000000045100292945021 20210731 0 9000000000000207008 274183004 24257003 0 116680003 900000000000011006 90000000000004510022756593026 20210731 1 9000000000000207008 274183004 24257003 0 116680003 900000000000011006 9000000000000451002 <p>So whilst this makes it look as if there's redundancy in this release cycle, it's actually just the latest switch in the ID's that has been occurring for years. When a relationship becomes inferred again the classification service finds any previously published relationship to make active. This churn will be further reduced by making the classification service favour inactive relationships that changed this cycle rather than picking any inactive relationship when making a relationship active again - a ticket has been raised to refine this: MAINT-1684</p> <p>In the meantime, there is no requirement to replace the relationships in this cycle for July 2021 because it should have no impact on implementers. The inferred relationships are correct and there are no born inactive rows as was originally suspected. Once the work is complete for MAINT-1684 even this small amount of churn will be reduced further for the following authoring cycles.</p>	2021-Jun-22

3.2.1. Technical updates

3.2.1.1. 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 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
- 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.

3.2.1.2. Configuration file in the RF2 package, containing Release Metadata

A new file has been included since the July 2020 International Edition, containing metadata about the Release package itself. This has been created in conjunction with feedback from the community, and as such initially contains the following fields:

- effectiveTime
- deltaFromDate
- deltaToDate
- languageRefset(s)
- humanReadableLanguageRefset(s)
- licenceStatement

The file is in .JSON format, to ensure that it is both machine-readable and human-readable, and is named "**release_package_information.json**".

The metadata will be extended and refined going forward, in order to ensure that it contains the most useful information possible. If you have any ideas about any other useful information to include, please send them to info@snomed.org, along with a business case explaining how the information would benefit stakeholders. Please be aware that this use case will then be assessed by SNOMED International, and the new metadata will only be included in the configuration file if the business case is strong enough.

3.2.1.3. Concrete Domains launch

Following on from the successful technical preview of the impending Concrete Domains changes, released in February 2021, SNOMED International are now implementing the changes in the July 2021 International Edition Production release. This contains drug concept strengths and counts expressed as concrete values in a new Relationships file. The RF2 Release package for July 2021 therefore incorporates the following changes:

- Inferred Relationship file changes:
 - All relationships for values of strength and count for medical products inactivated
 - All relationships for attributes of strength and count for medicinal products inactivated
 - [New relationships for new concept model data attributes of strength, count, product name, and supplier for medicinal products will be added](#)
- Stated OWL Axiom file changes:
 - Existing drug concept axioms updated to use concrete values
 - Existing strength and count attribute types will be inactivated, replaced with new ones using the same FSNs.
- New Inferred "Relationship Concrete Values" files:
 - New concrete values relationship files added to the RF2 package structure, containing all new relationships for values of strength and count for medical products:
 - [sct2_RelationshipConcreteValues_Delta_INT_20210731.txt](#)
 - [sct2_RelationshipConcreteValues_Full_INT_20210731.txt](#)
 - [sct2_RelationshipConcreteValues_Snapshot_INT_20210731.txt](#)
- MRCM file changes:
 - [MRCM includes new rows to indicate that the new attribute types are expected to take a concrete domain - specifically numbers - as target values.](#)

3.2.1.4. Advanced Notice of upcoming changes to the International Edition Release Schedule



ADVANCED NOTICE

Over the next few months, SNOMED International plans to move to a more frequent (monthly) release schedule for SNOMED CT International Edition.

To better understand the impact of the proposed model, we are asking Members to complete a survey, available [here](#). The survey will be available from 31st July to 12th September 2021, but please complete it as soon as possible so that we have time to respond to your feedback.

3.2.1.5. Early visibility of impending change in the January 2022 International edition

Please see the following page for details of all upcoming changes planned for January 2022 and beyond: [January 2022 Early Visibility Release Notice - Planned changes to upcoming SNOMED International Release packages](#)

3.2.1.6. Document links

All links provide information that is correct and current at the time of this Release. Updated versions may be available at a later date, but if so these will need to be requested from the relevant SNOMED International teams.

NOTE: To access any of the links in the pdf document, please visit the Release Notes @ <https://confluence.ihtsdotools.org/display/RMT/SNOMED+CT+July+2021+International+Edition+-+SNOMED+International+Release+notes>

Approvals

Final Version	Date	Approver	Comments
0.3	2021-06-04	Rory Davidson	Approved
0.3	2021-06-04	Monica Harry	Approved
1.0	2021-07-29	Kelly Kuru	Approved
1.0	2021-07-28	Rory Davidson	Approved
1.0	2021-07-28	Monica Harry	Approved

Draft Amendment History

Version	Date	Editor	Comments
0.01	20210505	Andrew Atkinson	First draft for review and comment
0.02	20210520	Maria Braithwaite	Initial content updates
0.03	20210525	Maria Braithwaite	Further content updates
0.04	20210603	Andrew Atkinson	Final refinements
1.0	20210728	Andrew Atkinson & Maria Braithwaite	Final Production changes