

UK Classification Maps in the NHS Digital SNOMED CT Browser

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SNOMED CT UK Edition and the ICD-10 and OPCS-4 Classifications

SNOMED CT, ICD, and OPCS-4 are nationally required standards that serve different but related and complementary purposes.

SNOMED CT is a structured clinical vocabulary designed to be used by clinicians within an Electronic Patient Record (EPR) at the point of patient care, to support the direct management of the patient. It provides detailed health information, with comprehensive coverage of all clinical specialities and professions including diagnoses, procedures, assessment tools, devices, and pharmaceutical products.

The ICD-10 and OPCS-4 classifications are used in the UK for the submission of aggregated diagnostic and interventional information to national database collections to support statistical analysis. The classifications are not designed to provide the granular detail or the broad coverage of SNOMED CT. For example, clinical coders input ICD-10/OPCS-4 codes into NHS Trust Patient Administration Systems (PAS), to provide a summary of consultant episodes of inpatient care.

Purpose of the maps

Classification maps can be incorporated into system software to provide a semi-automated link from clinical information recorded by the clinician in the EPR using SNOMED CT to ICD10 and OPCS-4 codes. Use of the maps requires expert knowledge of the rules, conventions and standards of the classification and application of the three dimensions of coding accuracy¹.

The maps in the NHS Digital Browser

The [UK browser](#) maps are provided for reference purposes and may be used to assist coders to identify an appropriate classification code for a diagnostic or procedural term, where no specific ICD-10 or OPCS-4 code or index trail exists.

It is not the intention that the browser is used by coders to input SNOMED CT concepts into the Trust coding system. SNOMED CT concepts are designed to be used by clinicians in an Electronic Patient Record. (Please see [SNOMED CT](#) and [Classification Maps](#) for more information. You may also find the [SNOMED CT Awareness for Clinical Coders](#) useful.)

Please note the dagger and asterisk symbols (D/* and A/*) are not displayed within the classification maps. The dagger and asterisk symbols are included in the release mapping tables allowing them to be automatically added as metadata within the coding software. Users of this browser will need to remember to add the dagger/asterisk where appropriate.

¹ National Clinical Coding Standards ICD-10 and OPCS-4 reference books

Using the browser maps

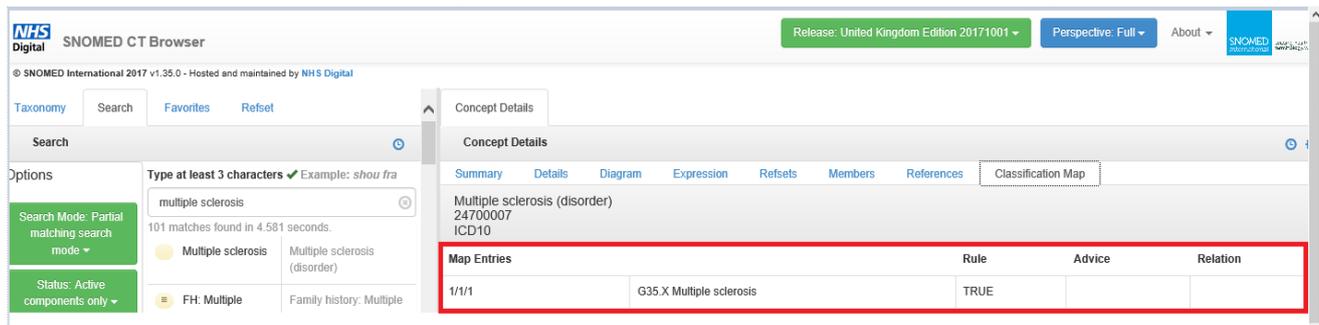
The classification maps can be viewed by selecting the Classification Map tab in the browser, after selecting a SNOMED CT concept:



The classification maps are one directional, providing a map from the SNOMED CT concept to the corresponding classification target code or codes. There are four different types of maps:

Map type 1

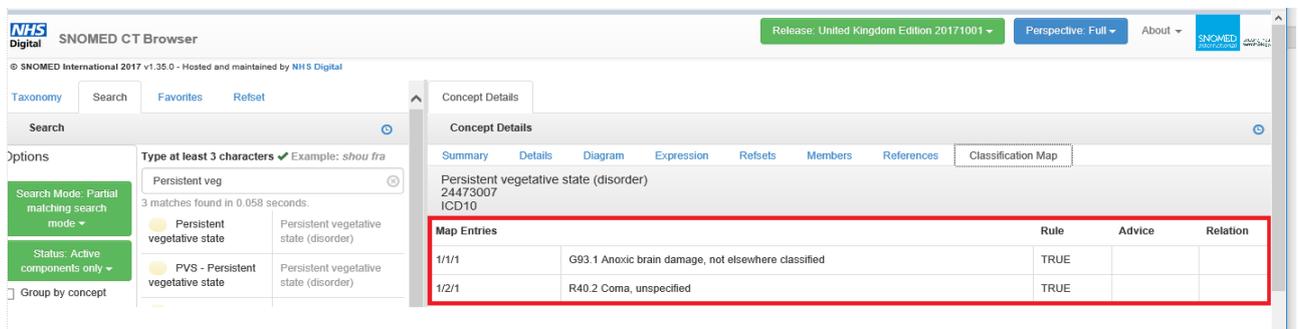
Links a single SNOMED CT concept to a single target classification code.



SNOMED CT concept **24700007 Multiple Sclerosis** maps to the single ICD-10 default target code **G35.X Multiple sclerosis**. A default target code is always marked as 'TRUE' in the rule column.

Map type 2

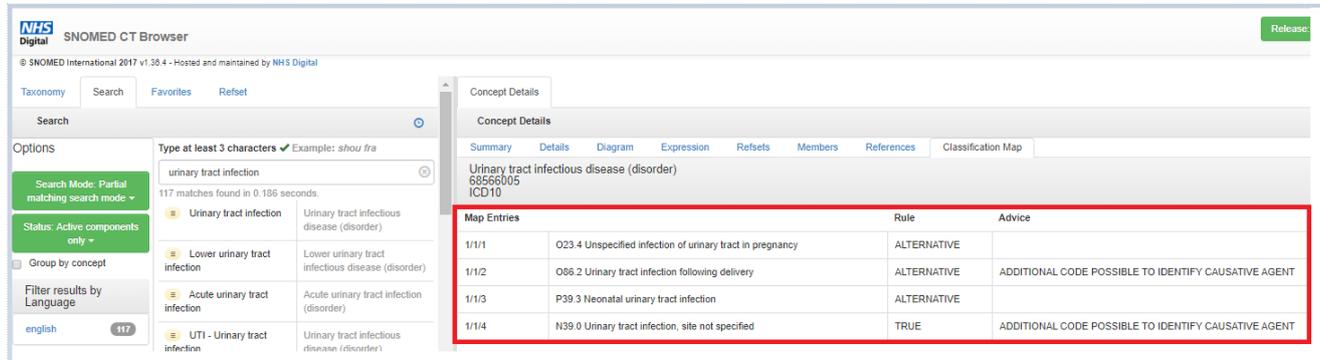
Links a single SNOMED CT concept to a combination of target classification codes. Collectively, these codes represent the full clinical meaning of the concept:



The SNOMED CT concept **24473007 Persistent vegetative state** maps to two ICD-10 default target codes. To comply with national coding standards (**DCS.VI.5 Persistent vegetative state**), **G93.1 Anoxic brain damage** and **R40.2 Coma, unspecified** are both required to be assigned, in the sequence shown.

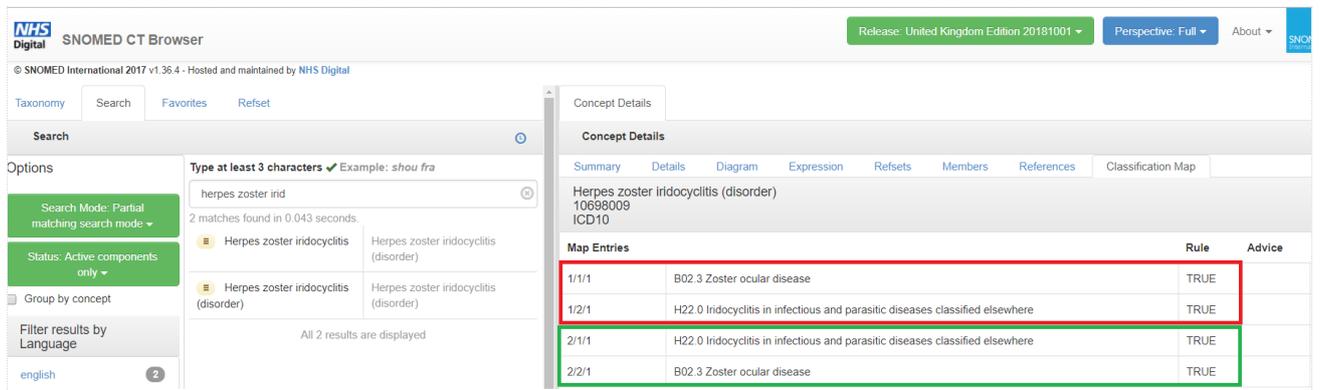
Map type 3

Links a single SNOMED CT concept to a choice of target codes (marked as 'ALTERNATIVE' in the Rule column in the browser). This is to allow final selection, informed by clinical detail found within the medical record, and application of classification expertise by the clinical coder:



Map type 4

Links a single SNOMED CT concept to a choice of classifications maps. Each choice of map may contain a single, combination or choice of target codes. Again, final selection will be informed by clinical detail within the medical record and application of classification expertise by the coder.



In this dagger and asterisk combination example, two maps are offered. The default map in Map Block 1 (outlined in red), sequences the dagger code **B02.3 Zoster ocular disease** before the asterisk code **H22.0 Iridocyclitis in infectious and parasitic diseases**. Map Block 2 (outlined in green), reverses the sequencing to allow the disease manifestation (**H22.0**) to be sequenced in a primary position should this be the main condition treated or investigated during the [Consultant Episode](#). (For further information follow the footer link provided on page 3, which will direct you to where you can download the National Clinical Coding Standards OPCS-4 Reference Book.)

Map Blocks, Map Groups and Map Priorities

The Browser maps are presented in a similar way to how they appear in the mapping tables, which are designed to be read by system software.

Each classification map will contain at least one map block, one map group and one map priority. Map Blocks, Map Group and Map Priority are numbered sequentially, starting at 1.

A **Map Block** signifies a code or string of codes that represent the SNOMED CT concept's fully specified name (FSN). Multiple Map Blocks will be included within the map if it is necessary to represent the concept in multiple ways (e.g. sequencing of dagger and asterisk codes).

A **Map Group** signifies each individual target code within a Map Block. Each individual code within a Map Block will be allocated to its own Map Group *unless* it is an Alternative code. Where multiple codes are required, the Map Groups builds in any required classification sequencing rules.

*A **Map Priority** signifies the priority of the code within the group based on the order in which the codes are presented within mapping tables to enable the information to be read by computer software systems. In a complex map, where alternative targets are provided within a block or a group, an ALTERNATIVE target code is always listed before the TRUE target code.

Each Map Block, Map Group and Map Priority is identified in the 'Map Entries' column in the browser. The first digit in the map entry indicates the Map Block, the second digit the Map Group and the third digit the Map Priority.

Note: The terms 'TRUE; and 'ALTERNATIVE' do not appear in the mapping tables. (For information on how default and alternative maps are presented in the mapping tables see section 3.6 *UK Map Reference Set* in the 'SNOMED CT to ICD-10 and OPCS-4 Map Table Technical Specification and Implementation Guidance (UK Edition)' document.)

Example 1 – Persistent vegetative state:

Concept Details			
Concept Details			
Summary	Details	Diagram	Expression
Persistent vegetative state (disorder) 24473007 ICD10			
Map Entries		Rule	Advice
1/1/1	G93.1 Anoxic brain damage, not elsewhere classified	TRUE	
1/2/1	R40.2 Coma, unspecified	TRUE	

As shown above the map for 'Persistent vegetative state' contains one Map Block **1/1/1** and **1/2/1**. Within the block there are two Map Groups **1/1/1** and **1/2/1** which enforces the sequencing of the target classifications codes. In this instance **G93.1** is sequenced before **R40.2** to comply with **DCS.VI.5**. As both target codes **G93.1** and **R40.2** are required to represent the meaning of the concept they are both default target codes (**TRUE**) and both have a Map Priority of one – **1/1/1** and **1/2/1**.

Example 2 – Urinary tract infectious disease:

Concept Details		
Urinary tract infectious disease (disorder) 68566005 ICD10		
Summary Details Diagram Expression Refsets Members References Classifications		
Map Entries		Rule
1/1/1	O23.4 Unspecified infection of urinary tract in pregnancy	ALTERNATIVE
1/1/2	O86.2 Urinary tract infection following delivery	ALTERNATIVE
1/1/3	P39.3 Neonatal urinary tract infection	ALTERNATIVE
1/1/4	N39.0 Urinary tract infection, site not specified	TRUE

The classification map for **SNOMED CT concept 68566005 Urinary tract infectious disease** contains one Map Block (indicated as follows in the Map Entries field - **1/1/1**, **1/1/2**, **1/1/3** and **1/1/4**).

The single Map Block contains the default target code **N39.0 (TRUE)**, along with codes **O23.4 (ALTERNATIVE)**, **O86.2 (ALTERNATIVE)** and **P39.3 (ALTERNATIVE)**, to allow for additional information within the medical record that would influence final code selection.

As only one classification code is required to represent the meaning of the concept, Map Block 1 contains one Map Group (**1/1/1**, **1/1/2**, **1/1/3** and **1/1/4**).

All Map Group “Alternatives” are presented in the Map before the default target code (TRUE). For instance, in this example ‘Alternative’ target code **O23.4** has a Map Priority of one (**1/1/1**) and **O86.2** has a Map Priority of two (**1/1/2**) etc. (Please see information above*).

Example 3 – Herpes zoster iridocyclitis:

The classification map for **10698009 Herpes zoster iridocyclitis** contains two Map Blocks.

a) Map Block 1 - (1/1/1 and 1/2/1)

Concept Details		
Concept Details		
Summary	Details	Diagram
Expression	Refsets	Members
References	Classification Map	
Herpes zoster iridocyclitis (disorder) 10698009 ICD10		
Map Entries		Rule
1/1/1	B02.3 Zoster ocular disease	TRUE
1/2/1	H22.0 Iridocyclitis in infectious and parasitic diseases classified elsewhere	TRUE
2/1/1	H22.0 Iridocyclitis in infectious and parasitic diseases classified elsewhere	TRUE
2/2/1	B02.3 Zoster ocular disease	TRUE

As two classification codes are required to represent the meaning of the concept, Map Block 1 contains two Map Groups and the map entry 1/**1**/1 signifies that **B02.3** will be sequenced before **H22.0** (1/**2**/1). As both target codes **B02.3** and **H22.0** are required to represent the meaning of the concept they are both default target codes (**TRUE**) and both have a Map Priority of one – 1/1/**1** and 1/2/**1**.

b) Map Block 2 - (2/1/1 and 2/2/1)

Concept Details		
Concept Details		
Summary	Details	Diagram
Expression	Refsets	Members
References	Classification Map	
Herpes zoster iridocyclitis (disorder) 10698009 ICD10		
Map Entries		Rule
1/1/1	B02.3 Zoster ocular disease	TRUE
1/2/1	H22.0 Iridocyclitis in infectious and parasitic diseases classified elsewhere	TRUE
2/1/1	H22.0 Iridocyclitis in infectious and parasitic diseases classified elsewhere	TRUE
2/2/1	B02.3 Zoster ocular disease	TRUE

Map Block 2 allows the sequencing of the Dagger (**B02.3**) and Asterisk (**H22.0**) combination to be switched. Again, as two classification codes are required to represent the meaning of the concept, Map Block 2 contains two Map Groups and the map entry 2/**1**/1 signifies that **H22.0** will be sequenced before **B02.3** (2/**2**/1). As both target codes **H22.0** and **B02.3** are required to represent the meaning of the concept they are both default target codes (**TRUE**) and both have a Map Priority of one – 2/1/**1** and 2/2/**1**.

SNOMED CT content not in scope of the classifications

As SNOMED CT is designed to provide granular clinical information within an EPR, it includes content that is not within scope of the classifications. Consequently, not all SNOMED CT concepts will have a map to a classification code (or codes).

'Start points' within the mapping tool environment allows some automated exclusion of content that is out of scope of the classifications and this content is not presented for mapping. Concepts that have been excluded will display the statement '*No complex map found for ...*' in the 'Classification Map' tab. E.g., **277459008 | Daumas-Duport grading system (staging scale)** is excluded because the 'staging scale' hierarchy is not in scope of the ICD-10 or OPCS-4:

The screenshot shows the 'Concept Details' page for concept 277459008. The 'Classification Map' tab is selected, and a message states: "No complex map found for 277459008".

Relation status

In some instances, despite being included within an in-scope start point, some concepts presented for mapping are still not classifiable. Some may be included within an 'in scope' hierarchy but are still out of scope in terms of the classifications. Other lack the required detail to enable definitive classification within the axis of ICD-10 or OPCS-4. Such concepts will be marked with one of the following statuses in the 'Relation' column in 'Classification Map' tab:

1. Map source concept cannot be classified with available data

A concept that cannot be represented in the classifications.

Example – Referral to respiratory clinic

The screenshot shows the 'Concept Details' page for concept 809371000000100. The 'Classification Map' tab is selected. The concept is identified as "Referral to respiratory clinic (procedure)". The table below shows the mapping details:

Map Entries	Rule	Advice	Relation
1/1/1	No target	TRUE	MAP SOURCE CONCEPT CANNOT BE CLASSIFIED WITH AVAILABLE DATA

Whilst many concepts within the 'procedure' hierarchy are in scope of OPCS-4, this concept is not and therefore is not classifiable.

2. High level concept

A high-level concept lacks enough detail to be mapped to a classification code.

Concept Details			
Concept Details ⌚ ⚙️			
Summary	Details	Diagram	Expression
Biopsy of head (procedure) 702707005 OPCS4.8			
Map Entries	Rule	Advice	Relation
1/1/1	No target	TRUE	High level concept

In the example above, the lack of detail is due to the hierarchical parent/child structure of the SNOMED CT concepts. As the main axis of OPCS-4 is body system and the organs within the system, use of the term 'head' is not detailed enough to provide an appropriate classification target map. However, any child concepts of 'biopsy of head' that include sufficient detail of the specific structure of the head biopsied (e.g. 'biopsy of meninges of brain') will have an OPCS-4 classification map.

3. Eponym

The use of eponyms is discouraged for mapping purposes and concepts containing eponymous terms are considered unsafe to map. This aligns with **PRule 8: Surgical eponyms** which states that when an eponym is used in the medical record, the coder must analyse the procedural information to ensure accurate OPCS-4 code assignment. (For further information follow the footer link provided on page 3, which will direct you to where you can download the National Clinical Coding Standards OPCS-4 Reference Book.)

Example – Watson-Jones operation

Concept Details			
Concept Details ⌚ ⚙️			
Summary	Details	Diagram	Expression
Watson-Jones operation (procedure) 219515009 OPCS4.8			
Map Entries	Rule	Advice	Relation
1/1/1	No target	TRUE	Eponym

Map Advice

The map advice provides information about classification rules. It is included in the maps to allow system suppliers to build classification rules and coding standards into their systems:

Example 1 – Laparoscopic approach to abdominal cavity

Concept Details			
Concept Details 🕒 ⚙️			
Summary	Details	Diagram	Expression
Refsets	Members	References	Classification Map
Laparoscopic ultrasonic approach to abdominal cavity - OPCS Classification of Interventions and Procedures (qualifier value) 222071000000109 OPCS4.8			
Map Entries	Rule	Advice	Relation
1/1/1	Y53.2 Approach to organ under ultrasonic control	ALTERNATIVE	ADDITIONAL CODE MANDATORY
1/1/2	Y75.5 Laparoscopic ultrasonic approach to abdominal cavity	TRUE	ADDITIONAL CODE MANDATORY

Codes from OPCS-4 Chapter Y are used to enhance codes from the body systems chapter and must only be used in a secondary position.

Example 2 - Postoperative wound infection

Concept Details			
Concept Details 🕒 ⚙️			
Summary	Details	Diagram	Expression
Refsets	Members	References	Classification Map
Postoperative wound infection (disorder) 58126003 ICD10			
Map Entries	Rule	Advice	Relation
1/1/1	T81.4 Infection following a procedure, not elsewhere classified	TRUE	ADDITIONAL CODE POSSIBLE

It may be necessary to add an additional code e.g. an external cause code to identify the specific procedure that was carried out and which is associated with the postoperative infection.

More information

- A presentation providing an overview of [SNOMED CT for clinical coders](#) is available in the [Resource Library](#) on [Delen](#)
- Information describing the content, structure and use of the SNOMED CT UK Edition release classification mapping files can be found in [SNOMED CT UK Clinical Extension Release Documentation](#) area of Delen in:
 - **Release Notes:** SNOMED CT to ICD-10 and OPCS-4 Classification Maps
 - **Release Documents:** SNOMED CT to ICD-10 and OPCS-4 Map Table Technical Specification and Implementation Guidance (UK Edition)
- The classification mapping files are available for download from [TRUD](#) as part of the SNOMED CT UK Clinical Edition.

Reporting issues

Users of the maps who have a query about an existing map or wish to request a new map for an existing SNOMED CT concept should submit a request via information.standards@nhs.net