



SNOMED CT Refset to ICPC-2 Map Release Notes - January 2017

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1 Introduction

The SNOMED CT International General/Family Practice Reasons for encounter and Health issues reference set (hereafter called the GP/FP subset) and the map from the GP/FP subset to the International Classification of Primary Care (ICPC-2) were developed between 2010 and 2013 by the GP/FP subset and ICPC mapping project group. This project ended on December 31, 2013 after field-testing of the products was completed.



2 Background

In December 2009 a harmonization agreement was finalized between the IHTSDO and WONCA to promote co-operation and collaboration between the two organisations. This agreement led to the formation of the International Family Physician/General Practitioner Special Interest Group (IFP/GP SIG) under the auspices of the IHTSDO. The IFP/GP SIG was established to suggest content for the Systematized Nomenclature of Medicine – Clinical Terms (SNOMED CT®) related to general/family practice and to provide quality assurance for SNOMED CT content from the general/family practice perspective. The IHTSDO's existing Primary Care Special Interest Group was converted to the IFP/GP SIG after the agreement was signed.

The agreement contained a commitment to develop a mapping program, classifying relevant content in SNOMED CT to the International Classification of Primary Care, Version 2 (ICPC-2). Under the terms of the agreement, each task or project in the mapping program was to be managed by a mapping project group, comprised of members from the IFP/GP SIG, the WONCA International Classification Committee (WICC) and the IHTSDO's Mapping Special Interest Group. A project group for this task was established in early 2010 and called the 'International GP/FP subset and ICPC mapping project group'. The release of the map from the SNOMED CT GP/FP subset to ICPC-2, described in this document, fulfils the commitment to classify relevant content from SNOMED CT to ICPC-2.

2.1 The International Classification of Primary Care, Version 2 (ICPC-2)

ICPC-2 is a classification designed for use in general/family practice around the world. ICPC-2 is developed and maintained by the Wonca International Classification Committee (WICC), representing members from over 20 countries. The copyright of ICPC is owned by Wonca. Version One of the classification was released in 1987 (ICPC-1), with the second version (ICPC-2) in 1998. The map is based on ICPC-2e-v.4.2 May 2012.

ICPC-2 contains approximately 1,300 codes and has a biaxial structure containing chapters and components. The 17 chapters are based on body systems, with additional chapters for psychological and social problems. The seven components are:

1. Symptoms and complaints
2. Diagnostic and preventive procedures
3. Medication, treatment, therapeutic procedures
4. Results
5. Administrative
6. Referrals and other reasons for encounter
7. Diagnoses and diseases.

Components 2 to 6 inclusive are collectively called 'processes of care'.

Components	A	B	D	F	H	K	L	N	P	R	S	T	U	W	X	Y	Z
1. Symptoms, complaints																	
2. Diagnostic, screening, prevention																	
3. Treatment, procedures, medication																	
4. Test results																	
5. Administrative																	
6. Other																	



7. Diagnoses, disease					
A	General	L	Musculoskeletal	U	Urinary
B	Blood, blood-forming	N	Neurological	W	Pregnancy, family planning
D	Digestive	P	Psychological	X	Female genital
F	Eye	R	Respiratory	Y	Male genital
H	Ear	S	Skin	Z	Social
K	Circulatory	T	Metabolic, endocrine, nutritional		
Figure 1: The structure of the International Classification of Primary Care—Version 2 (ICPC-2)					



3 Release content

3.1 Overview

Note: This document provides release information about the map from the GP/FP subset to ICPC-2. Release information about the GP/FP subset can be found in the January 2017 SNOMED CT to General Practitioner/Family Practitioner (GPPF) Subset Release Notes.

To determine the 'relevant' SNOMED CT content for mapping to ICPC-2, a decision was made to focus on two semantic data types commonly used in general/family practice electronic health records:

- Reasons For Encounter (RFEs)
- Health Issues.

A reason for encounter was defined as:

"An agreed statement of the reason(s) why a person enters the health care system, representing the demand for care by that person. The terms written down and later classified by the provider clarify the reason for encounter and consequently the patient's demand for care without interpreting it in the form of a diagnosis. The reason for encounter should be recognized by the patient as an acceptable description of the demand for care" (WONCA Dictionary of General/Family Practice, 2003).

A health issue was defined as an:

"issue related to the health of a subject of care, as identified or stated by a specific health care party". This is further defined in the notes as "according to this definition, a health issue can correspond to a health problem, a disease, an illness" (Health Informatics – System of concepts to support continuity of care – Part 1: basic concepts (CEN/ISO FDIS 13940-1)).

These definitions were used to define the scope of a subset of SNOMED CT concepts that represented terms commonly used to populate these semantic data types. The content of this subset was subsequently mapped (or classified) to ICPC-2.

3.2 Status of content

The ICPC-2 map is a SNOMED CT module; the original Baseline Release was published following the July 2015 SNOMED CT International Edition Release.

This latest January 2017 Production release of the ICPC-2 map is aligned to the SNOMED CT January 2017 International Edition.

3.3 Changes to the January 2017 release ICPC-2 map

As a result of changes to the January 2017 release of SNOMED CT, the following maps were changed:

Inactive ID	Inactivated	Active ID	Reason for inactivation	Active	Map effectiveTime
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236704009	Asymptomatic bacteriuria (disorder)	720406004	SAME AS	Asymptomatic bacteriuria (finding)	Replaced with new map record to U71
267052005	Flatulence/wind (finding)	249504006	SAME AS	Passing flatus (finding)	Replaced with pre-existing map record to D08
267129008	Inadequate housing (finding)	105531004	POSSIBLY EQUIVALENT TO	Housing unsatisfactory (finding)	Replaced with pre-existing map record to Z03
367522007	Dermatitis infectiosa eczematoides (disorder)	414492009	SAME AS	Infective eczematoid dermatitis (disorder)	Replaced with pre-existing map record to S88
371093006	Urosepsis (disorder)	721104000	POSSIBLY EQUIVALENT TO	Sepsis due to urinary tract infection (disorder)	Replaced with new map record to U71
401123009	Cancer care review (regime/therapy)	720006006	REPLACED BY	Cancer care review (procedure)	Replaced with new map record to -31



4 Implementation of the map from the GP/FP subset to ICPC-2

4.1 Purpose of the map

The utility of creating maps from terminologies to classifications is well recognized. ICPC-2 is the most widely used classification in the general/family practice setting and is a related member of the World Health Organisation's Family of International Classifications (WHO-FIC). ICPC-2 is both a clinical tool and an analytic tool. It groups clinical concepts together to support epidemiological studies of general/family practice. However, it does not record clinical concepts at a high level of specificity when managing individual patients. The map from the SNOMED CT GP/FP subset to ICPC-2 utilizes the capabilities of both SNOMED CT and ICPC-2 by allowing granular concepts to be recorded by GPs/FPs at the point of care using SNOMED CT, with subsequent analysis and reporting using the internationally recognized ICPC-2 classification.

4.2 Use cases for the map from the GP/FP subset to ICPC-2 map

4.2.1 Patient recall

A SNOMED CT member country introduces an incentive program whereby additional reimbursements are made to GPs/FPs who see patients with Type 2 diabetes for a minimum number of encounters and the patient meets pre-defined targets for their HbA1C level. A GP/FP in this country sets up a patient recall query in their EHR to identify patients with Type 2 diabetes who would be eligible for inclusion in this program. The GP/FP already uses the SNOMED CT GP/FP subset to enter all health issues on the problem list for each patient, so is able to utilize the in-built map to ICPC-2 to identify all patients with Type 2 diabetes or synonyms of this concept (using the ICPC-2 code T90 Diabetes, non-insulin dependent). The GP/FP extracts the data from the query, and sends patient recall letters to patients as appropriate.

4.2.2 Data entry

During an encounter in his/her general/family practice, a GP/FP sees a patient who has presented with a newly identified health issue. Using his/her EHR, the GP/FP searches for and selects the ICPC-2 code that represents the health issue presented by the patient. The ICPC-2 code for this health issue is not specific enough to adequately describe the health issue for clinical purposes. The GP/FP therefore clicks on a link to the GP/FP subset and is presented with a list of the SNOMED CT concepts from the GP/FP subset that are mapped to this ICPC-2 code. The GP/FP identifies the SNOMED CT concept he/she wishes to use to further describe the health issue, and enters this into the medical record.

4.2.3 Management of legacy data

A GP/FP has recently started using the GP/FP subset in conjunction with the map to ICPC-2, having previously used ICPC-2 alone for eight years. The GP/FP profiles his/her practice every year to identify changes in patient presentations and the health issues managed at the practice. The GP/FP utilizes the map from the subset to ICPC-2 to ensure that this exercise can continue, so that legacy data collected in ICPC-2 and new data entered using SNOMED CT can both be extracted and analyzed using ICPC-2 for practice profiling over time.

4.2.4 Research

A GP/FP is using the international SNOMED CT GP/FP subset to enter all reasons for encounter and health issues into his/her EHR. The GP/FP agrees to take part in a research study that requests data about patient health issues to be extracted from the GP/FP's EHR. The GP/FP exports the requested data, including the SNOMED CT concepts entered using the GP/FP subset and forwards the data to the organisation conducting the research study. The researchers are able to extract the SNOMED CT codes in the data and utilize the map to ICPC-2 to aggregate data from multiple GPs/FPs. This facilitates their analyses of the data, and they subsequently report results using ICPC-2, allowing comparison with other similar studies conducted in the GP/FP setting.

4.3 Design of the map



The map from the GP/FP subset to ICPC-2 is produced as a complex map reference set, where each SNOMED CT concept in the GP/FP subset is linked to one or more ICPC-2 codes as appropriate. Map code correlation was not used in the map from the SNOMED CT GP/FP subset to ICPC-2. Detail about complex map reference sets can be found in Section 5.6.2.7 of the SNOMED CT Technical Implementation Guide.

4.3.1 Map source

The source for this map is the GP/FP subset, as defined in the following documents:

- General/family practice RefSet and ICPC mapping project: Scoping document (Version 1.0)
- General/family practice RefSet and ICPC mapping project: Requirements document (Version 1.0)
- General/family practice RefSet and ICPC mapping project: Methods document (Version 1.0)
- General/family practice RefSet and ICPC mapping project: Phase 2 project report (Version 1.0)

Available from info@ihtsdo.org

4.3.2 Map target

All ICPC-2 codes are in scope for the map. However, due to the content of the GP/FP subset, which focuses on reasons for encounter and health issues, the target areas covered by the map are primarily ICPC-2 codes in Component 1 (Symptoms and complaints) and Component 7 (Diagnoses and diseases).

4.3.3 Direction of the map

The map is from SNOMED CT concepts to ICPC-2 classification codes.

4.3.4 Map cardinality

The cardinality of the map from the GP/FP subset to ICPC-2 varies. The possible options are:

- Cardinality of one-to-one: indicates that the source concept in the GP/FP subset maps to one code in ICPC-2.
- Cardinality of one-to-many: indicates that the source concept in the GP/FP subset has been mapped to multiple codes in ICPC-2.

Explanation of the one-to-many cardinality:

Some rubric codes in ICPC-2 contain contextual information about patient sex or age within the code's label. In the case of patient sex, this differentiation is inherent within the structure of ICPC-2 because the chapters within the classification are based on body systems, and there are different chapters for the male genital and female genital systems. Where a single SNOMED CT concept must be classified to different ICPC-2 codes based on patient sex or age, a context-dependent rule based map has been created, allowing the user to select the correct ICPC-2 classification code in each individual circumstance.

4.4 Benefits of using the map

- The map from the GP/FP subset to ICPC-2 will allow GPs/FPs to record and retrieve clinical data using two interdependent international standards.
- The map allows users to enter data in EHRs using the granularity of SNOMED CT, and extract data from EHRs using the international standard of ICPC-2
- For those who manually allocate ICPC-2 codes during data entry, the map will provide an opportunity to obtain additional specificity in the form of SNOMED CT concepts

4.5 Implementation of the map from the GP/FP subset to ICPC-2



Implementers of the map must be aware that this is not a full map from SNOMED CT to ICPC-2. The IFP/GP SIG will have clinical oversight of planned additions and changes to the source SNOMED CT concepts and maps.



5 Implementation overview

Primarily, the map from the GP/FP subset to ICPC-2 is designed to be implemented in general/family practice electronic health records. There are a variety of ways in which the map from the GP/FP subset to ICPC-2 can be implemented, and it would be impossible to outline each possible scenario in this report. Vendors are encouraged to contact members of the IFP/GP SIG to discuss specific implementation scenarios.

5.1 Deciding to implement the subset and map to ICPC-2

The benefits of implementing SNOMED CT are discussed in Section 3.1 of the SNOMED CT Technical Implementation Guide. There may be many reasons why a decision is made to implement the map from the GP/FP Subset to ICPC-2, including:

- a national directive to use SNOMED CT in general/family practice
- desire for standardization with other levels of the health care system, creating potential for greater interoperability
- transition from legacy systems/local terminologies to a standard reference terminology.

5.2 Obtaining the GP/FP subset and ICPC-2 map

Initially, the map from the GP/FP subset to ICPC-2 was released as a 'candidate baseline' in April 2014. The July 2015 release of the map was then a baseline release. The RF2 files for the GP/FP Subset and map to ICPC-2 will be updated subsequently to, and in line with each release of the SNOMED CT International Release.



6 Effective Date and Maintenance

6.1 Effective Date

The effectiveTime for the content has been set to 20170131 (31st January 2017).

6.2 Feedback

Feedback should be sent directly to info@snomed.org, and marked as SNOMED CT to ICPC-2 feedback.



7 Technical Notes

RF2 package format

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.