NHS Digital

Codes with Values – alternate maps

SNOMED CT in primary care

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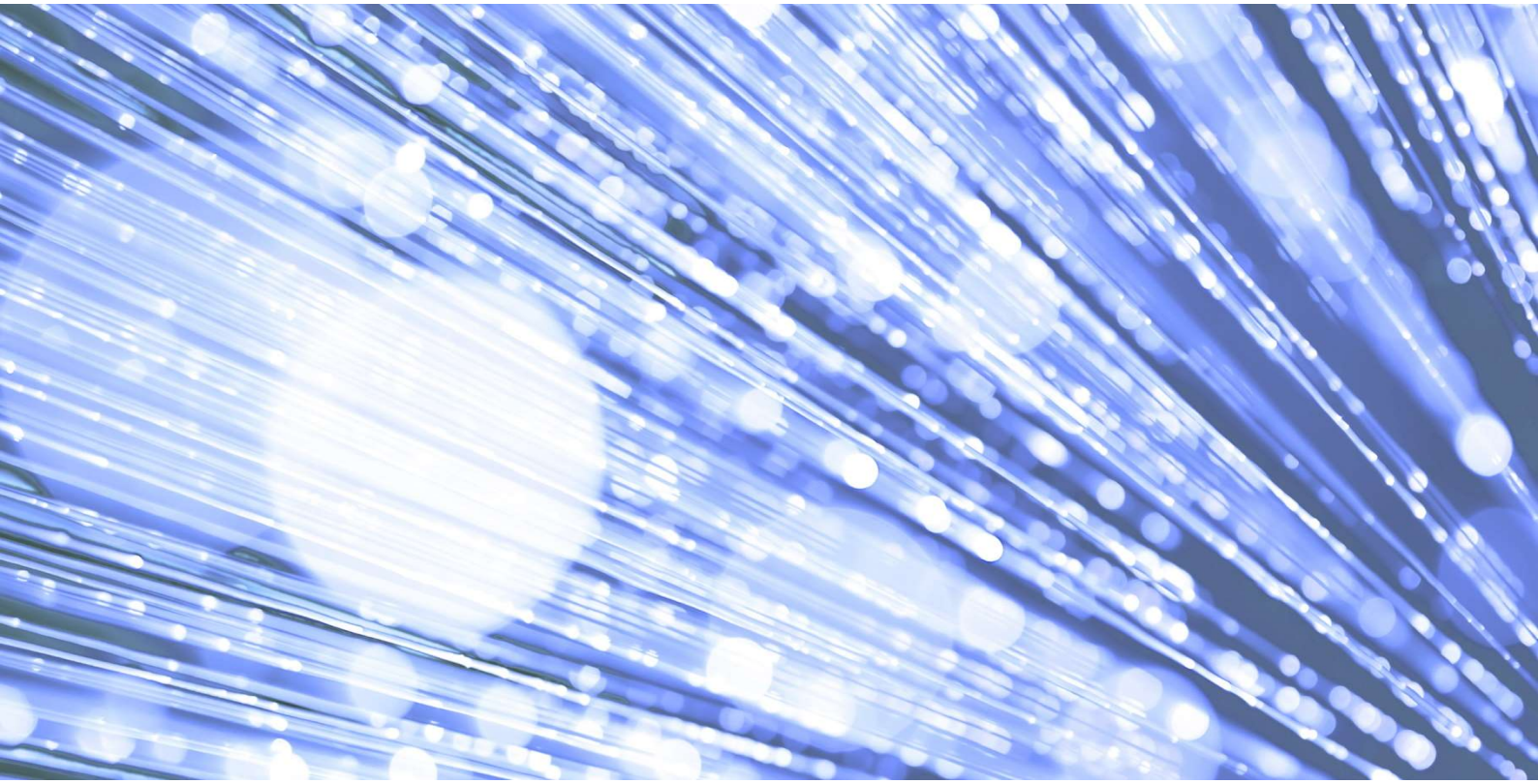

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Purpose

To document information in relation to the data files provided in the NHS Data Migration pack that provides alternate maps for Read 'codes with values' to SNOMED CT Observables.

Background

In SNOMED CT, all concepts that can take values - for example laboratory results, body weight, temperature, pulse rate or assessment scale scores - are in the Observables hierarchy:

1028881000000105 Serum random glucose level (observable entity)
27113001 Body weight (observable entity)
703421000 Temperature (observable entity)
78564009 Pulse rate (observable entity)
1084601000000102 Fast Alcohol Screening Test score (observable entity)

Although similarly named codes often also exist within the Findings hierarchy, these findings are properly intended primarily as 'common ancestor groupers' for particular sets of concepts that combine the idea of the relevant observed phenomenon with an interpretation (or other abstraction) of its actual result, and which are classified below them:

162763007 O/E – weight (finding)
- 162769006 O/E - Underweight
  - 162751002 O/E - ectomorph
  - 162764001 O/E - weight greater than 20% below ideal
  - 162765000 O/E -weight 10-20% below ideal
- 275947003 O/E - overweight
  - 162690006 O/E - obese
  - 268915006 O/E - weight 10-20% over ideal
  - 268916007 O/E - weight greater than 20% over ideal
- 162766004 O/E - weight within 10% ideal

162986007 O/E - pulse rate
- 162991008 O/E - pulse borderline fast
- 162989000 O/E - pulse borderline slow
- 162988008 O/E - pulse rate - bradycardia
- 162990009 O/E - pulse rate normal
- 162992001 O/E - pulse rate tachycardia
- 162993006 O/E - pulse rate very fast
- 162987003 O/E - pulse rate very slow
- 162994000 O/E - pulse rate-pulse deficit
- 162995004 O/E pulse rate stable

Such groupers permit query specifications to more economically reference the full set of these descendent concepts. But neither the descendent codes - nor for the same reason their groupers – should also appear in electronic records with directly attached numerics; in some cases to do would be obviously contradictory:

Code	Numeric Value	Unit
162987003 O/E - pulse rate very slow value	200	beats per minute
162765000 O/E -weight 10-20% below ideal	150	kg

For the same reason, it would generally be meaningless for codes from SNOMED's Observables chapter to appear in an EPR *without* some form of value attached (and, where appropriate, also a unit of measurement)[1].

[1] To record a request for a particular phenomenon to be measured, an appropriate code from SNOMED's Procedure chapter should ideally be used, not the unadorned Observable.

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In Read/CTV3 there was not such a clear distinction on the expected use of different codes and, as a result, sometimes the same Read codes appear in modern EPRs both with and without a value. However, the above discussion reveals that - depending on whether the code has a value associated with it in the original record – the same code has a potentially *different* specific meaning and these different meanings should therefore map where possible to different concepts in SNOMED CT.

For some of the codes involved, the huge majority of the data coded with it 'in the real world' will be with a value. For example [22A.. o/e weight] is conventionally used with a value across most national systems to record a patient's actual body weight, as well as in query specifications as the grouper for all interpretations of body weight as shown above (ie obese, underweight etc.).

This analysis reveals a limitation with the currently published maps from Read/CTV3 to SNOMED CT: they assume all instances of the same code in an EPR can and should be treated and mapped the same way. In some cases, although the published default 'one size fits all' map may therefore be appropriate for mapping query specifications, it can be rather less appropriate for the much larger volumes of patient instance data. The mapping of [22A.. o/e weight] is a case in point: it maps by default to 162763007|On examination - weight (finding)|

NHS Digital have therefore worked closely with the GP system suppliers to identify Read codes that have values in records in their system but that are not mapped by default to Observables. Where it has been agreed nationally that, when accompanied with a value, these codes should map to an Observable, an alternate set of maps have been provided to suppliers. These are known as the 'Alternate maps' or 'Divert maps'. Each supplier will use these, with the knowledge of the data in their system, if they determine this is appropriate (hence the label Divert maps, as they divert from the original map provided).

The terminology meaning has not been overwritten in the mapping tables as this is the original meaning of the code when authored and thus could be used in this way in some applications within the NHS.

Examples

The following aims to illustrate this situation; note that the illustrations are only provided at concept level and quote the SNOMED FSN for readability; the actual default mapping tables are at term level:

READ2/ CTV3 code	Term Text	Possible meanings	Default Mapped Concept	Alternate Map
XaZJN	Patient health questionnaire 2	The questionnaire or the value associated with the questionnaire	836521000000107 Patient health questionnaire 2 (assessment scale)	836541000000100 |Patient health questionnaire 2 score (observable entity)
X77cx	Pulse oximetry	The procedure or the oxygen saturation	252465000 Pulse oximetry (procedure)	431314004 Peripheral oxygen saturation (observable entity)
22A..	O/E - weight	The header for weight terms or the actual weight	162763007 O/E – weight (finding)	27113001 Body weight (observable entity)

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137P.	Cigarette smoker	The header for smoking interpretations or the observation that patient currently smokes at all or when with a value, the amount they smoke (which could be zero…) or the cumulative pack years or…	65568007 Cigarette smoker (finding)|	230056004 Cigarette consumption (observable entity) *or* 401201003 Cigarette pack-years (observable entity) *or* 228488005 Age at starting smoking (observable entity)
Xaa1t	Xaa1t Cognitive linguistic quick test attention domain	The subscale, **or** the procedure of making the subscale assessment, **or** its result (score)	863971000000104 Cognitive linguistic quick test attention domain (assessment scale)|	None currently available; 716814008 Measurement of Cognitive Linguistic Ability score (observable entity) is the summary overall assessment result, not the attention domain subscale score actually required
Xalcb	Xalcb Total lymphocyte count (IMM)	The procedure or the count of lymphocytes	446325007 Total lymphocyte count (procedure)	1022581000000105 Lymphocyte count (observable entity) **BUT NB** this is also the map target of the PBCL code 42M..

Method

All the Principal Suppliers (EMIS, Microtest, TPP, Vision) were invited to provide the lists of codes in their system that *ever* had values associated with them. NHS Digital have processed these to identify those that currently do not map by default to Observables. A review process of these codes has then been undertaken using terminology experts and an Expert Reference Group (ERG) of 4 GPs nominated by the Joint GP IT Committee. Each code has been reviewed independently by two of the ERG to determine firstly whether the codes do have an alternate meaning when associated with a value, and secondly whether that meaning is reliably unique: as shown above, [137P. Cigarette smoker] has more than one possible meaning when accompanied by a value. Where there was disagreement, these have been reviewed with a Principle Terminologist and the ERG, and a decision made.

For the codes identified that both required and could support a unique map to a SNOMED CT observable, appropriate existing Observable concepts where identified by terminology staff and then reviewed by the ERG. Where no such observables were currently available in SNOMED CT, these were requested and so are now either authored or pending release in a future SNOMED release.

Usage of the tables

Any organisation undertaking a transition from Read codes to SNOMED CT *should* use the NHS Digital 'default' mapping tables provided within the NHS Data Migration pack to identify equivalent SNOMED CT concepts for the Read codes. The maps in the Alternate maps table should be used instead of the maps provided in the 'default' Mapping tables where it is

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required that a particular Read code is to take a value. It is not required to use every map in the Alternate mapping table; the decision of which maps to use depends on usage within the particular system.

It should be noted that where an existing contract mandates the use of 'the NHS Digital mapping tables', the Alternate maps table are deemed to be part of the NHS Digital mapping tables product and so their use in line with this guidance can be considered consistent with existing contracts. Which map is used (i.e. the 'default' map in the standard mapping table or the 'alternate' map in the supplementary Alternate mapping table) must be determined with the knowledge of the system and as part of the clinical safety processes.

Suppliers under the GPSoC framework must use the NHS Digital mapping tables (and thus consider the Alternate maps) for the transition from Read to SNOMED CT.

Data File Structure

There are two datafiles: one for CTV3 and one for Read v2:

codesWithValues_AlternateMaps_CTV3_20180401000001.txt

codesWithValues_AlternateMaps_READ2_20180401000001.txt

The data files are within the NHS Data Migration pack on TRUD, which is in turn within the SNOMED CT derivative products area.

Both Alternate mapping tables are provided as a 5-column Tab separated .txt file, containing the following data items:

READCODE/CTV3ID: Read or CTV3 code (both BINARY(5))

TERMCODE: Term code from Read (CHAR(2)) or CTV3 (BINARY(5)

OBSERVABLE_CONCEPTID: Concept Id for the alternate map Observable

OBSERVABLE_DESCRIPTIONID: Description Id for the alternate map Observable

USE_ALTERNATE: Clinical recommendation on whether to use an alternate map CHAR(1)

- Y= map to the Observable listed whenever with a value
- A= *should* map to an Observable, if with a value but no suitable Observable currently exists (local codes may be considered in the interim)
- N= do not map to an Observable listed *even* when with a value (and *even* if a candidate Observable is listed)

Example

Using the codes illustrated in the Examples section, the datafile would contain:

READCODE/CTV3ID	TERMCODE	OBSERVABLE_CONCEPTID	OBSERVABLE_DESCRIPTIONID	USE_ALTERNATE
XaZJN	YavR6	836541000000100	2172151000000118	Y
X77cx	Y7Gd0	431314004	2772010012	Y
22A..	YM01u	27113001	45352010	Y
22A..	00	27113001	45352010	Y
137P.	00			N
Xaa1t	YavvW			A
Xalcb	Yal5w	1022581000000105	2566671000000117	N

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..where the USE_ALTERNATE value against the final entry is ‘N’ despite a possible alternate map being declared, in recognition that using this alternate map is not advised because it would conflate high quality PBCL data with other data of less certain provenance, originally entered (probably manually) using a *non*-PBCL code.

Additional Notes

The file will be provided as a static file. There are currently no plans to update or extend it. Suppliers should use the normal mechanisms for handling concept inactivation in SNOMED CT in the event that any SNOMED concepts given as an Alternate map should become non-current in future SNOMED releases.

Codes with values are those Concepts where the value is intrinsically linked to the code, so the entry requires a value to be complete for example: Triiodothyronine level, Haemoglobin level, Body weight, Pain score.

It is possible in some systems to also add text or further information to various Read codes, for example the process of assigning an individual to a clinical trial. In this case the Identifier for the trial is also noted alongside the code of recording they are on a particular trial. These identifiers are not classed as values and as such do not require an associated Observable concept. Systems should still enable such text to be entered alongside codes that are not observables, but may restrict which codes this is acceptable for.

Change Log

20181031 Removal of the READ2 divert map for 44vE.00 Lithium level therapeutic, which was not to an Observable (and no directly equivalent Observable currently exists). Also, one-time update of all divert maps where they would have pointed to an inactive SNOMED conceptId.

20200401 Final scheduled release version. No map changes.

Further Information

This document is produced by the SNOMED CT in primary care project. If you require further information please contact snomedprimarycare@nhs.net.

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