

# SNOMED CT in SystemOne

## Guidance for users

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## Document History

Version	Date	Description
1.0	07/12/2017	Document created.
1.1	22/01/2018	Second draft created by Alistair Carr: <ul style="list-style-type: none"> <li>• Revised timescales according to new pilot dates.</li> <li>• Detailed improvements to code browser, Clinical Reporting, Data Entry Templates and GP2GP.</li> <li>• Created Journal section.</li> <li>• Added GP Connect information to Client APIs section.</li> </ul>
1.2	13/02/2018	Third draft created by Simon Rowley: <ul style="list-style-type: none"> <li>• Added introduction.</li> <li>• Added clarification to code browser section.</li> <li>• Added FAQ section</li> </ul>
1.3	26/02/2018	Fourth draft created by Anja Pilav: <ul style="list-style-type: none"> <li>• Made various amendments based on NHSD feedback</li> </ul>
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1.5	30/05/2018	Sixth draft created by Alistair Carr <ul style="list-style-type: none"> <li>• Added information relating to the impact of reauthoring templates/reports for the attention of the First Of Type site</li> </ul>
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1.7	04/09/2018	Eighth draft created by Esther Bavington
1.8	17/10/2018	Ninth draft created by Anja Pilav. Updated most sections due to developments made to the functionality.
1.9	25/10/2018	Tenth draft created by Anja Pilav. <ul style="list-style-type: none"> <li>• Added report breakdown information.</li> <li>• Formatting changes.</li> <li>• Made various amendments based on NHSD feedback.</li> </ul>
2.0	05/11/2018	Eleventh draft created by Anja Pilav. Minor amendments.

# Introduction

## *When?*

The changes to SystmOne in order to be SNOMED-compliant will be ready and assured by NHS Digital in **November 2018**, in tandem with a first-of-type trial run of the functionality with a subset of SystmOne GP users. Shortly after this, we will be able to give all SystmOne users access to the improvements implemented for SNOMED. The dates for this are to be confirmed soon, and will be communicated to users via SystmOne Notices.

## *How?*

TPP aims to support all its users in transitioning to SNOMED CT by April 2020. During this first phase, the system will continue to use CTV3 codes, supplemented by TPP authored Y-codes, as the unique identifiers in records for clinical terms. However, users will be able to enter terms using the CTV3 or SNOMED CT hierarchy, and review data based on codes using either CTV3 or SNOMED CT.

This means that, rather than converting all CTV3 codes within the system to be SNOMED CT codes, coded information in SystmOne will remain in CTV3 format and mapped to SNOMED via NHS-assured mapping tables. In effect, the data will be dual coded in CTV3 and SNOMED CT. Users can therefore choose to see very little difference in the front-end user interface, or can toggle to see SNOMED CT in the appropriate screens.

Historical data will still be stored in CTV3 format. Initially, not all of the terms in SNOMED CT will be available, but these will be added based on business need.

## *What does this mean for you?*

Changes to the code browser will allow users to search for codes using SNOMED CT codes and terms, as well as being able to search using CTV3 codes or terms as they do currently. Users will also be able to toggle between viewing codes as part of the SNOMED or the CTV3 hierarchy. Therefore, there will be no need to learn new codes in SNOMED CT format if users just wish to continue using the browser as it currently works. In many cases the term text is the same in CTV3 and SNOMED CT.

After April 2018, some users will need to create new reports that use the SNOMED hierarchy of codes, such as reports requested by commissioners across a CCG. As there are some differences between the hierarchy of codes within CTV3 and SNOMED CT, SystmOne functionality will let users build reports by specifying that the SNOMED CT code hierarchy is required.

This means that clinical reporting within SystmOne will support creating or amending reports using either the CTV3 or the SNOMED hierarchy, as required by the user.

## *What about receiving and exporting data?*

Data within SystmOne will continue to be stored in CTV3 format for the time being.

Data received into SystmOne will be mapped from SNOMED to CTV3 automatically. Any data sent from SystmOne can be sent in either CTV3 or SNOMED format, or both, depending on user preference and/or the mechanism in question. For example, GP2GP transfers will include both SNOMED and CTV3 by default, whereas users can choose whether to include SNOMED or CTV3 or both within Strategic Reporting configurations.

This also means that any integrations can still operate by receiving and sending CTV3 codes.

## ***Do I need to change anything I currently use?***

Historical data and tools used to enter this data will continue to use CTV3. These will continue to work as they did before once the SNOMED developments are enabled. Therefore users will not *need* to change any existing data entry tools and/or data output tools and reports as a result of TPP's changes to the system, although they will be able to do so if they wish.

Any templates or reports which are required to be submitted on a national level (e.g. for QOF) will be converted by TPP in advance of any planned submission dates.

## **Background & Context**

### ***Transitioning the NHS to use SNOMED CT***

As per the [SCCI Notice](#) issued on 12<sup>th</sup> May 2016, all primary care Principal System Suppliers under the GPSoC framework are required to be SNOMED compliant.

Non-primary care clinical systems (e.g. Secondary Care, Acute Care, Mental Health, Community etc.) must be SNOMED compliant by **1<sup>st</sup> April 2020**.

The CTV3 terminology system is now deprecated; the last release was on 1<sup>st</sup> April 2018. No new CTV3 codes will be authored. In the long term, SystemOne will move to use SNOMED CT as its primary coding system. Users will be made aware of any upcoming changes in advance of their implementation.

NHS Digital has provided various materials relating to the underlying reasoning behind the transition and the benefits that SNOMED CT can bring. These can be found on the [NHS Digital website](#). If you have any enquiries around SNOMED CT itself and its use as a coding terminology, (rather than its implementation into SystemOne), please contact the NHS Digital SNOMED team directly.

### ***Mapping between CTV3 and SNOMED CT***

In preparation for the transition, the NHS Digital UK Terminology Centre (UKTC) has produced a set of cross mapping tables. Both forwards and backwards mappings are provided, i.e. both from CTV3 to SNOMED CT and from SNOMED CT to CTV3.

SNOMED CT is a larger coding system than CTV3 and all CTV3 codes have an associated mapping to SNOMED CT. However, not all SNOMED CT codes have a direct mapping back to CTV3 – in particular, those codes beyond the scope of Primary Care coding activity. Throughout this document, SNOMED CT codes that do not have an associated CTV3 mapping, including those codes for which there is a corresponding Y-code and mapping created, will be referred to as those 'outside the GP Subset'.

These cross mapping tables have been clinically assured by an Expert Reference Group (ERG) set up by NHS Digital, which comprises clinicians and users of all four principal system suppliers. A small number of mappings (0.04%, 1 in every 2,500) will not be assured, as the codes are not adjudged to be directly equivalent. However, these codes are very rarely used in General Practice and in these cases the GP Subset will still offer an acceptably detailed alternative. Please see the UKTC Primary Care Reference Sets document for more detail on the NHS Digital methodology used to assure the cross mapping tables.

## Changes to SystemOne

TPP will be implementing SNOMED CT compliance for GP practices in a way that is consistent with the centralised, shared nature of SystemOne electronic records, used across multiple healthcare settings. Rather than converting all CTV3 codes within the system to be SNOMED CT codes, coded information in SystemOne will remain in CTV3 format. Users will therefore notice very little difference in the front-end user interface.

To maintain interoperability with other systems, TPP will be utilising the UKTC cross mapping tables described above to map data received into SystemOne in SNOMED CT format to CTV3, and conversely map data sent out from SystemOne to other systems from CTV3 format to SNOMED CT.

Going forward, it is expected that updated versions of the UKTC cross mapping tables will be released regularly, in line with the SNOMED CT code releases.

Upon the release of a new version of the mapping tables, TPP will update SystemOne to apply the new mappings to all data received into and sent out from SystemOne from the time of the system update. However, any data recorded prior to the implementation date of the updated mapping tables will not retrospectively change automatically, unless an error is identified.

The changes described in this guide will be implemented by TPP across the entire SystemOne estate i.e. within all SystemOne modules, not just General Practice, though the roll-out will be later for certain modules. The developments are currently in the process of being assured by NHS Digital alongside a First of Type pilot. Following the successful conclusion of this pilot, the new functionality will then be made available to most users in the autumn of 2018.

Please note that the functionality described below is still undergoing development and assurance, and therefore how it will be delivered is subject to change.

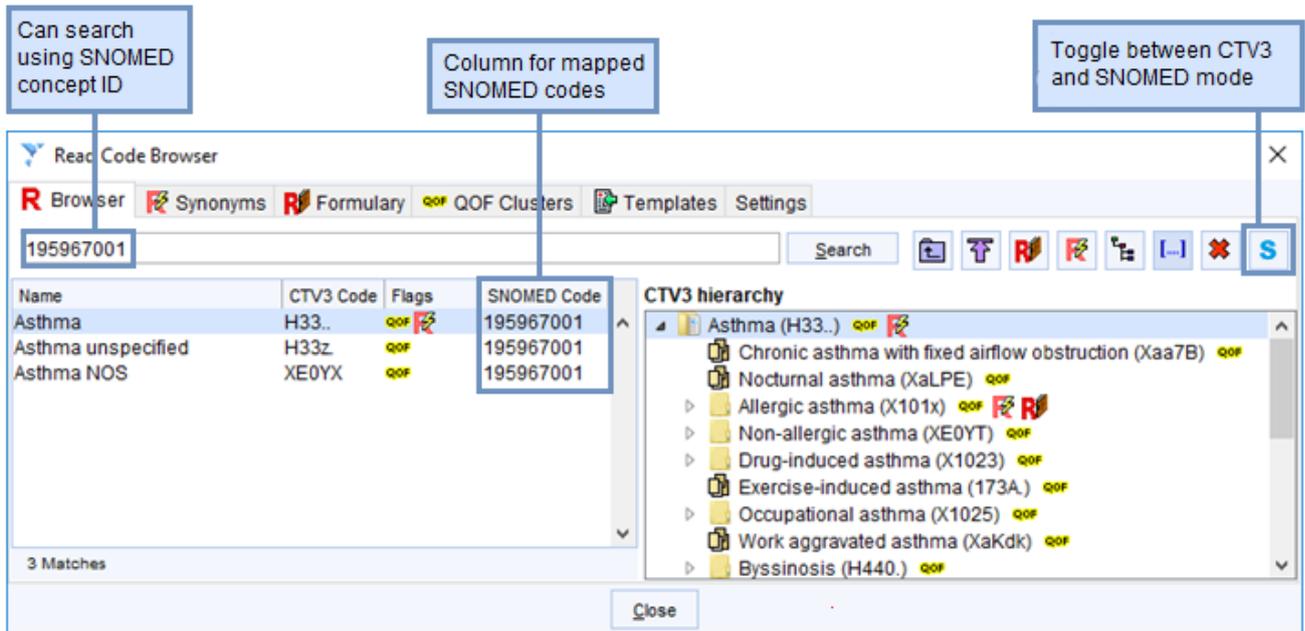
All codes and mappings referred to in examples below are correct as of September 2018.

Any patient data shown below is fictitious.

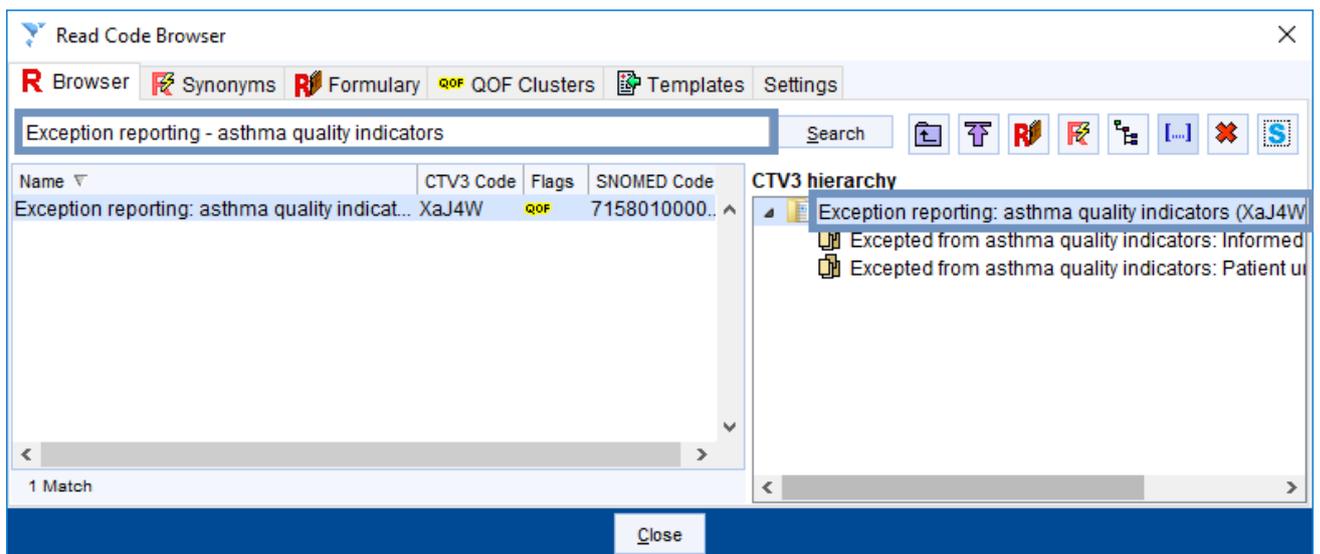
### Code Browser

It will be possible to use the code browser in CTV3 or SNOMED 'mode' which will be the default setting. The following will apply to both versions of the browser:

- Users can search the SystemOne code browser using a SNOMED CT Concept ID or description.
- The existing functionality will be unaffected i.e. users will still be able to use the browser to search for CTV3 codes and descriptions as before.
- The left side of the browser will always display the CTV3 code representing the concept that has been searched for, regardless of whether you have searched on a SNOMED CT Concept ID or CTV3 code or term.
- A single SNOMED CT Concept ID can be mapped to multiple CTV3 codes. In the scenario whereby a user selects a SNOMED concept that maps to multiple CTV3 concepts, the SystemOne code browser will display all possible mapped CTV3 codes for selection on the left of the browser dialog.
- There will be the option to include the "SNOMED Code" column on the left of the browser, which will be displayed by default for all users. This can be toggled on or off from the "Settings" tab of the browser using the "Show corresponding SNOMED codes in the browser search results" tickbox.
- Clicking on the "S" icon in the top-right of the dialog toggles between the SNOMED and CTV3 mode of the browser.



**Fig. 1 CTV3 browser mode:** Users are able to search using SNOMED CT concept ID, which will return the associated CTV3 description and Concept ID, with the SNOMED CT Concept ID displayed adjacent to it.

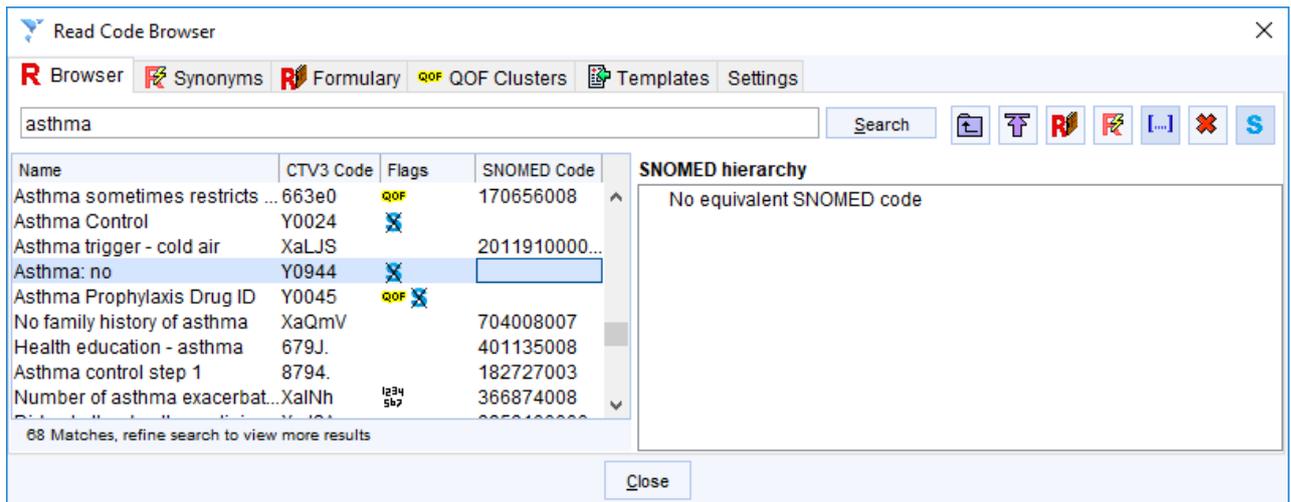


**Fig. 2 CTV3 browser mode:** Users are also able to search using SNOMED CT descriptions.

## SNOMED mode

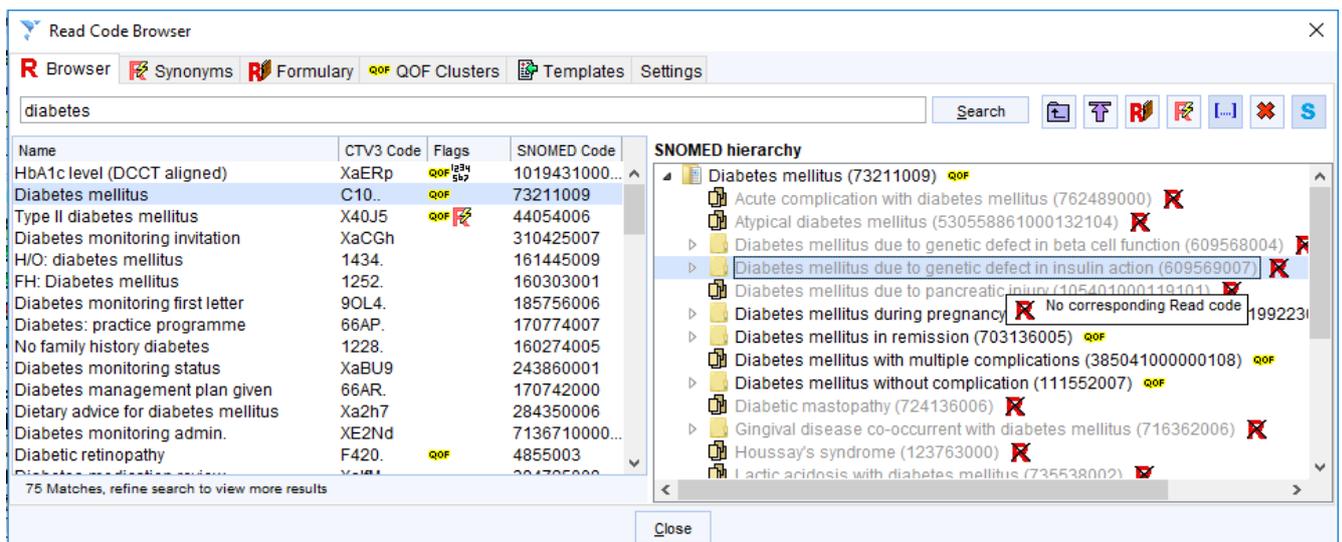
When the browser is toggled to use the SNOMED code hierarchy, which is the default, the right side of the browser will show the SNOMED hierarchy of codes instead of CTV3. The left of the browser will stay the same.

Any CTV3 codes which do not have a mapping to SNOMED CT will be shown as in the screenshot below:



**Fig. 3 SNOMED browser mode:** Y-codes without a mapping to SNOMED are identified with an icon in the Flags column on the left, and with the text above on the right of the browser.

In the SNOMED view of the browser, any codes which do not have an associated CTV3 or Y-code mapping (and therefore cannot be entered into the SystmOne record) will be shown as greyed-out on the right of the browser, and with an icon representing that there is no corresponding read code, as in the screenshot below:



**Fig. 4 SNOMED browser mode:** SNOMED codes without a CTV3 or Y-code mapping are greyed out and have the “no corresponding read code” icon on the right.

### Requesting unmapped codes

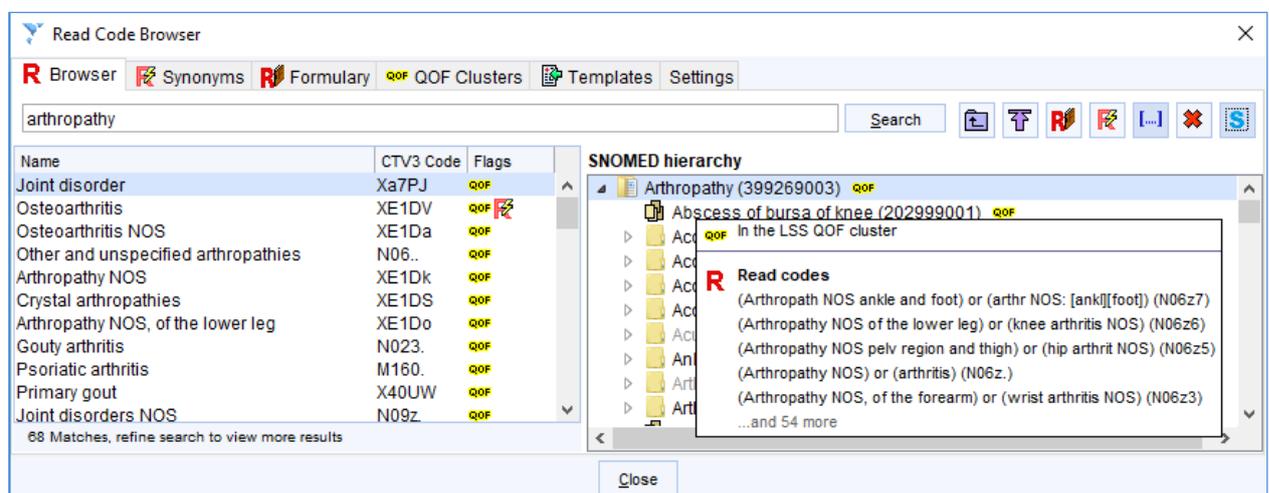
In the rare event that a SNOMED CT code without an existing mapping (as in the screenshot above) is required for data entry, users will be able to request that TPP creates these via the SystmOne helpdesk. In such instances, TPP will create a local code (also known as a ‘Y-code’) that has the same description as the required SNOMED CT code. TPP will create a mapping between this Y-code and the equivalent SNOMED code, so that data can be sent out from SystmOne in SNOMED CT format, if required.

TPP will create these Y-codes using the current approach: Y-codes will be placed in the appropriate position in the taxonomy, based on the SNOMED CT hierarchy and with full clinical oversight. These Y-codes will then be searchable and selectable in SystmOne, either via their description, the associated SNOMED Concept ID, or by the Y-code itself.

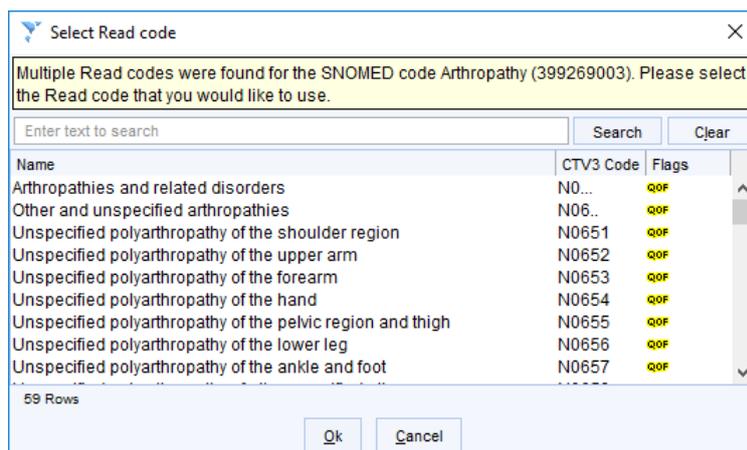
**Users can continue to follow any local processes that are in place for requesting codes.** These will continue to be prioritised by TPP on a case-by-case basis and the timeframe associated with these being completed will reflect this priority.

### Codes with multiple mappings

SNOMED CT codes may be mapped to multiple CTV3 codes. For further details on why this is the case, please see the '[Data Quality Guidance](#)' from NHS Digital. When users choose one of these SNOMED codes with multiple mappings to add to a patient record, they will sometimes be prompted to choose which of the specific mapped CTV3 codes they want to add to the patient:



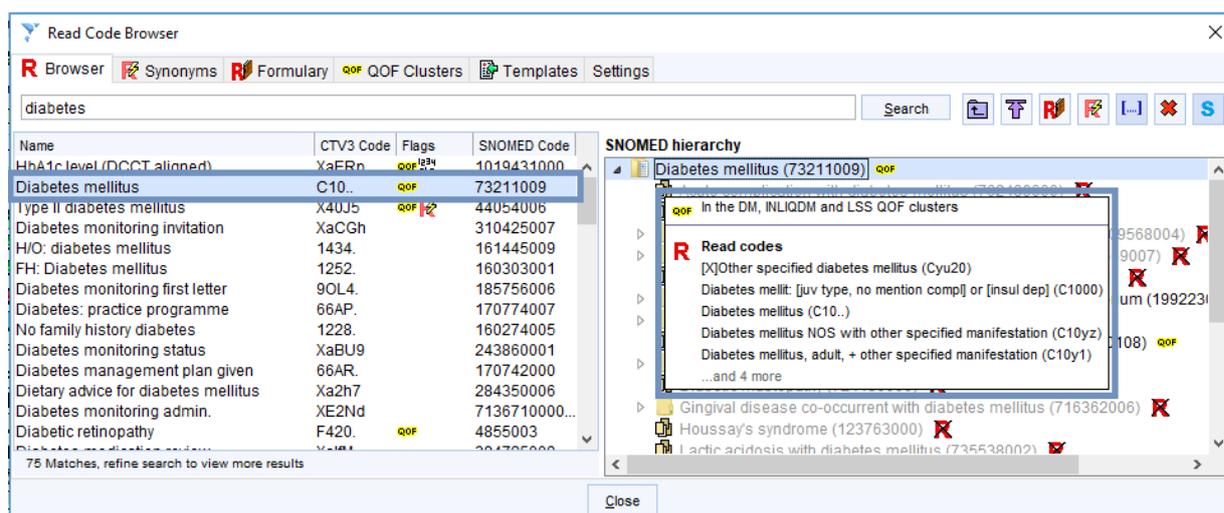
**Fig. 5 SNOMED browser mode:** “Arthropathy” is an example of a code mapped to multiple CTV3 codes.



**Fig. 6 Select Read Code dialog:** Users are prompted to pick which of the 59 mapped CTV3 codes they want to record for “arthropathy”.

The prompt to select a specific code shown in fig. 5 and fig. 6 will only happen in rare circumstances. In most cases, SystmOne will automatically pick a CTV3 code. This will be based on whether the SNOMED code that has been picked is mapped to a CTV3 code with the same description/term.

To illustrate: in the example below, there are 9 codes mapped to the SNOMED code “73211009”, however “C10..” shares the same preferred description as the SNOMED code is it being mapped from. Because both are called “Diabetes mellitus”, SystmOne picks that particular code from the other alternative mappings such as Cyu20 or C10yz.



**Fig. 7 Codes with multiple mappings:** In this example, users would not see a prompt and the system would just pick the CTV3 code with the same description automatically.

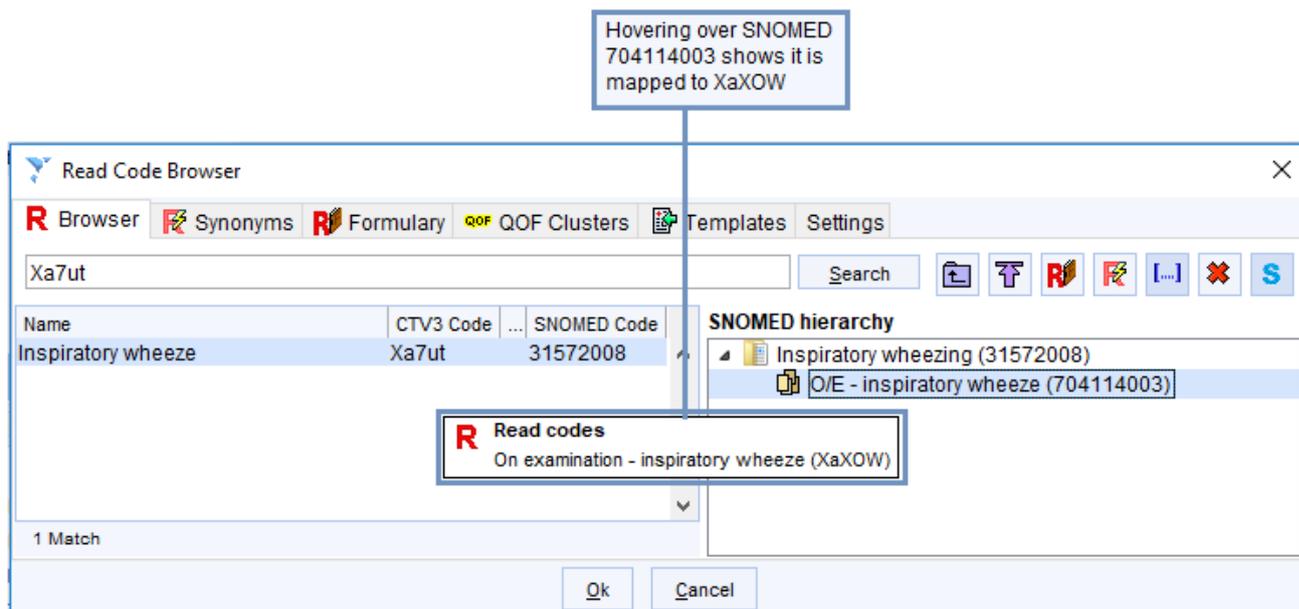
This behaviour is specific only to the read code browser when it is used to pick a code to add to a patient record, e.g. as part of a consultation. Where it is used elsewhere, e.g. to pick codes when building a report or template, the system will always prompt user to pick in the event of multiple mappings from SNOMED to CTV3.

## Clinical Reporting

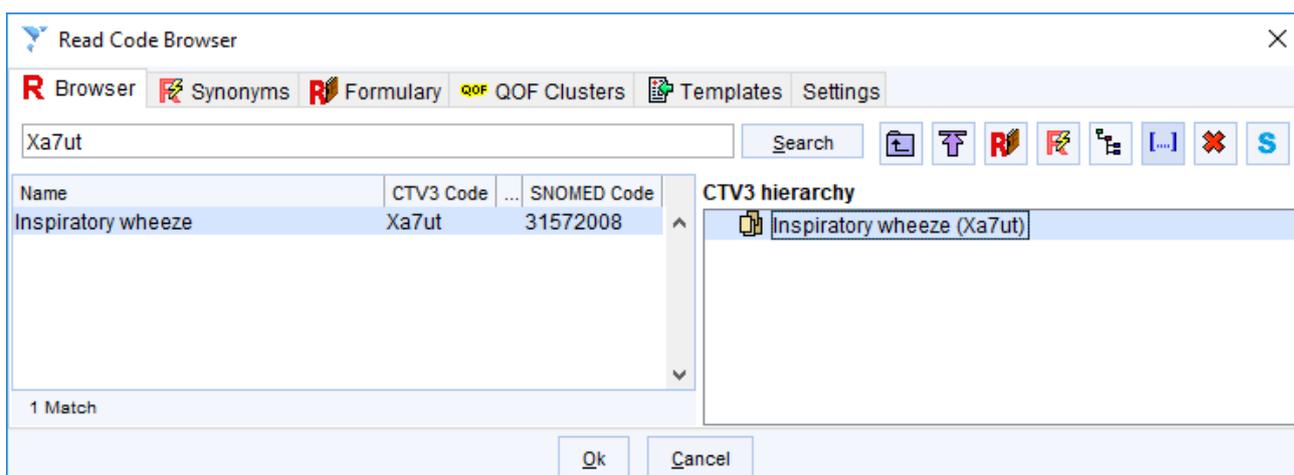
Users of SystmOne have already authored a very large number of clinical reports based on the CTV3 terminology. These reports are often used as part of core functionality in General Practice – for example, in decision support protocols. Reports authored in CTV3 will continue to return the expected results according to the CTV3 code hierarchy after the transition to SNOMED CT.

However, after April 2018 some users may need to author new reports which respect the SNOMED hierarchy of codes. These may include, for example, reports requested by commissioners across a CCG. The code hierarchies within CTV3 and SNOMED CT have some differences – that is to say, a given parent code in CTV3 may have different child codes to the equivalent parent code in SNOMED CT. This means that if a report is built to look for a given CTV3 parent code ‘and all its children’, this would potentially return different results than a report which has been built to look for the equivalent SNOMED CT code ‘and all its children’.

For example, if a patient were to have the CTV3 code “On examination – inspiratory wheeze (XaXOW)” in their record, they **would be found** in a report which looked at “Inspiratory wheezing (31572008)” and its children – i.e. using the SNOMED hierarchy, but **not be found** in a report which looked at “Inspiratory wheeze (Xa7ut)” and its children using the CTV3 hierarchy. This is because XaXOW is mapped to a code which is a child of the code for “inspiratory wheezing” in the SNOMED hierarchy, but it is not a child code of “inspiratory wheezing” in the CTV3 hierarchy.



**Fig. 8 SNOMED hierarchy:** XaXOW is found in the SNOMED report because it is mapped to a SNOMED 704114003, which is a child code of SNOMED 31572008 in the SNOMED hierarchy.



**Fig. 9 CTV3 hierarchy:** XaXOW is not found in the CTV3 report because it is not a child code of Xa7ut (this code has no children within CTV3).

SystemOne users will be able to specify when building reports whether the SNOMED CT code hierarchy is required. This means that clinical reporting functionality will now support creating or amending reports using **either** the CTV3 or the SNOMED hierarchy, as required by the user.

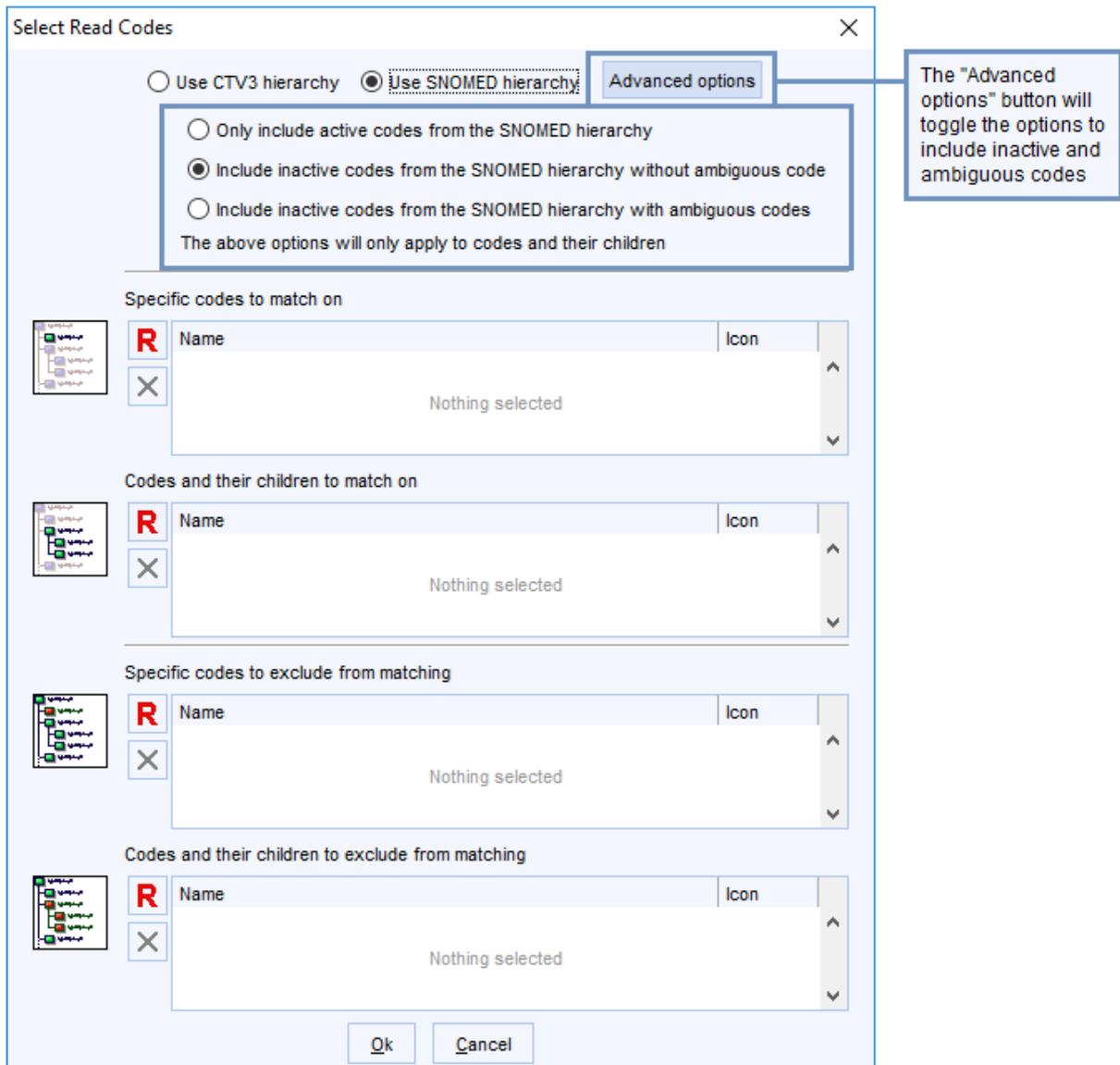


**Fig. 10 Select Read Codes dialog:** The dialog for picking codes to report on will give users the option to use the CTV3 or the SNOMED hierarchy for a particular clinical report.

For reports that use the CTV3 hierarchy, the clinical reporting functionality will work in essentially the same way as it does currently. The only difference is that, when creating a CTV3 based report, users can still select codes using the SNOMED code. If the user does pick a SNOMED code to report on and the SNOMED code has multiple mappings to CTV3, they will have to pick which of the multiple mapped CTV3 codes to include in their report from the “Select Read Codes” dialog (see fig. 6 in the “Code Browser” section above).

### SNOMED hierarchy reports

When configuring a report that uses the SNOMED code hierarchy, users will have additional options, which can be made available and hidden by clicking on the “Advanced options” button at the top-right of the Select Read Codes dialog in clinical reporting:



**Fig. 11 Select Read Codes dialog:** Additional radio buttons are made available by clicking the “Advanced options” button.

### Active, inactive, and ambiguous codes

SNOMED codes can be “**active**” or “**inactive**”. Codes are made inactive when they are no longer recommended for entry into patient records, and a different SNOMED code is recommended for use instead.

Inactive codes are listed in the UKTC Query Tables, which are available from the NHS Digital TRUD website, and can also be found in the NHS Digital [SNOMED Browser](#) within Search by setting the status to *Active and inactive components*. The query tables link inactive SNOMED codes with active SNOMED codes, and this association can take varying degrees of ambiguity. The link between an inactive code which is an exact synonym of an active code will be flagged in the query tables as unambiguous. By contrast if this link is more tenuous, then this will be considered an “ambiguous” relationship.

By default, any report using the SNOMED hierarchy and which looks at “codes and their children” will include inactive codes, but will not include those inactive codes that are ambiguous. Toggling the advanced options will give users the option to toggle between these settings so their report does one of the following:

1. **Only include active codes from the SNOMED hierarchy**

This will **exclude any** inactive SNOMED codes that are linked to the active SNOMED concept(s) chosen to report on.

2. **Include active SNOMED codes and unambiguous inactive codes from the SNOMED hierarchy**

This will only **exclude** inactive codes where the reason they have been made inactive is that the term is **ambiguous**. For example a Read code that refers to ‘foot/ankle’ would be classed as ambiguous.

This will significantly reduce the risk of not returning patients who have had an older code recorded but should still be included in your data set.

3. **Include all active and inactive codes from the SNOMED hierarchy**

This will include **all active and inactive codes**, even where the codes have been made inactive due to ambiguity. This further reduces the risk of missing patients who possibly meet the criteria of the search (known as false negatives). However, it entails a risk of returning patients who should not be included in the data set, so an additional check should be made to identify these (known as false positives).

To take a real example, “**Bacterial sepsis**” (10001005) is an active code to which multiple inactive codes are linked in the query tables. A user will be able to create a SNOMED report that looks at “Bacterial sepsis” and its children, with the following configurations if they use the advanced options:

1. Only include “Bacterial sepsis” (10001005) and its children (active codes only).
2. Include “Bacterial sepsis” (10001005) and its children, **and** any unambiguous inactive codes linked to “Bacterial sepsis” e.g. “Septicemia caused by streptococcus pneumonia” (310668004).
3. Include “Bacterial sepsis” (10001005) and its children, **and** any unambiguous inactive codes linked to “Bacterial sepsis” e.g. “Septicemia caused by streptococcus pneumonia” (310668004), **and** any ambiguous inactive codes linked to “Bacterial sepsis” e.g. “Tetanus neonatorum NOS” (58135100000105).

**Including ambiguous codes for specific active codes**

The above options only apply to codes selected in “codes and their children to match on” and “codes and their children to exclude from matching” in the Select Read Codes dialog – **not** for codes selected in “specific codes to match on” or “specific codes to exclude from matching”.

To create searches that bring back inactive concepts related to a specific code, users can use the “**work out from business rules**” functionality to include any codes in a specification (e.g. business rules for QOF) in their reports, active or otherwise.

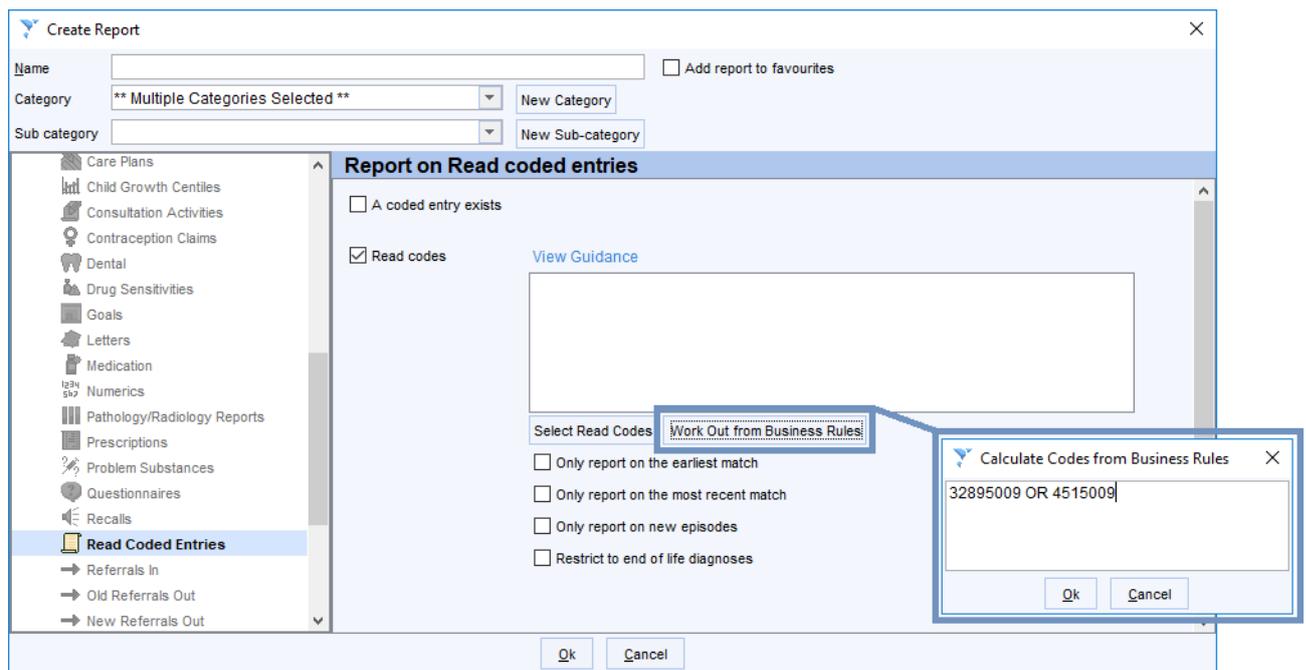
To do so, users will need to use the following operators, as these differ from those used in CTV3 business rules:

ConceptID	just this concept
<ConceptID	the descendants of this concept
<<ConceptID	this concept and all its descendants
^RefsetID	members of refset

<b>Then any of the above preceded by:</b>	
MINUS	exclude concept(s)
OR	include concept(s) OR concept(s)

For more information, see the [Expression Constraint Language specification and guide](#) on the SNOMED confluence site.

The QOF business rules will specify which inactive codes ought to be included, and therefore any report built from the business rules will include these inactive codes when the “work out from business rules” functionality is used.

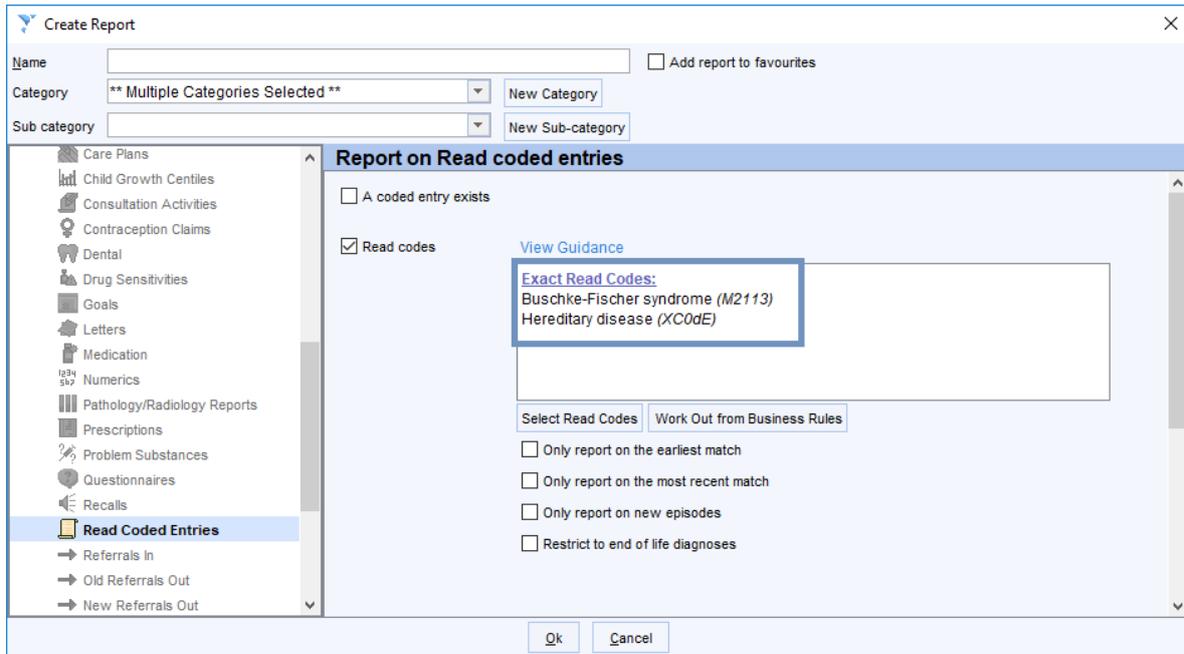


**Fig. 12 Work out from business rules:** Clicking the “work out from business rules” button in clinical reporting opens this dialog, which can be used to specify which codes to report on. This notation means “find patients with either of these specific SNOMED codes recorded”.

For example, if a user wanted to create a report that brought back only the specific SNOMED code “Hereditary disease” (32895009) i.e. not including its children, but they did want to include specific linked inactive codes (ambiguous or unambiguous), they could do this by copying these into the business rules using the appropriate SNOMED notation:

In this example, 32895009 is an active SNOMED code (“Hereditary disease”), which maps to XC0dE (“Hereditary disease”) in CTV3, and 4515009 is an inactive ambiguous SNOMED code (“Keratoderma punctata”), which maps to M2113 (“Buschke-Fischer syndrome”) in CTV3.

Both of these are included in the resulting report when the “work out from business rules” functionality is used:



**Fig. 13 Work out from business rules:** CTV3 codes that map to both the active and inactive SNOMED codes are brought back.

Any reports for extracts such as QOF that have been built by TPP will include the codes that have been specified in the business rules for that extract, including any inactive/ambiguous concepts as appropriate. If needed, users can copy these reports to make their own local versions, or point their own local reports at QOF clusters created by TPP, to be sure that all of the codes they need are being included.

When required by new national specifications, TPP will convert system-wide national reports within SystmOne to run using the SNOMED CT hierarchy of concepts. This includes all QOF reports and QOF data entry templates which are updated annually by TPP, and will continue to be updated in the future.

### Using SNOMED with CTV3

There are some additional features of using SystmOne reports with both SNOMED and CTV3 to note:

- When using the SNOMED hierarchy for parent-child code relationships, users will be restricted to selecting codes from the SNOMED browser to report on (the option to toggle to CTV3 will be greyed out).

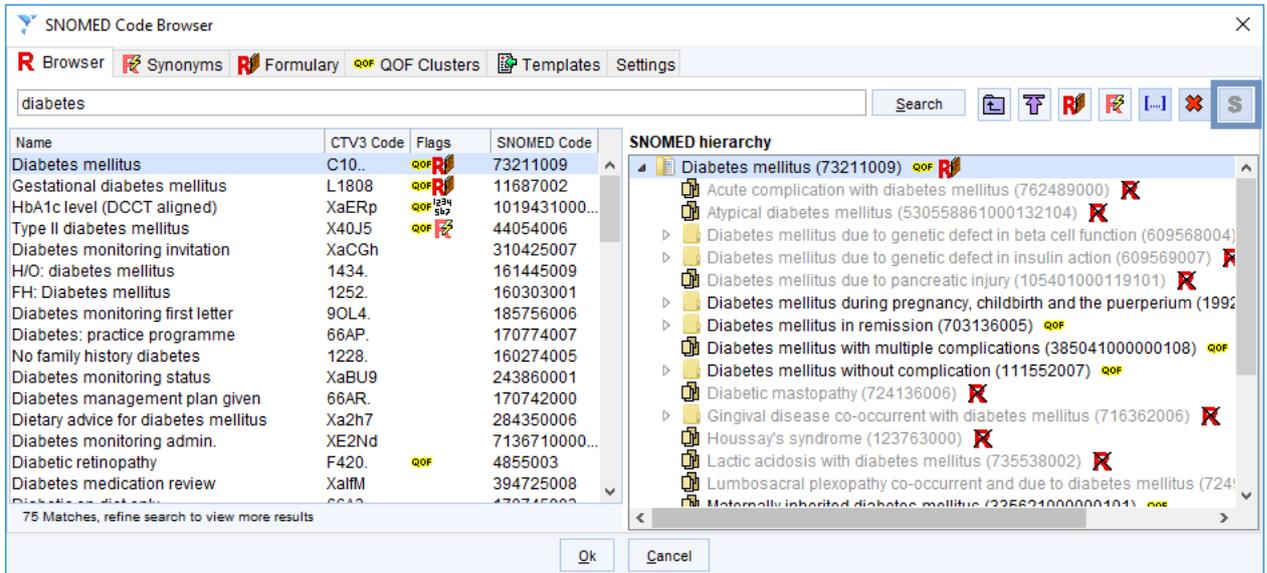


Fig. 14 Using SNOMED hierarchy for reports: The option to toggle to the CTV3 browser will be disabled.

- Building a report using the SNOMED code hierarchy will automatically select all active mapped CTV3 codes in the report.

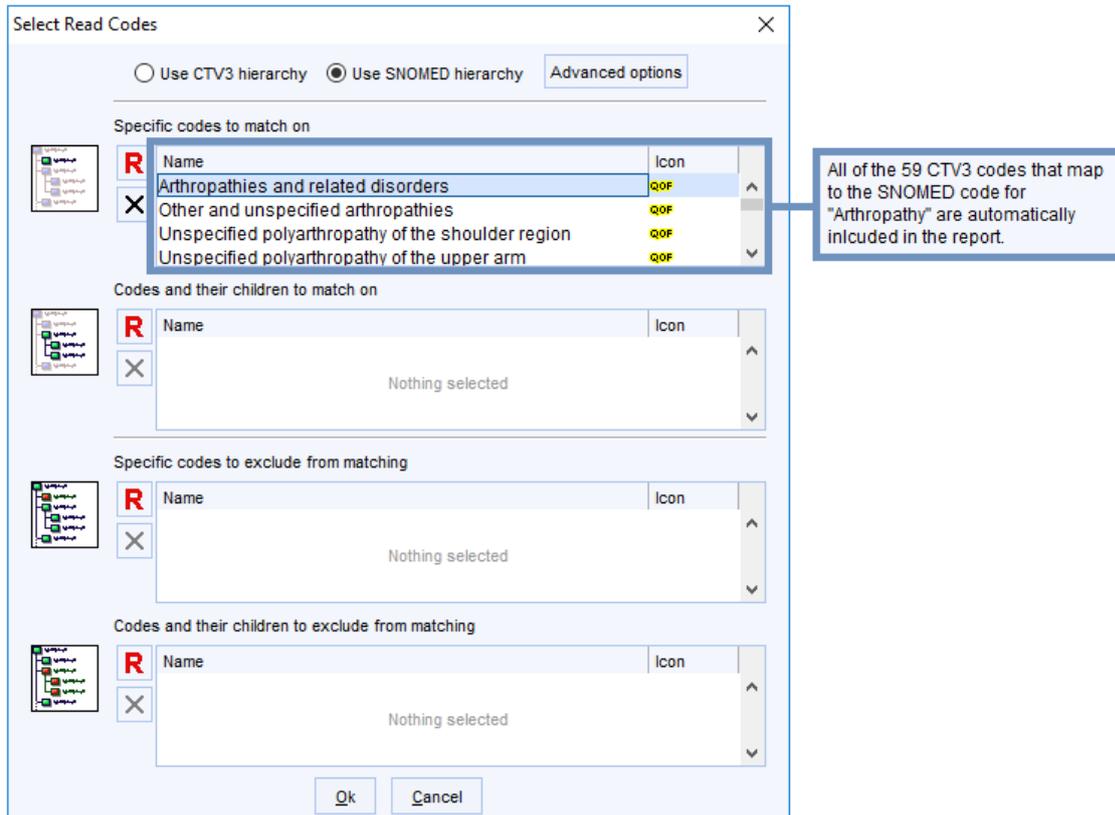


Fig. 15 Using SNOMED hierarchy for reports: All mapped CTV3 codes are picked automatically.

- When changing a report from using the SNOMED hierarchy to using the CTV3 hierarchy, any codes already selected will be cleared. This is because multiple CTV3 codes can map to a single SNOMED code, so users should re-specify which of these should be included/excluded in the report in the code hierarchy they have changed the report to use.
- Similarly, when using the SNOMED hierarchy in a report, choosing to remove **any** of the mapped CTV3 codes picked will remove all of the other mapped CTV3 codes for that particular SNOMED concept. The reason for this is that a given SNOMED concept is equivalent to **all** the CTV3 concepts it is mapped to, so these can't be stratified when reporting on SNOMED codes within SystemOne. In other words, it is not possible to report on only 'part' of a SNOMED CT concept if using the SNOMED CT hierarchy in a report.

Users will always be warned before any of the codes that have been picked are removed when changing between reporting in SNOMED and CTV3.

- When amending a report to change the codes it points at (e.g. to utilise the SNOMED CT hierarchy of codes as opposed to the CTV3 hierarchy), users should consider whether any linked templates/reports/protocols/calculators should also be amended to ensure consistency.
- Clinical reports can now also be broken down by SNOMED concept ID:

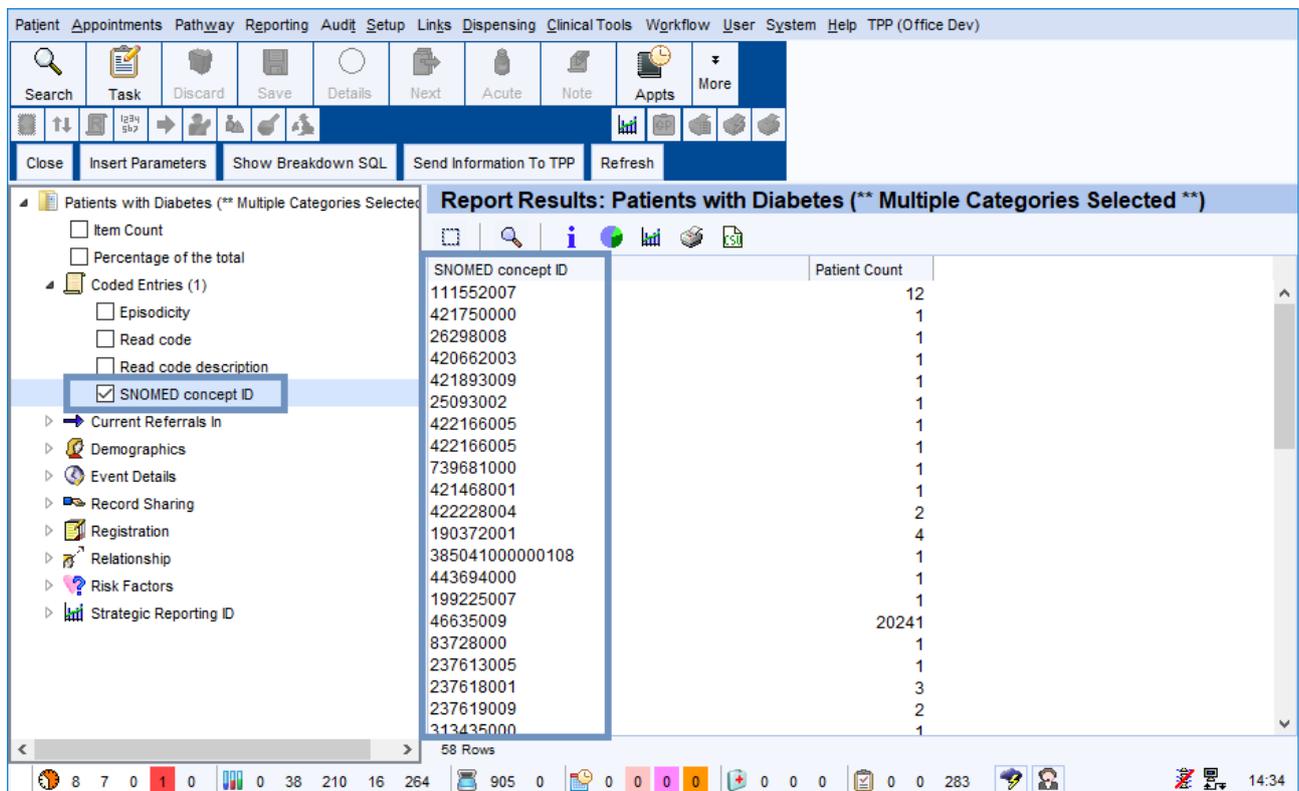


Fig. 16 Clinical report breakdown: A new breakdown option for SNOMED concept ID will be available.

## Data Entry Templates

Users will be able to build new data entry templates or amend existing ones using the new code browser functionality described above. This means, for example, that when users receive a data entry specification in SNOMED CT format only, they can use this browser functionality to search for each SNOMED concept and identify the corresponding CTV3 codes to use (note that users will see the CTV3 codes as well as the SNOMED CT codes these map to). This facilitates the creation of data templates that ensure correctly coded data for audit or risk stratification functions, for example.

In cases where users wish to limit a **Free Read Code Selection** data entry field to a given code and its children, it will be possible to limit the field to the SNOMED CT children as opposed to the CTV3 children (as with Clinical Reporting above).

Configure Template Read Code Box

Read code box label: Diabetic monitoring

Restrict to SNOMED children

Top-level Read codes permitted

Icon	Name	Icon
R	Diabetic monitoring	
R		
X		

Allow back-dating when a Read code is selected

Allow future-dating when a Read code is selected

Put selected Read code into Read Code Journal

Put selected Read code into Summary

Episodicity of Read code (required for some QOF indicators): [Dropdown]

Create problem for this Read code (multiple problems for the same Read code will not be created)

Show amend notes button

Data entry requirement status: No requirement for data entry [Dropdown]

Data entry requirement linked report: [Dropdown]

Requirement status if returned in report: No requirement for data entry [Dropdown]

Amount of component width to use for data entry: 50 %

Component label goes here: [Text Field]

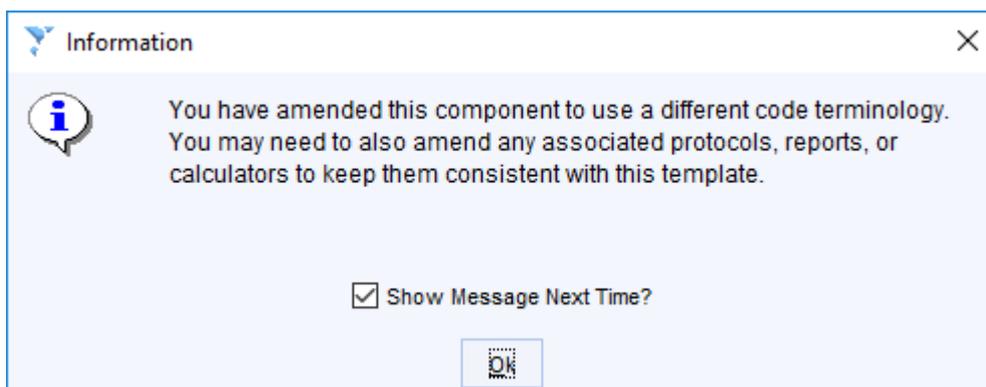
Component data entry field goes here: [Text Field]

Ok Cancel

**Fig. 17 Free Read Code Selection component:** This can now be restricted to SNOMED children.

Where amending a template to change any of the codes used by a component (for example to amend a Free Read Code Selector component to utilise the SNOMED CT hierarchy as opposed to the CTV3 hierarchy) then users should consider whether any linked reports/protocols/calculators should also be amended to make them consistent with each other.

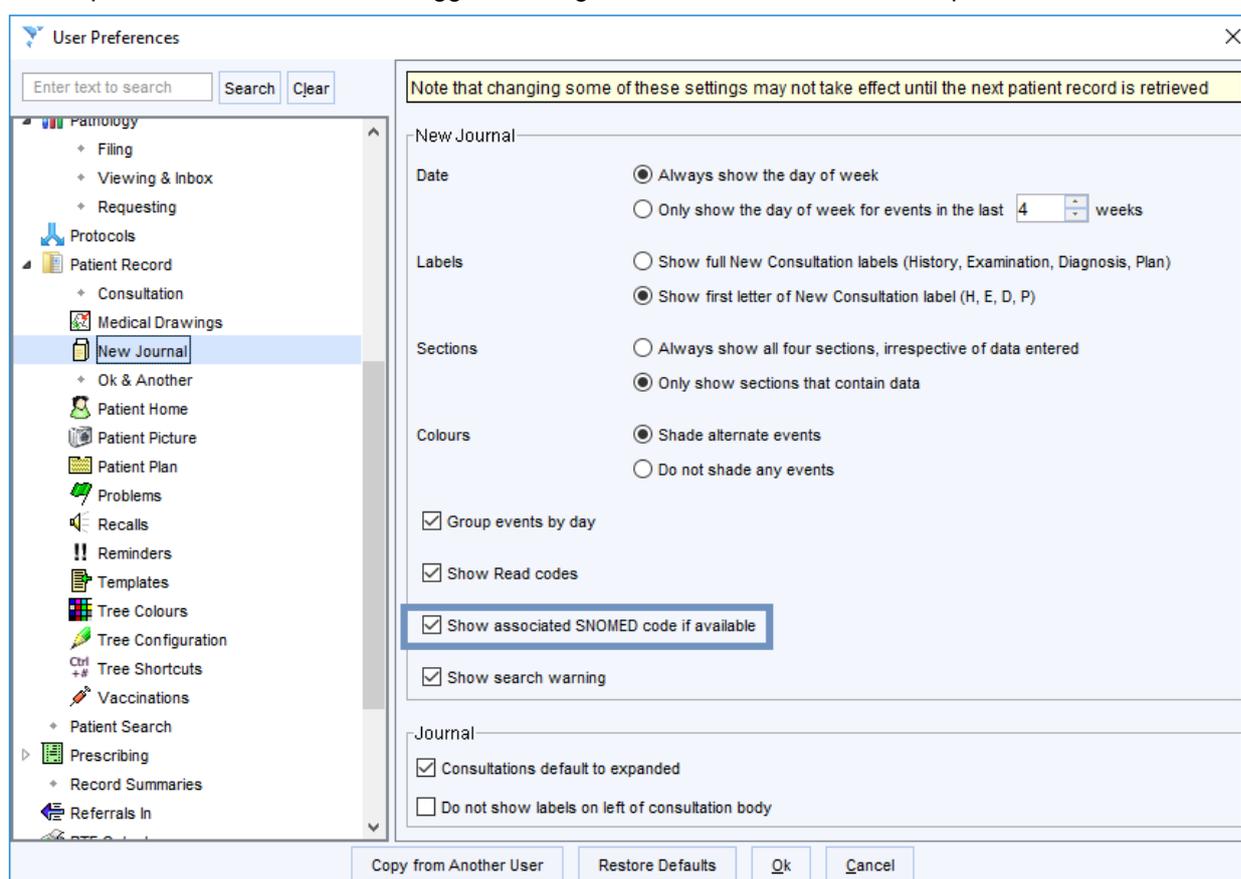
For example, a linked report looking for “diabetes” and its children in CTV3 may need to be updated to use a SNOMED hierarchy diabetes code.



**Fig. 18 Changing a component to use a different terminology:** A reminder message will appear to prompt users to update any associated protocols, reports or calculators.

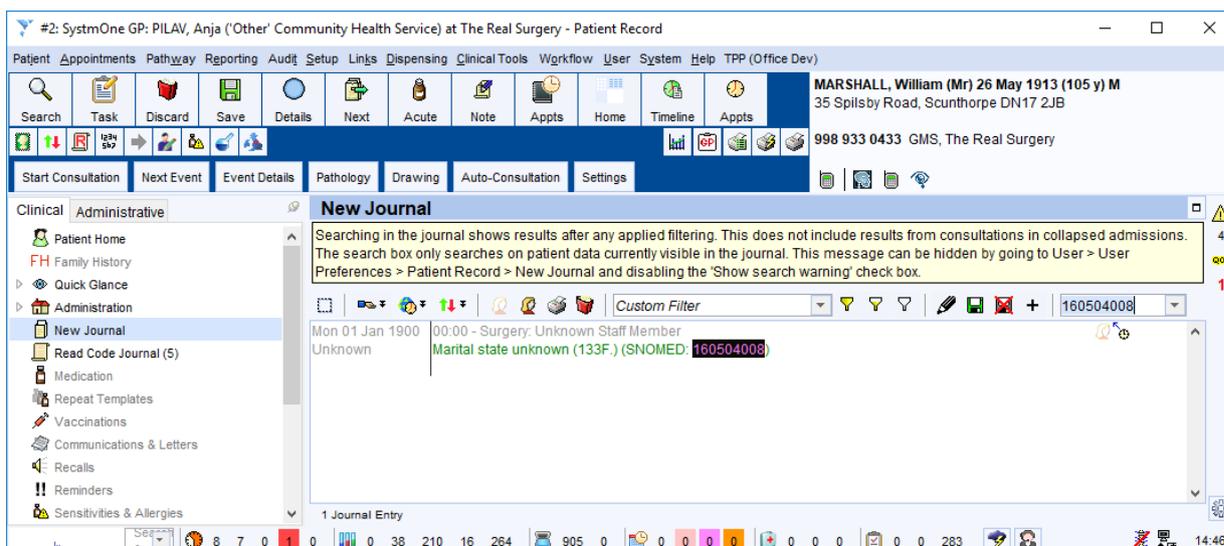
## Patient Journal

It will be possible to view the mapped SNOMED CT Concept ID for any CTV3 codes in the **New Journal** or the **Tabbed Journal** nodes within the patient record. Users will need to have enabled showing codes in the journal via the right-click option. Users will be able to toggle showing SNOMED on or off via a user preference:



**Fig. 19 User preferences:** The option to switch on/off showing mapped codes in the Journal is under Patient Record > New Journal.

Showing SNOMED codes in the journal will also allow users to search for this text using the search box in the journal node:



**Fig. 20 Journal node with CTV3 and SNOMED codes included:** This will allow users to search on SNOMED or CTV3 codes or descriptions.

## QOF

TPP will produce QOF reports for 2017/18 using the business rules specified in CTV3. From 2018/19, QOF will be produced from business rules in SNOMED CT provided by NHS Digital.

TPP will make any new codes in scope of QOF for which there isn't already a suitable alternative available to users. These will be created as Y-codes if there isn't a corresponding code in CTV3 and the term text will be identical; users will be able to find these from the browser by searching on the Y-code or term, or SNOMED CT code or term. QOF clusters of codes will also be updated by TPP to utilise the SNOMED hierarchy of terms - there is no action required on the part of users with respect to the standard QOF reports in SystmOne.

SystmOne's 'How Am I Driving?' functionality will be unaffected by the SNOMED changes.

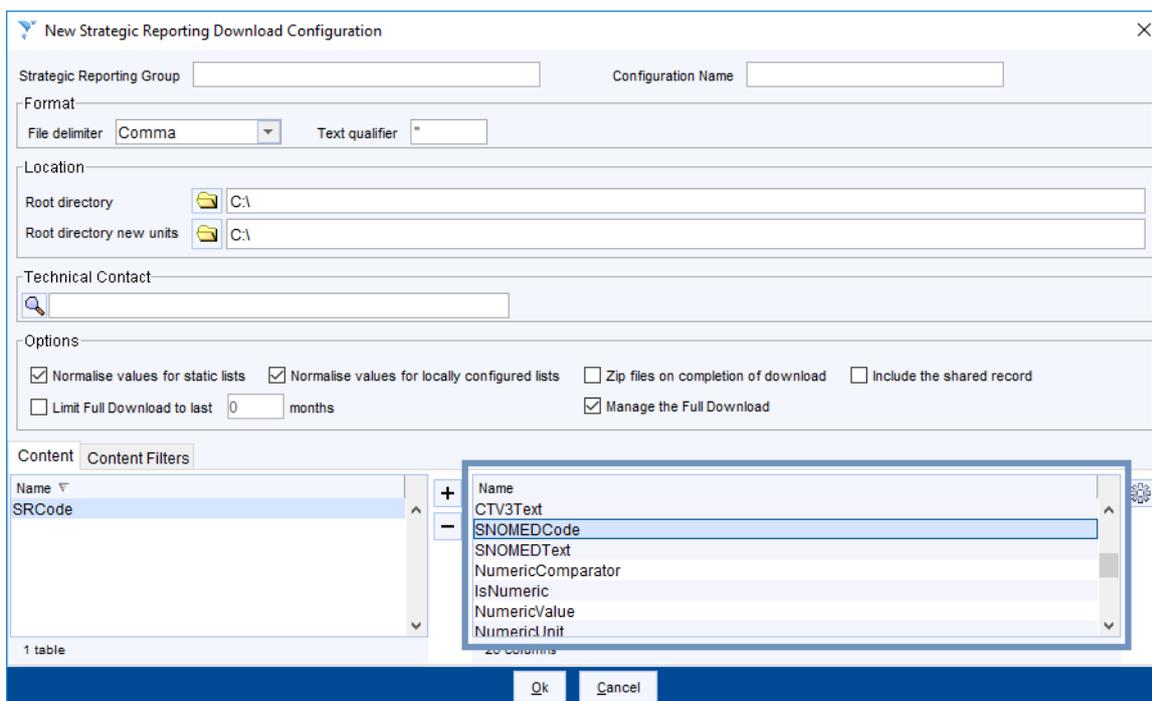
## National data extracts

There are several national data extracts produced by SystmOne which General Practice users are required to submit – for example, the FGM dataset and the National Diabetes Audit. Since April 2018 it is a requirement that these extracts are exported using SNOMED CT coding. TPP will re-author and run these reports in SNOMED CT to comply with the new SNOMED CT specifications for these reports. As with QOF reports, users do not need to take any action towards implementing these changes.

## Strategic Reporting

Similarly, Strategic Reporting functionality within SystmOne will be expanded to allow for the export of SNOMED CT codes. For example, SystmOne will be able to export data across a CCG in SNOMED CT format to support risk stratification. However, users can continue to receive Strategic Reporting extracts in CTV3 format, if required.

Mappings will be maintained between SNOMED CT codes that do not map to CTV3 codes and the Y-codes created to represent them; these can be exported either as SNOMED codes or as Y-codes.



**Fig. 21 Strategic Reporting:** Users will be able to add “SNOMEDCode” and “SNOMEDText” to the SRCode table within Strategic Reporting.

## MIQUEST

MIQUEST is not compatible with SNOMED CT and NHS Digital has announced that no future development work will be undertaken to achieve this. TPP advises that all organisations should transition away from MIQUEST. To achieve this on SystemOne, TPP recommends that users transition to the Strategic Reporting Extract instead. This extract constitutes a broader data set than that available via MIQUEST queries and so covers all existing MIQUEST audit and report functions. However, MIQUEST functionality will remain available to users in SystemOne.

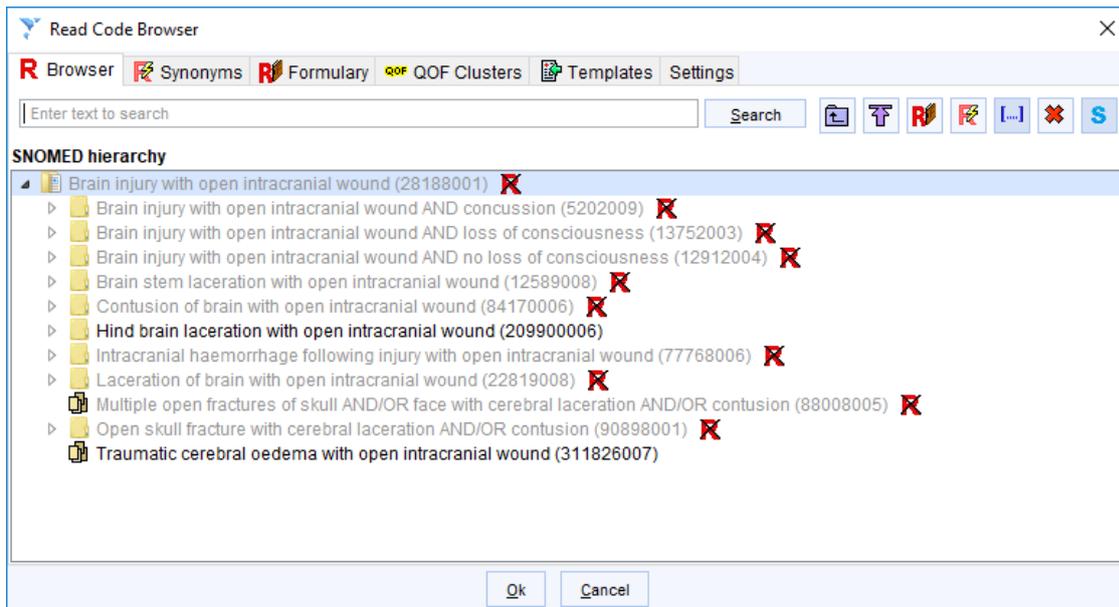
## GP2GP

Data received in SNOMED CT as part of a GP2GP transfer that is mapped to either a CTV3 or a local Y-code will behave like any natively entered code in SystemOne.

In any circumstances where the data received does not have an associated CTV3 or Y-code mapping – for example, codes local to other systems (their equivalent of ‘Y-codes’) or SNOMED CT codes outside of Primary Care usage – the information will be visible to users as a degraded entry, and will not be available to be reported on. TPP will monitor the frequency of codes degraded in this way, and will create Y-codes with associated SNOMED CT mappings to represent the SNOMED concept if necessary.

TPP are also developing functionality that will retrospectively replace SNOMED degraded entries with the Y-codes that are created to represent an unmapped SNOMED concept.

When replacing a degraded entry with a SNOMED CT or CTV3 code, SystemOne will take users to the relevant place in the SNOMED hierarchy with the unmapped code selected, to make it easier for them to pick a related code.



**Fig. 22 Code browser:** Replacing a valid unmapped SNOMED degraded entry launches the browser with the unmapped SNOMED code selected in the browser.

However, the information will be propagated on to other systems in a structured format e.g. if the patient then moves to a non-SystemOne practice and their record is transferred out, the information will be sent as the original SNOMED code rather than as text. If desired, users can manually choose to record an alternative code which does have a mapping at the point of receiving the incoming transfer. This code would then be reportable.

When producing a GP2GP transfer file, SystemOne will output all data in both SNOMED CT and CTV3 i.e. CTV3 will be the primary code output, with SNOMED CT included as a translation.

## Prescribing Decision Support

TPP has agreed with First Databank that prescribing decision support functionality will be exactly maintained during the move to SNOMED CT. Similarly, all Clinical Tools functionality, such as QRISK2 or the Electronic Frailty Index, will be unaffected by this work.

## APIs

### Client API

Many applications of the SystemOne client-side API rely on CTV3 coding in order to function correctly. This includes, for example, the integration of blood pressure machines in General Practice. These integrations have been developed by third-party providers, some of which may not have the capacity or ability to make rapid changes to their implementation to support SNOMED CT. It is, however, essential that such devices continue to work in General Practice and across all other care settings where SystemOne is used.

For this reason, TPP is committed to ensuring that these integrations can still operate by receiving and sending CTV3 codes. TPP will continue to accept and export data via existing client-side APIs in CTV3, though this may be reviewed in the future. If any changes are to be made, TPP will inform users at least 12 months in advance of when CTV3 coding will no longer be supported by these APIs. This is likely to be sometime shortly after 1st April 2020, when the wider SNOMED CT programme for the NHS is rolled out.

The Client API also supports sending and receiving data in SNOMED CT. Data sent from SystemOne via the Client API in SNOMED will use concept IDs only, however SystemOne will also support description IDs in incoming data.

### **Strategic Reporting**

TPP's Strategic Reporting extract is sometimes referred to as the 'Bulk Extract API', and this will support both CTV3 and SNOMED coding. See the "Strategic Reporting" section above for more information.

Note that any integration partners who wish to transition to SNOMED CT for API applications before then can make use of the NHS Digital mapping tables in their products. This will ensure that the correct SNOMED CT and CTV3 codes are processed as part of the integration. The mapping tables can be found on the NHS Digital terminology distribution site - <https://isd.digital.nhs.uk/>.

### **GP Connect**

Any integrations undertaken as part of the GP Connect programme will transfer data in SNOMED CT format.

# Frequently Asked Questions

## ***Why is this change being made?***

NHS Digital has provided various materials relating to the underlying reasoning behind the transition and the benefits that SNOMED CT can bring. These can be found on the [NHS Digital website](#).

## ***Do I have to do anything, and if so, what?***

Users will not need to do anything as a result of TPP's changes to the system. Some users may need to author new reports which respect the SNOMED hierarchy of codes due to updated local requirements - for example, reports requested by commissioners across a CCG. Please see the 'Clinical Reporting' section above for more information.

## ***How will I know the change has been made?***

Users will notice very little difference to functionality that exists already in SystmOne.

Users will however be able to search the SystmOne code browser using a SNOMED CT Concept ID or a CTV3 code or term. This will return the CTV3 code (or codes) and term to which the SNOMED CT code is mapped. There will also be additional functionality allowing users to build reports that use the SNOMED CT hierarchy instead of the CTV3 code hierarchy.

TPP will provide notice to all users via SystmOne in advance of and after the changes have been made available.

## ***What difference will it make to the way I enter data in the future (both coded and uncoded)?***

Data will still be entered in the same way, whether coded or uncoded (for example, using data entry templates, the code browser, or through protocols).

## ***How will I select codes – do I have to learn SNOMED terminology, or can I rely on the system to do all the 'translating' behind the scenes?***

Unless you need to specifically record, or report on, data based on rules written using SNOMED CT codes, there will be no change in the processes that you need to follow.

If you do need to record a specific SNOMED code, or report on a specific set of SNOMED codes, SystmOne will allow you to do this via the enhancements made to the code browser and to clinical reporting.

## ***Will historical data still be saved in CTV3 format, or will it automatically be changed across to the equivalent SNOMED code?***

Both historical coded information and coded information recorded going forward will remain in CTV3 format in SystmOne. The system will have the ability to map this data to the equivalent SNOMED CT codes for onward propagation and reporting.

## ***Can I rely on the changes having been made accurately?***

The cross mapping tables have been clinically assured by an Expert Reference Group (ERG) set up by NHS Digital. Please see the UKTC Primary Care Refsets document for more detail on the methodology used to assure the cross mapping tables.

GPES extracts, and changes to the browser, clinical reporting, and GP2GP transfer functionality will be subject to an assurance process by NHS Digital before being made available to frontend users.

### ***Do I have to do anything different when creating a new template or report?***

Users will be able to build new data entry templates and reports – or amend existing ones – by searching for and selecting codes in CTV3 or SNOMED CT format using the code browser.

If users receive a data entry specification in SNOMED CT format only, they can use this browser functionality to search for SNOMED concepts and pick the corresponding CTV3 codes to use.

Clinical reporting functionality within SystemOne will allow users to pick whether the report being created or amended should run on codes in the SNOMED CT or CTV3 hierarchy when specifying parent codes to run on, as required.

### ***Can I use the old templates and reports that I have written myself – do these need to be altered in any way?***

All existing reports will bring back patients based on the same codes as before. Furthermore, if one of these codes is mapped to a SNOMED code and the SNOMED code is used in a patient record, this will also include that patient in the report.

If there is a specific requirement for existing local reports or templates to use the SNOMED rather than the CTV3 hierarchy, these can be amended using the enhancements described above.

### ***Is document management (scanning) affected by this?***

No - scanning rules will remain linked to CTV3 codes – the only difference is that the end user will have the ability to search the enhanced browser when creating/amending new rules.

### ***What about the automatic warnings, protocols etc. already configured? Will I have to rework these?***

Coded information in SystemOne will remain in CTV3, and any protocols or automatic warnings such as status alerts that already exist will continue to trigger in the same circumstances as before.

Going forward, if a SNOMED code mapped to a CTV3 code that would trigger the warning is used, this will also trigger the warning. If there is a specific local requirement for warnings to use the SNOMED rather than the CTV3 hierarchy, the reports behind these will need to be amended.

### ***What about importing records under GP2GP?***

Data received in SNOMED CT as part of a GP2GP transfer will be retained by the system for the purpose of onward propagation and mapped to the corresponding CTV3 or Y-code in SystemOne. In any circumstances where the data received does not have an associated CTV3 or Y-code mapping, the information will be visible to users as a degraded entry.

### ***What's going to happen with my electronic ECG etc.? Will it still be plug and play, or do I have to notify either TPP or my third-party supplier?***

TPP is committed to ensuring that these integrations can still operate by receiving and sending CTV3 codes. TPP will continue to accept and export data via existing client-side APIs in CTV3 after April 2018. We will also be doing some work to allow integrations through the client-side APIs to send and receive data in SNOMED after the initial pilot.