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SNOMED CT implementation in Primary Care

Guidance for Implementing SNOMED CT into the UI of an Electronic Healthcare System

Document Management

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Reviewers

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Denise Downs	Implementation and Education Lead	15/12/2016	1.0
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Denise Downs		Implementation and Education Lead	15/12/2016	1.0
Jon Calpin		Programme Manager – SNOMED CT	15/12/2016	1.0

Glossary of Terms

Term / Abbreviation	What it stands for
GPSoC	GP Systems of Choice
Read Codes	The Read codes include Read v2 and Read v3 (also known as CTV3)
TRUD	Technology Reference Data Update Distribution: https://isd.hscic.gov.uk/trud3/
SNOMED CT	SNOMED CT(a Clinical Terminology) is the SCCI approved standard for clinical terminology within the NHS; SNOMED CT is required to be used for communicating clinical content across health and care to support direct management of care.
UI	User Interface
UKTC	UK Terminology Centre : Manages and develops SNOMED CT within the UK

Terms, acronyms and abbreviations commonly used within NHS Digital can be found in the Glossary of Terms

<http://systems.digital.nhs.uk/infogov/security/infrasec/nhspki/glossary>

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1 Introduction

1.1 Purpose

This document presents guidance for how SNOMED CT can be presented to the end user for selecting the required terms within the application that is using SNOMED CT as its clinical terminology for data items. Consideration has been given to the usability and clinical safety of systems using SNOMED CT in developing this guidance.

1.2 Existing CUI Guidance

Documents exist that provide guidance on searching, matching and displaying of clinical terms in a user interface, and these are referenced later in the document.

This document does not replace existing user interface (UI) guidance and should be seen as an accompaniment.

There is overlap in the topics presented in this document and existing CUI guidance documents; this document provides a summary of that information into a single document and includes feedback from secondary care users. Information is presented as a guide to software vendors wanting to include SNOMED CT into the design of their healthcare systems.

1.3 Background

An electronic healthcare system allows the clinician to record clinical data about the patient using a clinical terminology; in England that is mandated to be SNOMED CT.

As suppliers move from Read codes to SNOMED CT, it is important that the system does not impact on the clinician's primary task (patient interaction), and that selecting SNOMED CT terms is as routine as selecting a Read term.

This document aims to provide a set of guidelines that, when implemented into the user interface design of a Clinical Systems, will enable the efficient selection of SNOMED CT terms.

1.4 Audience

The intended audience for this document are primary care software providers but may include anyone interested in the implementation of SNOMED CT in healthcare systems.

1.5 Providing Feedback

This document is a step to defining a set of SNOMED CT implementation guidelines. By sharing views and opinions, the guidance in this document can be matured.

If you have comments or feedback on any part of this document, please send them to the snomedprimarycare@nhs.net. All comments will be confidential unless permission is given to share.

1.6 Source of guidance

The following sources were used to create the list of draft guidelines.

- Discussions with UK Terminology Centre SNOMED CT subject matter experts.
- Short usability reviews of healthcare systems that use a clinical terminology.
- Reference to clinical reference terminology implementation literature (see References section of this document).
- Existing HSCIC guidance and standards in the area of coding and clinical terminology (see References section of this document).

1.7 Scope

The following list forms the scope of this work.

- **Electronic Healthcare Record** - use of SNOMED CT within the context of an electronic healthcare system record on a desktop or laptop computer.
- **Primary Care** - whilst it is the case that many NHS Primary Care systems already use some form of clinical terminology, they do not all work in the same way and none currently use SNOMED CT in their implementation.
- **Usability & safety** - the guidance focuses on the usability and safety aspects of implementing SNOMED CT functionality.

1.7.1 Out of Scope

The following are not within the scope of this work.

- **Browsers** – implementing SNOMED CT into a standalone browser.
- **Electronic Healthcare Record** - use of SNOMED CT within the context of an electronic healthcare system accessed on a small mobile device where the available real estate does not support these requirements.
- **Non-Text entry search** - the guidance does not cover other possible, non-text entry search mechanisms, such as selecting SNOMED CT terms directly from a pre-defined pick-list.
- **Technical implementation** - the guidance does not cover the technical aspects of implementing SNOMED CT into an electronic healthcare system.

1.8 Assumptions

The guidance in this document is subject to the following assumptions.

- **Large number of SNOMED CT terms** – it is assumed that the search process occurs across a large number of possible SNOMED CT terms. The UK GP subset will contain many thousands of codes.
- **User with Limited Experience in Clinical Data Selection and Input** – it is assumed the system will be designed for a clinical user with limited knowledge of SNOMED CT.

1.9 Data entry of terms

For this document, data entry is taken to cover the processes of searching, matching, displaying, browsing, refining and selecting SNOMED CT descriptions. This typically involves a clinician entering a few characters of the term they want to find, triggering the search, browsing the matched results and then selecting one of the results.

In general, the characteristics that make up an “ideal” data entry experience will include some or all of the following:

- The clinician intuitively knows how to enter a clinical term.
- When typing the first few letters of each search word a manageable number of results are produced.
- The number of results should be small enough for the user to review quickly and to find things easily.
- The results list should include the term that the clinician is seeking to record (provided that a match exists within the terminology).
- The most likely results should be towards, or at the top of, the results list.
- The ordering or grouping of the results list should reflect the user’s expectations and needs.
- The results list should have high specificity (i.e. present all the expected results). It should also have a low false-positive rate (i.e. few, if any duplicate or inactive terms).
- The time taken to generate and display the results list must be fit for the intended purpose, so in a clinical setting should be less than 3 seconds.
- Each term displayed in the results list contains enough detail to display it clearly and unambiguously. It could not be mistaken for another, similar term.

Creating a system that provides the clinician with an effective and intuitive UI is important. An ineffective system can leave clinicians uncertain as to how they need to perform the search. Searches can be slow and unresponsive leaving the clinician wondering if anything is happening. Result tables can list hundreds of results, often in a random order. This document attempts to address these types of usability problems and to produce a list of requirements as guidance that strives towards the ideal characteristics for a good end user experience.

2 Guidance Details

Below outlines aspects that should be noted when considering this guidance.

- Several of the requirements listed are purely a statement of the requirement, they do not provide a solution on how that requirement should be solved or implemented in a system.
- This guidance has not been subjected to a formal patient safety assessment.

3 Requirements guidance

This section presents the list of UI requirements provided as guidance for implementing SNOMED CT in a usable way into an electronic healthcare system.

3.1 SNOMED CT Data and Context

Req ID	Requirement Text
SCT-001	<p><u>Do not require nor allow the user to choose the clinical terminology</u> The clinical terminology should be automatically set – the user should not be asked or offered to choose a different one</p>
SCT-002	<p><u>Exclude inappropriate content</u> Certain terms should not be browsable or selectable in any clinical context as the primary code to record a clinical finding or procedure. Examples of SNOMED CT terms (except in a post-coordinating context) that should be excluded:</p> <p> Navigational terms - (e.g. Poisoning / Injury) Organisms - (e.g. Salmonella) SNOMED Attributes - (e.g. Cuff deflated) Record artefacts - (e.g. Kick chart) Physical forces - (e.g. High temperature) Action qualifiers - (e.g. Cryosurgery) Terms within UKTC former limited status subset</p> <p>Only appropriate SNOMED CT hierarchial terms should be available. Suppressing top level hierarchical terms from appearing for selection - including when no user configurable contextual filters are applied - is very strongly recommended.</p>
SCT-003	<p><u>Exclude inactive descriptions</u> Those SNOMED CT descriptions that are inactive should not be browsable or selectable by the user when picking codes. System to allow the user to visualise inactive codes only under certain circumstance e.g. reports.</p>

Req ID	Requirement Text
SCT-004	<p><u>Present only SNOMED CT descriptions relevant to context</u></p> <p>System to only include those SNOMED CT descriptions that are relevant to the clinician’s current context of work. Avoiding irrelevant descriptions will help reduce the workload on the clinician and make it easier to find the desired term.</p> <p>The context setting should be done automatically by the system when it is clear that the items for a particular field should be restricted e.g. A field for procedures. Context setting to be set on factors such as clinical specialities, healthcare provider (e.g. <i>consultant or GP</i>), and corporate requirements where different clinical practices may have different requirements for clinical data input and selection.</p>
SCT-005	<p><u>Use plain English in the user interface</u></p> <p>System to not use SNOMED CT concept model words or phrases in the user interface. Most users will not be familiar with this and won’t necessarily understand it. The following are examples of SNOMED CT words or phrases that most users will not understand e.g.</p> <ul style="list-style-type: none"> • Preferred term • Synonym • Concept ID • Concept • Fully specified name
SCT-006	<p><u>Use only UK English language SNOMED CT descriptions</u></p> <p>The results list should only display UK English SNOMED CT descriptions. An exception to this is to allow American terms when an American term is available and a UK one is not for a particular concept.</p> <p>As part of the UK release is a Realm Description refset; this provides the UK acceptable descriptions in a single language refset and it is recommended this is used. A guide is provided on the NHS Networks SNOMED CT network, within the Resource Library.</p>
SCT-007	<p><u>Ensure it is clear which text entry fields are for data input</u></p> <p>System to clearly distinguish in the user interface between those fields which are for SNOMED CT data input and those which are not (e.g. normal text entry fields). The SNOMED CT search entry field should be placed where the user can easily find it.</p> <p>If users recognise in advance that a field is designated for SNOMED CT data, they can modify their typing behaviour accordingly.</p>

Req ID	Requirement Text
SCT-008	<p><u>Ensure easy search triggering</u> As well as displaying a button next to the text entry field, ensure that the search can be triggered by the user pressing the <enter> key. The button should have a meaningful label e.g. 'search', 'find', 'go'.</p>
SCT-09	<p><u>Ensure that the text entry field can hold sufficient characters</u> The text entry field should be able to display 60 characters and hold up to 255 characters in total. If the user types beyond the 60 character visible limit, the field scrolls from left-to-right (but without a scroll bar), in order to ensure that the last character that the user has typed is visible.</p> <p>The user should be able to direct the cursor to the beginning of the search string by using the keyboard.</p>
SCT-010	<p><u>Three character minimum</u> The search to only be triggered after the user has entered a minimum of three valid characters in the search term. These characters to not be whitespace or blank characters.</p>
SCT-011	<p><u>Allow the entry of single or multiple search tokens</u> The user to be able to enter either single (e.g. diab) or multiple (e.g. com acq pneu) search tokens.</p>
SCT-012	<p><u>Search token order independent</u> The users to be able to enter search tokens in any order (e.g. fract ankle and ankle fract) and return the same results).</p>
SCT-013	<p><u>Do not require the user to enter wildcard characters to enable partial matching</u> The user to not have to add any wildcard characters or symbols to the search string to denote partial matching. Partial matching should be enabled by default.</p>
SCT-014	<p><u>Offer case-insensitivity</u> The system to not require the user to have to apply capitals or lower-case letters to search terms.</p>
SCT-015	<p><u>Searching by SNOMED CT code</u> System to provide the ability for users to search by SNOMED CT code.</p>
SCT-016	<p><u>Copy and Paste</u> System to allow the user to copy and then paste text into the search field or Description id or Concept ID(for example from a guidance document).</p>
SCT-017	<p><u>System to manage International characters</u> System to convert international characters to English equivalent. Where a search term is entered for example Sjög in order to locate the SNOMED CT concept Sjögren-Larsson syndrome (disorder), system to recognise ö as o and present the user with Sjogren Larsson syndrome</p>
SCT-018	<p><u>Allow replacing of foreign characters with English ones</u> Users to also be able to search without having to enter foreign characters where a SNOMED CT description contains them.</p>
SCT-019	<p><u>Handle entered superscript and subscript characters</u> The system to be able to recognise and return results where the user types in or copy & pastes superscript or subscript characters in their search term.</p>

Req ID	Requirement Text
SCT-020	<p><u>Provide progressive matching (performance permitting)</u> Progressive matching (where results are returned for each successive character that the user types in) to be provided where it does not impact performance</p>
SCT-021	<p><u>Provide auto-completion as a user option</u> Auto-completion offers suggestions to finish the words being typed in by the user. In some cases it can improve the user experience of searching by reducing the number of keystrokes a user has to make and to help reassure them that the system “understands” their intentions.</p> <p>Where this feature is offered it is recommended that it is possible for the user to switch this off if this is not their preferred approach.</p>
SCT-022	<p><u>Multiple search options</u> If additional search options are provided, these to be offered as an advanced function. These can be made available through various techniques such as function keys and on-screen icons; and should be consistent with the general UI approach in the application.</p>
SCT-023	<p><u>Provide favourites and frequently used terms</u> System to provide commonly used SNOMED CT descriptions.</p> <p>These may include:</p> <ul style="list-style-type: none"> • Terms chosen by the user (eg. highlighting a term is a favourite) • Frequently used terms • Recently used terms • Local Department / Specialty terms provided at configuration • Conduit terms - a term that acts as a link to a collections of other terms (e.g. the term “eczema” could provide the user with a list of all SNOMED CT eczema terms)
SCT-024	<p><u>Where multiple search terms are entered apply the AND operator</u> When multiple search terms are entered (e.g. prod cough) the system to match terms that contain both tokens prod and cough. System to not return results for each of the single tokens.</p>
SCT-025	<p><u>Use STARTS WITH matching for each search token</u> System to return results that match with the <i>start with</i> entered search token.</p> <p>For example, when pneu is entered the system to search for terms starting with pneu and not terms that contain or end with pneu.</p>

Req ID	Requirement Text
SCT-026	<p data-bbox="357 232 1402 271"><u>Matching and search results</u></p> <p data-bbox="357 338 1402 376">Option 1 Return <u>all</u> lexically matching concept descriptions</p> <p data-bbox="357 409 1402 551">All returned results to be SNOMED CT concept descriptions that lexically match the entered search term. For example, if urinary infection is entered then all concept descriptions containing terms starting with urinary and infection will be returned as a matched result.</p> <p data-bbox="357 584 1402 689">This means that several descriptions for a single concept could be returned in the results list significantly increasing the number of results returned. E.g. acu sin could return the following:</p> <ul data-bbox="411 723 919 875" style="list-style-type: none">• Acute sinusitis• Acute inflammation of sinus• Acute inflammation of nasal sinus• Acute infection of sinus <p data-bbox="357 875 1402 981">The system could assist the user experience by highlighting (for example through colour) those descriptions of the same concept if the user selects one description.</p> <p data-bbox="357 1014 1402 1088">Option 2 Return one description per unique concept where that concept has at least one lexically matching description</p> <p data-bbox="357 1122 1402 1196">In this option, one result per unique single concept is displayed. The result Description may be one of the following:-</p> <ul data-bbox="411 1229 1334 1382" style="list-style-type: none">• Preferred term (note this may not contain any of the search text)• Fully Specified Name• Synonym that is lexically closest to the search term (e.g. lowest Levenshtein distance from the search term) <p data-bbox="357 1431 1402 1505">The above items could also be prefixed with additional information, such as the SNOMED CT hierarchy (taken from the Fully Specified Name)</p>

Req ID	Requirement Text
SCT-027	<p><u>Provide word equivalence matching</u> The system to by default (without any user prompting) perform word equivalence matching. By using equivalence tables, equivalent terms could be included in the results list. For example, if a clinician enters 'nose boil' the equivalent term 'nasal furuncle' could also be provided in the results.</p> <p>As well as working for complete terms or phrases, the equivalence matching to also work for single input words. For example, the term 'rupture of cervix' could also return the equivalent 'tear of cervix' as the equivalence tables could recognise that the single words 'tear' and 'rupture' are equivalent.</p>
SCT-028	<p><u>Highlight the use of word equivalence matching by the system</u></p> <p>When word equivalence matching is used, it may appear to users that it “breaks” the normal matching applied. For example, a result may appear that does not resemble the entered search text (e.g. they enter kidney failure and see a result that does not include both these terms, such as renal failure)which may cause confusion.</p> <p>System to inform users that word equivalence matching is being used by:</p> <ul style="list-style-type: none"> • Clearly indicating where word equivalence matching is being used. • Providing a control to allow the user to choose whether equivalence matching is switched on or off.
SCT-029	<p><u>Inform the user that a search is taking place</u> The system to inform the user that a search is running.</p>
SCT-030	<p><u>Provide a mechanism to cancel a running search</u> If a search takes a long time to complete, the system to provide a way for the user to cancel it mid-operation.</p>
SCT-031	<p><u>Provide a scrollable results list</u> The search results to be delivered in a small list with vertical scrolling. System to avoid horizontal scrolling.</p>
SCT-032	<p><u>Display at least 10 results simultaneously</u> Sufficient on-screen room should be provided for the results list – field to be large enough to display space for at least 10 results simultaneously.</p>
SCT-033	<p><u>Display a maximum of 20 results simultaneously</u> A maximum of 20 results to be visible on screen at once.</p>
SCT-034	<p><u>Results list width</u> The results list width to allow at least 60 characters in a line. If the SNOMED CT concept exceeds this length, it should wrap onto a second line which is indented by two characters.</p>

Req ID	Requirement Text
SCT-035	<p><u>Displaying results longer than 2 lines</u></p> <p>Option 1 Display the full SNOMED CT concept without truncation</p> <p>The concept to always be displayed in full – without truncation. This would mean that the concept should wrap to as many lines as it needs in the results list. Wrapping to 3 lines would ensure that 94% of SNOMED CT descriptions (Preferred terms and Synonyms of active terms) would be displayed in full.</p> <p>Option 2 Truncate the SNOMED CT concept</p> <p>If the concept text length exceeds two lines, the system to display all that it can over the two lines and then add an ellipsis („...“) at the end of the text to indicate that it has been truncated. If this is done, the user to be given the ability to see the concept text in full by another mechanism, such as a tool-tip or pop-up display.</p>
SCT-036	<p><u>Positioning the results list</u></p> <p>The results list to be located in an easily noticeable, consistent relative position. It should not obstruct any text being entered nor distract the user to such an extent that it obstructs the typing of further notes. The results list to be displayed next to, or as close as possible to, the text input area (where the user entered their search term).</p>
SCT-036	<p><u>Display the results as a flat list</u></p> <p>The default method for displaying the descriptions in the result list to be in the form of a “flat list” without hierarchy. Option to display the SNOMED CT hierarchy to be available to the user.</p>
SCT-038	<p><u>Visually distinguishable descriptions in results list</u></p> <p>System to ensure that individual terms in the results list are clearly distinguishable from each other.</p>
SCT-039	<p><u>Do not display SNOMED CT codes in the returned results</u></p> <p>SNOMED CT concept or description Ids to not be displayed as part of the returned results in the user interface as default. System to allow user configuration to enable the SNOMED CT code to be displayed in the returned results list.</p>
SCT-040	<p><u>Provide additional information per result</u></p> <p>The system to allow the user to view the Fully specified name for any concept.</p>
SCT-041	<p><u>Highlight search tokens in the result</u></p> <p>For each result displayed, the part that matches with the search term to be highlighted.</p>

Req ID	Requirement Text
SCT-042	<p><u>Prioritise some descriptions by putting them to the top of the results list</u> Some descriptions are more likely to be chosen by the user, they should be given a higher priority than other descriptions by placing them at the top of the results list making them easier for users to locate. Some examples of these could be the following type of matches:-</p> <ul style="list-style-type: none"> • Exact matches • Near matches • Frequently used terms <p>There may also be different variations of “Frequently used terms”, those based upon frequency of terms chosen by the user, or by the local department, or frequency of use within a particular specialty. In the case of a locally produced list, this would need to be managed by the supplier who created it.</p>
SCT-044	<p><u>Provide ability to apply different ordering to results list</u> In order to find the wanted concept, system to provide the user the ability to switch between ordering strategies. At all times, it should be clear to the user which ordering strategy is in use.</p>
SCT-045	<p><u>Highlight favourites appearing in results list</u> If the results list contains one of the user’s favourites, this term should be highlighted so the user is made aware of this, or the term to be put at the top of the results list. Any highlighting to be done in a way that the user’s attention is drawn to this result.</p>
SCT-046	<p><u>Display number of results returned</u> The system to display the number of results returned for each search so the end user is aware of the number of matches when they are shown say the first 20.</p>
SCT-047	<p><u>Explicitly state when no results are found</u> When no results are returned, the system should clearly state this.</p>
SCT-048	<p><u>With no results returned, offer further assistance</u> If the system returns no results, the system to offer further assistance to the user.</p>
SCT-049	<p><u>Provide an option to expand beyond the default context</u> Where a user is searching within the default context and the desired term cannot be found, users to be allowed to search outside of this (e.g. search beyond their current specialty across other specialties). This only applies when the context has been sensibly restricted to acceptable results.</p>

Req ID	Requirement Text
SCT-050	<p><u>Provide hierarchical browsing for refinement</u></p> <p>System to allow users to refine a concept in the results list by browsing other concepts that are hierarchically related to it. The related concepts may include the following:</p> <ul style="list-style-type: none"> • Parents of the selected concept. • Children of the selected concept. • Siblings of the selected concept (that is, the children of the concepts' parents). <p>System to clearly distinguish between the parents, siblings and children of a selected concept. This search technique may be initiated by pressing an icon, a function key and how the developer deems fits their standard UI approaches.</p>
SCT-051	<p><u>Allow control of the clinical data input and selection process entirely by mouse, entirely by keyboard, and a combination both</u></p> <p>The system to allow the user to trigger the search, navigate the results list and select a result using the keyboard, this would include:</p> <ul style="list-style-type: none"> • Allow the <enter> key to trigger the search. • When the result list is populated, the user to be able to directly give focus to and navigate up/down the results list with arrow keys or mouse. • Allow the <enter> key or double click to select a term from the results list and populate the search text field.
SCT-052	<p><u>Display the selected concept as the encoded concept</u></p> <p>When the user has selected a concept from the results list, the system to replace the user-typed "original" search text with the SNOMED-CT description.</p>
SCT-053	<p><u>Show in the text entry field that a concept has been encoded</u></p> <p>Users to be able to distinguish between text in the search text entry field that has been encoded, and text that has simply been typed into (which has yet to be encoded).</p> <p>This can be done by styling the text or the text entry field differently when it contains an encoded field or just normal text.</p>
SCT-054	<p><u>Re-selecting a result</u></p> <p>Once a concept has been selected from the results list and this has been added to the search text entry field, the user to still be able to easily go back to the results list and select a different concept.</p> <p>When the user does return to the results list, they should not have to re-enter their original search text. They should also not have to re-start the search. The results list to still present the results from the previously entered search text.</p> <p>In addition, any other settings that the user had made (e.g. changed the default ordering, opted for hierarchical browsing, searching across other specialties and so on) to also be presented as they were previously.</p>

4 References

1. CUI Design Guidance – Terminology – Display Standards for Coded Information, NHS Connecting for Health, Version 1.0.0.0 (July 2007).
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5 Appendix

5.1 Lessons learned from live implementations of SNOMED

5.1.1 Lack of dynamic search results whilst typing

Clinical users frequently make typing errors when searching for clinical terms. These inevitably result in '**No match found**', but only after triggering the search. Poor choice of search terms can also frequently result in this error.

SNOMED browsers that provide dynamic search suffer less from this problem because they match the results to the typed characters in real time. As soon as the typo or poor word choice is made, the results list disappears allowing rapid identification and correction of the error. Lorenzo users are left with no clues as to which word or letter is causing the problem.

What would help?

- a) *Real-time search results whilst typing*
- b) *Indicate word(s) that do match results after a failed search (see the 'no results found' example image from eBay in the Appendix)*

5.1.2 Dependency on wildcard character for partial word matches

Medical words are often a) long, b) difficult to spell, and c) frequently have alternative suffixes, all of which can hamper attempts to find them. Searching for parts of words is a quick solution to this problem. Some applications will not find matches for partial words unless an asterisk is added to the part-word.

Use of the asterisk as a wild-card character in key word search does not come naturally to many users. Clinicians who are familiar with carrying out research for academic publications will find this activity comes naturally. Others will have to learn to think in this way.

What would help?

a) Drop the requirement for wild-card character to match partial words.

5.1.3 Advanced mode does not auto-populate with results from simple search

Where systems provide different modes of searching (generally through icons or buttons), if a user completes a simple search, selects one of the concepts and then switches to Advanced mode, in some applications they are then presented with a blank screen.

In order to proceed in Advanced mode, the search entry has to be repeated and the chosen term reselected (remembering that it may not be on the first page of search results).

What would help?

a) Auto-populate the results list with the results from the previous search

b) Show the same page that the user was viewing when they clicked Advanced

c) If a selection has already been made, make that the currently selected term

5.1.4 No access to 'Advanced mode' except via 'Simple mode' search results

A user wishing to access the SNOMED CT hierarchy to find a term cannot do so without performing a simple search first, and then clicking 'Advanced'.

What would help?

a) Provide access to Advanced mode at any time

b) Provide a user preference option allowing them to start in Advanced mode

5.1.5 Poor representation of hierarchical relationships in Advanced mode

The standard representation of a hierarchically organised set of terms is to have the selected concept at the centre with the less specific concepts ('parents') above it, and the more specific concepts ('children') below it. Icons (usually a + indicate where a term has children)

Some implementations place the currently selected concept in the top left corner and the parents and children in separate boxes on the right hand side. This is more confusing for users who are trying to browse up and down the hierarchy and navigation results in a full screen change and does not maintain aspects of the previously viewed hierarchy

5.1.6 Reliance on SNOMED CT for hierarchy navigation

There are various views as to whether only SNOMED CT and its hierarchy should be used to enable data entry or whether other techniques are acceptable. Third party products exist that extend the terms for searching and in the background link these to SNOMED CT terms. Alternative navigation hierarchies that are stable and clinically predictable are also possible, often oriented to specific speciality subsets.

Recent experience has shown that some users much prefer the simplified, hand-crafted representation of a hierarchical group of procedure concepts in eLogBook (developed by the Royal College of Surgeons of Edinburgh), to the less clinically predictable and organisation of SNOMED CT concepts.

What would help?

- a) Introduction of specialty specific subsets to make common things easier to find*
- b) Introduction of 'navigation subsets' (hierarchically organised subsets) to simplify the browsing experience*
- c) Investigate the possibility of validating and adopting the work being undertaken by the Royal Colleges to standardise the hierarchical representation of surgical procedures*

5.1.7 Extensive use of attributes for procedure method and approach

Different specialities vary as to whether they would prefer to have a fully pre-coordinated list of terms versus the more post coordinated approach with different aspects in different fields.

The 'Record Procedure' activity has four optional qualifying attributes – Approach, Method, Device and Priority.

Approach can be derived from SNOMED but always seems to present the same set of values, few of which seem useful to end users. In addition they already may be in the procedure name selected so repeat information.

Method is also derived directly from SNOMED but very seldom seems to offer any useful values for recording clinical information.

5.1.8 Under-use of SNOMED CT for constraining body-site for diagnosis

Clinicians must record which side is affected when describing a diagnosis or a procedure affecting a paired body part, such as fractured femur or hernia repair. It is not possible to record which side is affected (left, right or bilateral) without identifying the relevant body part first. So, having found the correct clinical term in SNOMED, the user is then forced to locate the correct body part in SNOMED even though this information can nearly always be derived automatically from SNOMED itself.

Worse still, the body part manually located and selected by the clinician is very often inconsistent with the part defined in SNOMED CT with the result that analysis of the data item and transmission to other clinical systems may be adversely affected.

What would help?

- a) As a minimum, help the user to enter the correct body part by showing the information in the SNOMED model*
- b) Preferably, populate the body part field by default whenever possible, leaving the user to select laterality*