Truncation of Clinical Terms

Design Groundwork Exploration

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Prepared by

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The ideas presented in this document are for community preview and consultation only.
Further design and patient safety assessments are required to finalize the content as CUI Design Guidance.

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Executive Summary

Problem

- Truncation of text is already widely used in information rich views in both non-clinical and clinical software
- Truncated clinical terms may be more prone to misinterpretation and mis-selection than terms displayed in full
- An assessment of the patient safety risks of alternatives to truncation is needed to inform future design decisions

Scope

- This study focuses on truncation of the text of clinical terms displayed in a selection list, with a brief look at truncation of terms in a summary view

Headline Findings

- Truncation of clinical terms should be avoided where possible
- Truncated clinical terms may introduce more patient safety risks than terms displayed in full
- In most cases, clinical terms should be displayed in full in a list with a vertical scroll bar
- Truncation may be relevant in specific contexts, types of information, tasks or views
- It is unlikely that a set of generic rules for truncation can be defined

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Problem Statement

Customer need

- Effectively display lists of clinical terms when UI space is limited
- Review the potential for generic guidance for the truncation of clinical terms in any context

User experience goals

- Support the user task of selecting a clinical term from a list as part of the process of encoding
- Suggest mitigations for patient safety risks associated with hidden text and mis-selection in lists

Scope Statement

In Scope

- How to truncate coded clinical terms displayed in a selection list
  - Exploration and research limited to SNOMED CT®
- How to truncate coded clinical terms displayed in a list or table
  - Limited feedback based on evolving work in the Display of Clinical Statements Workstream
- How to access the full text of a truncated clinical term
  - Limited feedback based on evolving work in the Display of Clinical Statements Workstream

Out of Scope

- Truncation of coded clinical terms in scenarios not listed above
- Truncation of user interface elements (such as menu items and window titles)
- Truncation of other information, such as medications (apart from those displayed as coded clinical terms), patient names and dates
- Truncation of non-encoded clinical terms
- Truncation of post coordinated coded clinical terms
- Using approved acronyms or abbreviations to shorten text
- Truncation of free text

Process Overview

Scoping and Research

- Review of UK National Health Service (NHS) *NHS CFH Rules for the Display of Coded Clinical Data*
- Review of truncation in a small number of clinical and non-clinical applications
- Review of NHS Connecting for Health (NHS CFH) analysis of SNOMED CT
- Review of UI principles for avoiding truncation

Risk Assessments

- Preparation of scenario and design alternatives
- Reporting findings

Design Exploration

- Design exploration for truncating in selection lists
- Design exploration for truncating in views that summarise clinical statements

User Research

- Risk assessment of designs in interviews with six participants
- Reporting user research findings

About this design consultation

The purpose of the document is to summarize the current learning that has been achieved in the design and research process to date. This is articulated primarily in terms of the features that comprise the preferred current design. These design features aggregate into seven themes.

For each theme we illustrate a few design points with images of the current design, plus an indication of some of the alternatives we have been considering. We then summarise the key design points, including some that haven't been illustrated, plus the rationale for choosing these points. We end each theme by outlining the proposed next steps and future exploration.

DESIGN EXPLORATION

Design Exploration

Introduction	
Theme 1	Avoiding the need for truncation
Theme 2	Truncation points
Theme 3	Fragmenting words
Theme 4	Dynamic versus static truncation
Theme 5	Truncation markers
Theme 6	Identical truncated terms
Theme 7	Access to full text for truncated terms

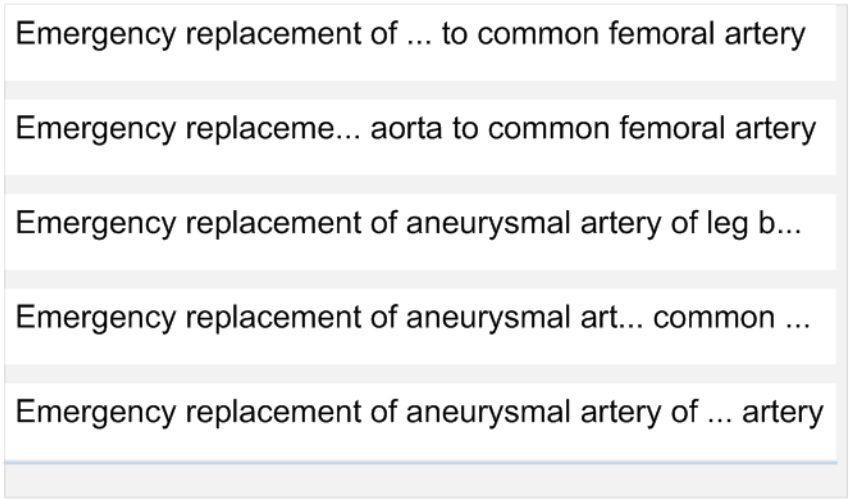
All illustrations use current SNOMED CT terms.

Introduction – what is truncation?

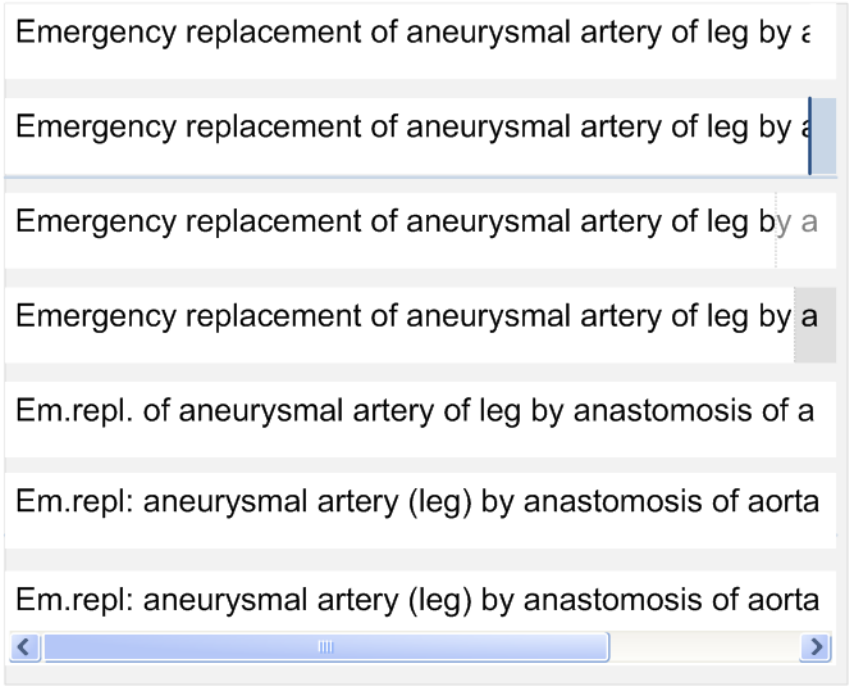
In this document, the word ‘truncation’ is used to refer to the removal of a section of text in order to fit the remainder into a smaller space

Although this document focuses on truncation, the use of truncation must be compared to obscuring text and thus both are reviewed

Truncated text

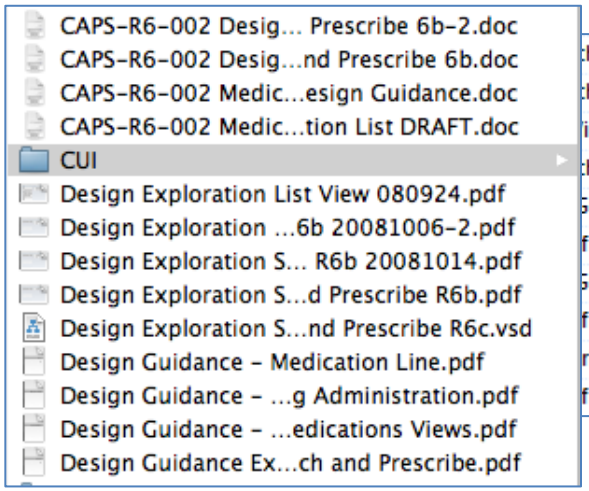


Obscured text

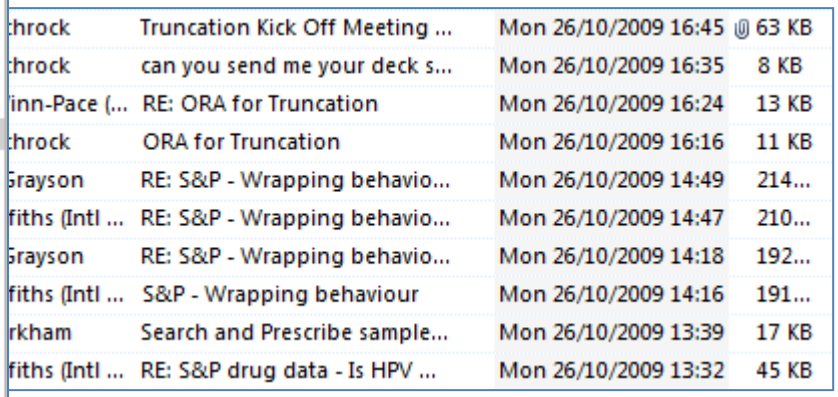


Introduction – truncation in non-clinical applications

Truncation is widely used in both clinical and non-clinical applications
Text is truncated at the end or in the (approximate or exact) 'middle' depending on context



A list of files truncated in the 'middle'

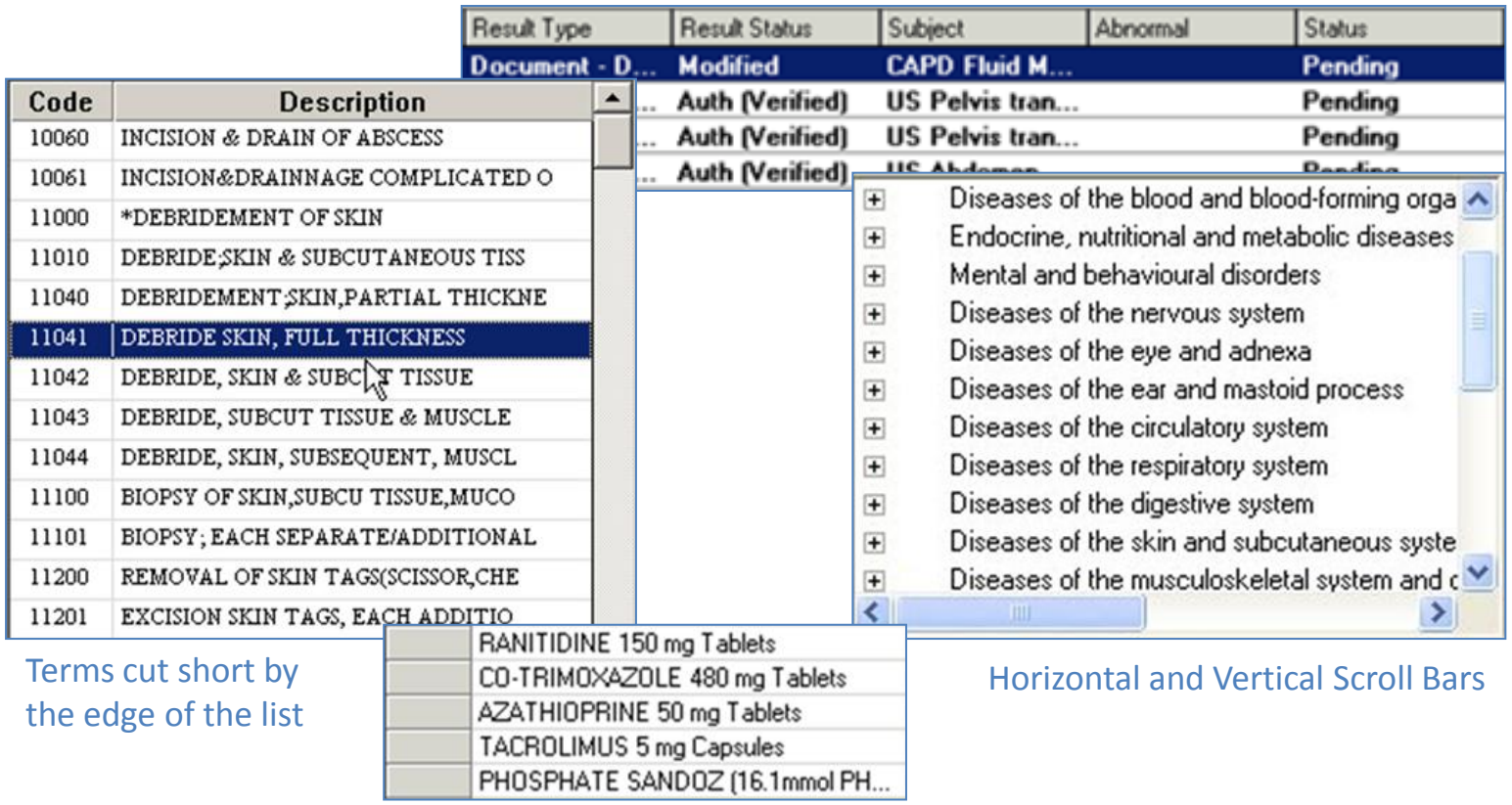


A list of emails truncated at the end

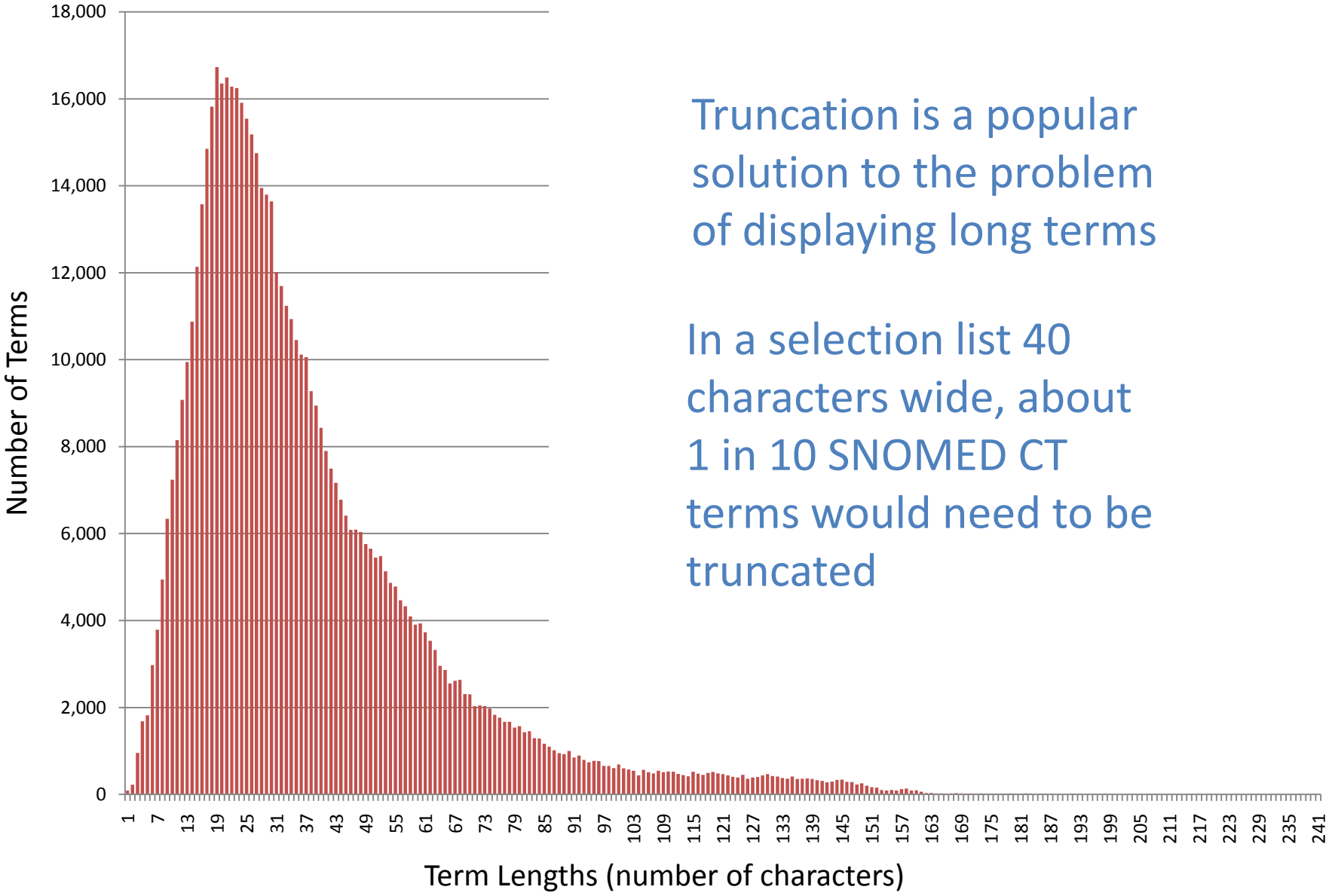
Truncation of text is generally used when text is limited to single lines in dynamic width spaces so the truncated text changes as the width is changed. Words are usually fragmented to make best use of the available space

Introduction – truncation in clinical applications

Truncation is a popular solution to solving the need to display long terms in information-rich views, especially when that information is presented in tabular form



Introduction – lengths of SNOMED CT terms



Truncation is a popular solution to the problem of displaying long terms

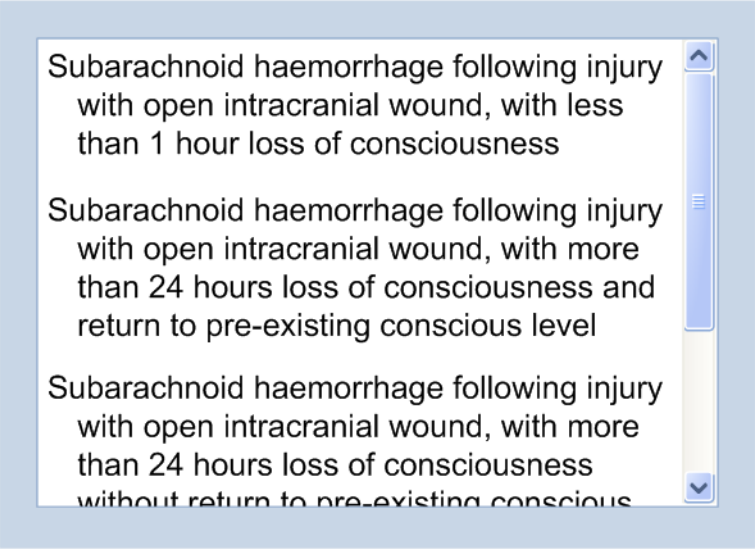
In a selection list 40 characters wide, about 1 in 10 SNOMED CT terms would need to be truncated

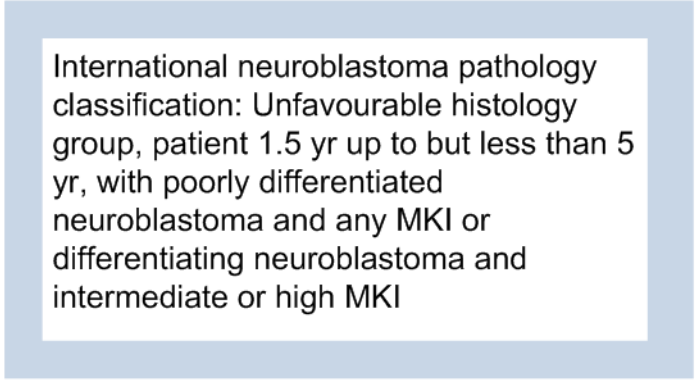
Theme 1

AVOIDING the need for **TRUNCATION**

Avoiding the need for truncation – wrapping

Wrapping ensures that all items are displayed in full. If each item in a list can be scrolled into view so that the whole term is visible, then each term can be reviewed easily before a selection is made





"You could select from this list without needing to [click on one to] review the full term"
User Comment

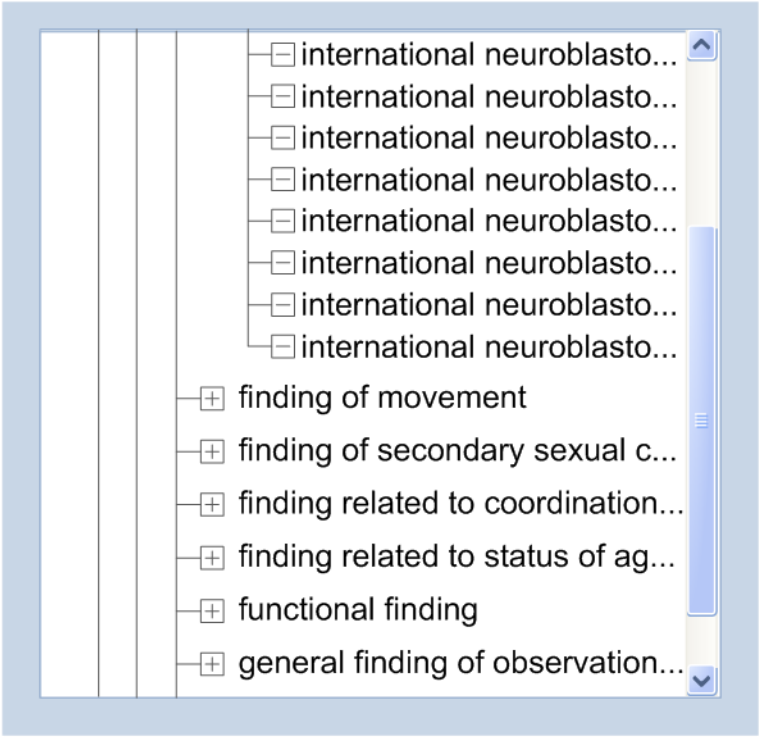
"When SNOMED terms are long, there's all the more reason to see them in full"
User Comment

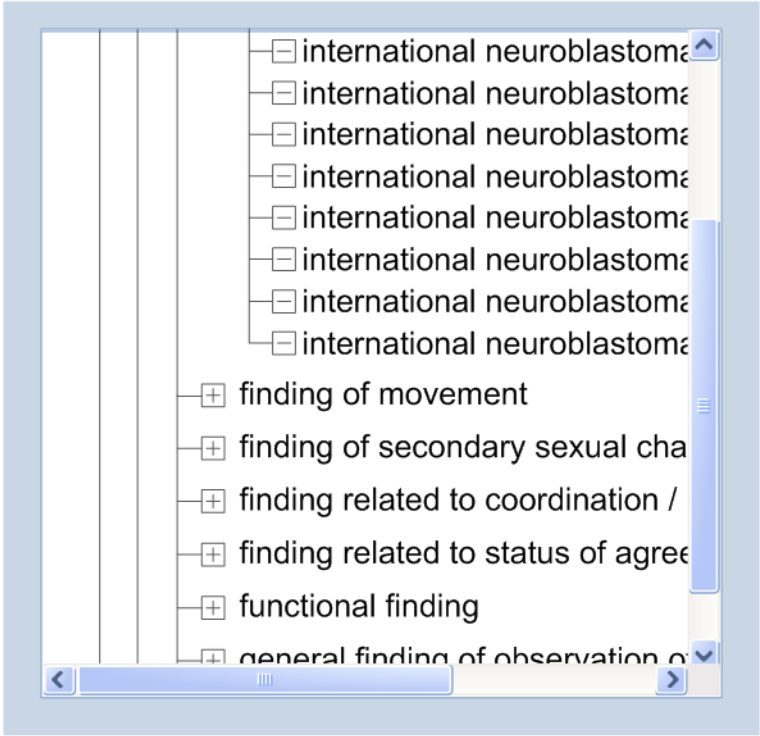
Patient Safety Risks
Many of the patient safety risks that were recorded for truncation of terms in a selection list can be mitigated by wrapping text and providing a vertical scroll bar

Avoiding the need for truncation – scrolling

Truncation of clinical terms may not be appropriate for some tasks. For example, when the task is browsing (rather than searching for a known term), the list may be presented as a tree

Truncation makes it difficult to browse items in a tree

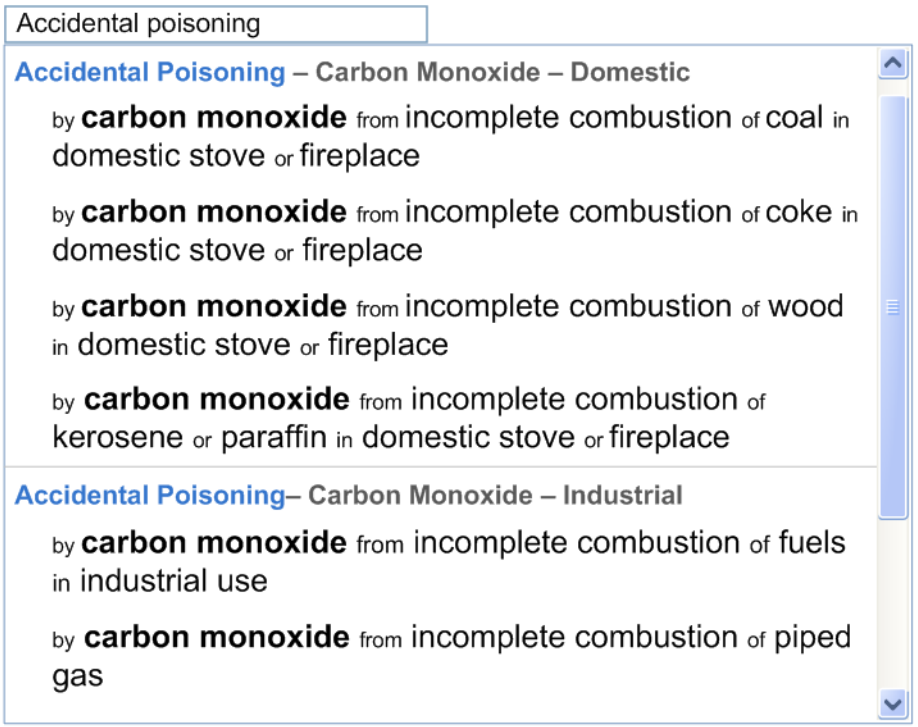


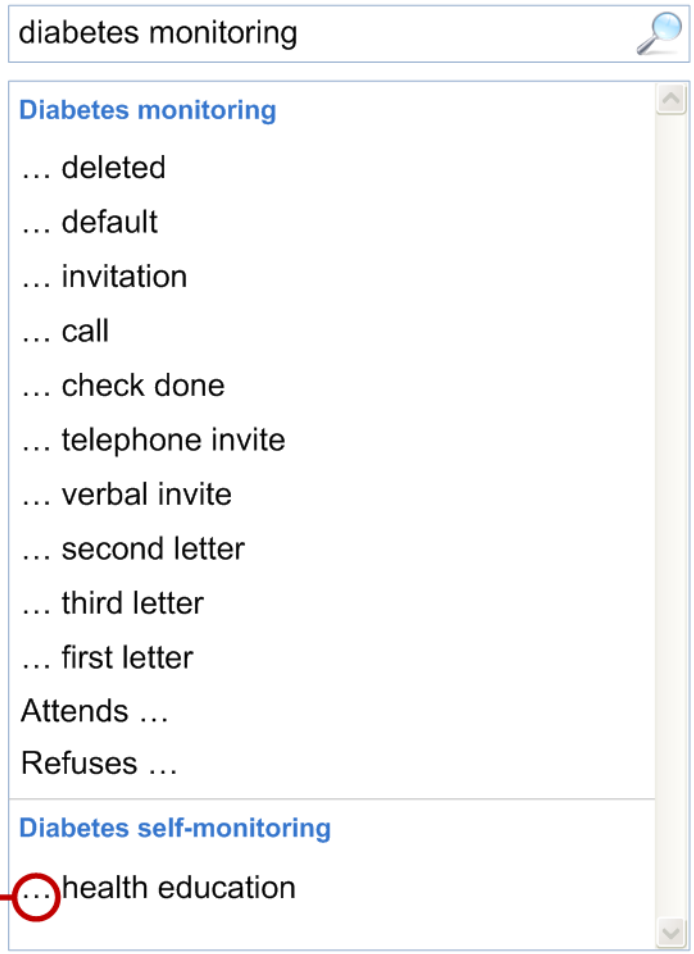


When browsing a tree, a horizontal scroll bar may be more appropriate (than truncation) since it provides more immediate access to full terms

Avoiding the need for truncation – grouping

Groups help to break the list down into smaller chunks and reduce the number of list items that need to be reviewed





When a group represents a matched phrase (in the search criteria), the group name can be omitted from the results so that differentiating phrases remain

Summary

1. Wrapping
   a) Ensures that all items are displayed in full (with the help of a vertical scroll bar)
   b) When long words wrap, it can create a lot of unused space on the right of the text
   c) When wrapping, rules may be needed to keep associated elements such as numbers and units together
2. If summaries can be created that are meaningful, it may be possible to provide higher level summary views that can then be used to drill down a subset of the detail that can then be displayed in full (without truncation)
3. Approved acronyms and abbreviations can be used to shorten some structured text entries
4. Groups add structure and can be used to hide the text in each list item that is implied by the group it is in
5. Modifying search processes and supporting filtering may help users to work with shorter lists in which truncation is not necessary
6. Showing or hiding certain types of information (or labels in a chart view) may simplify the view and leave more room for other information to be displayed with minimum truncation

Avoiding the need for truncation

Emerging Recommendations	Evidence
Use truncation as a last resort and only when truncated terms are the exception rather than the rule	• Tasks associated with both summary views and selection lists are not well supported when truncation of terms is a common occurrence • There are many patient safety risks (such as misinterpretation and missing the presence of truncated text) associated with the interpretation of truncated terms
When wrapping encoded text ensure that elements such as labels, numbers, units and separators are kept together where necessary	• When wrapping separates quantities (100) from units (milligrams), there is a risk that, in skim reading, the wrapped text is guessed rather than actively read. Preserving them together mitigates this risk • *The completion of further work in this area may generate a set of more specific recommendations*

Note: *Emerging recommendations are at many levels (some high level and generic, others more detailed) and include more than one (mutually exclusive) approach. They need significant further design, research and risk assessment before they can be considered as candidates for future guidance*

Avoiding the need for truncation

Emerging Recommendations	Evidence
Do not wrap mid-word (thus creating word fragments with or without hyphens)	• Hyphenating words that are not usually hyphenated may create fragments that can be misinterpreted as whole words • As above, the wrapped part of a hyphenated word may be guessed by the user rather than actively read • *The completion of further work in this area may identify the need for a technical solution to prevent applications from taking hyphens as wrapping points by default*
If a list can include items that are too long to be displayed in full without scrolling, allow the list to be resized so that it is possible to see the longest term without scrolling	• The task of selecting from a list is not well supported if rapid scrolling is needed and list items must be held in short term memory in order to compare between them and make an appropriate selection

Avoiding the need for truncation

Emerging Recommendations	Evidence
Do not provide a horizontal scroll bar in selection lists unless the list can be resized to display all terms in full	• The task of selecting from a list is not well supported if rapid scrolling is needed and list items must be held in short term memory in order to compare between them and make an appropriate selection • Horizontal scrolling does not allow a list to be scrolled so that a list item is visible in full • Comparing list items is more difficult with a horizontal scroll bar unless the differentiating text is at the end of each term • Horizontal scrolling is a more complex mechanical interaction than vertical scrolling when a mouse with a scroll wheel is used

Areas / questions for further study

- If truncation is being considered, is the design solution the best way of supporting the user task?
  - For example, if truncation is being considered for selection lists of clinical terms, is a selection list the best mechanism for making that selection?
- In which contexts is truncated information sufficiently meaningful to support the tasks of searching and selecting an appropriate term or reviewing a patient using summary views?
- There may be some contexts in which truncation is appropriate only for expert users or certain roles and should be avoided for novice users or for other roles
- If groups are used in search results, more work is needed to determine whether the structure of the results should be manually-defined or influenced by the search criteria
- *Emerging recommendations can be used to inform further work on avoiding the need for truncation*

Theme 2

TRUNCATION POINTS

If truncation cannot be avoided, where should text truncate?

Truncation points – risks

Truncating in the 'middle' may create 'artificially meaningful' sentences, cause more than one fragmented word and / or affect the space and wrapping behaviour of the truncation marker

A truncation marker might wrap onto a new line

Emergency replacement of aneurysm
...of aorta to superficial femoral artery

When truncation in the middle is automated, the resultant phrase can be open to mis-interpretation

KEY RISK – that the truncation is missed when the truncated text can be read as a whole sentence

Original Text

Creation of valved conduit between left ventricle of heart and aorta

Middle surplus letters if restricting to 60 characters

Creation of valved conduit between left ventricle of heart and aorta

Position of ellipsis if fragmented words are allowed

Creation of valved conduit bet...t ventricle of heart and aorta

If a character limit is used and truncation can fragment words, more than one word might be fragmented

KEY RISK – truncation may create 'artificial' words or sentences that are prone to misinterpretation

Truncation points – visibility

Truncating at the end is potentially easier to notice and a truncation point at the end is more consistently placed (visually) than a truncation point in the 'middle'. However, truncation in the 'middle' may be more effective and easier to notice when each item is limited to a single line

Creation of valved cardiac conduit
Revision of valved cardiac conduit
Creation of valved cardiac conduit NOS
Other specified creation of valved cardiac conduit
Creation of valved cond... right atrium and pulmonary artery
Creation of valved conduit be... atrium and ventricle of heart
Correction of tetralogy of Fall...ht ventricular outflow conduit
Creation of valved conduit bet... ventricle of heart and aorta
Creation of valved conduit be...f heart and pulmonary artery

KEY RISK – the presence of truncation may be missed

Creation of valved cardiac conduit
Revision of valved cardiac conduit
Creation of valved cardiac conduit NOS
Other specified creation of valved cardiac conduit
Creation of valved con... right atrium and pulmonary artery
Creation of valved conduit b... atrium and ventricle of heart
Correction of tetralogy of Fa...t ventricular outflow conduit
Creation of valved conduit be...entricle of heart and aorta
Creation of valved conduit b... heart and pulmonary artery

Truncation points – manually-defined truncation

A set of manually defined truncation points (defined for each term) could ensure that clinical terms are always truncated in acceptable places and that phrases are preserved where necessary

“ ...it may be appropriate to truncate the middle of some terms and the ends of others ”
User Comment

Emergency replacement of aneurysmal artery of leg ... to common femoral artery

Emergency replacement of aneurysmal artery ... to superficial femoral artery

When these examples are created manually, it’s natural to preserve phrases but how does a computer know where to truncate?

“ Consider using SNOMED’s hierarchy (or logical model) to determine what can and can’t be truncated and potentially where to truncate ”
User Comment

Truncation points – summary views

A summary view (containing clinical terms) is not effective if the information within it is truncated

History of Current Condition

Weight loss Weight loss 5 kilograms in 1 month

Diarrhoea Diarrhoea 5 times in one day. Liquid green. No ...

Shortness of breath Shortness of breath more than usual for ...

Past Medical History

MI – Myocardial infarction – *known absent*, past; Stroke - ...

Epilepsy – *known absent*, past: Rheumatic fever – *known* ...

Family History

Cancer – *known absent*, person in the family No cancer

MI – Myocardial infarction, father, died Father died of MI ...

Past Surgical History

Joint injury, Open reduction, Internal fixation 1997 – L ...

"Truncation is not effective when used in a view that is intended to be a summary"
User Comment

KEY RISK – that truncation leads to apparent duplication and is assumed to be an error

KEY RISK – that the missing information is interpreted as unimportant, or assumptions are made about the missing text

Truncation points – numbers and units

Numbers may be separated from associated units when wrapping or truncation is used

When truncation allows numbers to be fragmented, a number may be missing one or more digits

Hind brain contusion with open intracranial wound, with 1-24 hours loss of consciousness

Hind brain contusion with open intracranial wound, with 1-2...

If numbers are fragmented, the result may be open to misinterpretation

KEY RISK – that truncating numbers or units could completely change the meaning

Summary

1. Preserving phrases is difficult to do automatically
2. Fixed character limit
   a) Can create an artificially large space after the point of truncation
   b) Not likely to make the best use of the available space
   c) Could be used to ensure consistent truncation in different contexts but likely to introduce problems in a context where the character limit is less suitable
3. Truncating at the end
   a) Is potentially easier to notice
   b) A truncation point at the end is more consistently placed (visually) than a truncation point in the 'middle' (wrapping rules and whole word or fragmented words)
4. Truncating in the 'middle'
   a) May create 'artificially meaningful' sentences
   b) May create more than one fragmented word and affects the space and wrapping behaviour of the truncation marker
   c) May be more effective when limiting to a single line
5. More than one truncation point (in a single term or text item)
   a) May allow phrases or differentiating words to be maintained in view
   b) Requires sophisticated logic and is more difficult to achieve with a dynamic truncation point
6. A set of approved, manually-defined truncation points could ensure that terms are always truncated in acceptable (and expected) places

Truncation points

Emerging Recommendations	Evidence
Do not truncate clinical terms when they appear in a list of fixed-width	• When a width is fixed, a solution is needed to support access to the full text for truncated terms • A fixed-width list cannot be resized (even temporarily) to reveal the truncated text • Any solution for accessing the full text of a truncated term is likely to be even less direct (and effective) than scrolling
Only use truncation in a selection list of clinical terms if the choice of text to truncate is informed by the data structure or a manually defined means of selecting acceptable text to truncate is available	• If truncation can be used in a way that supports accurate review of a list without accessing the full text, then some of the patient safety risks associated with truncated text are mitigated

Truncation points

Emerging Recommendations	Evidence
Only use ‘middle truncation’ when text is limited to a single line	• ‘Middle’ truncation is used effectively in non-clinical contexts and is therefore likely to be effective in some clinical contexts (depending on the nature of the information) • ‘Middle’ truncation may be the best approach for summary views that display information in which the end of the text is known to be the likely differentiator and no actions can be completed on the truncated text that are unsafe • *The completion of further work in this area may generate exceptions to this rule, such as ‘don’t use ‘middle’ truncation for clinical terms’*

Truncation points

Areas / questions for further study

- Determining when to use truncation and where to truncate may be dependent on an analysis of the specific type of information subject to truncation
- *Emerging recommendations can be used to inform further work on truncation points*

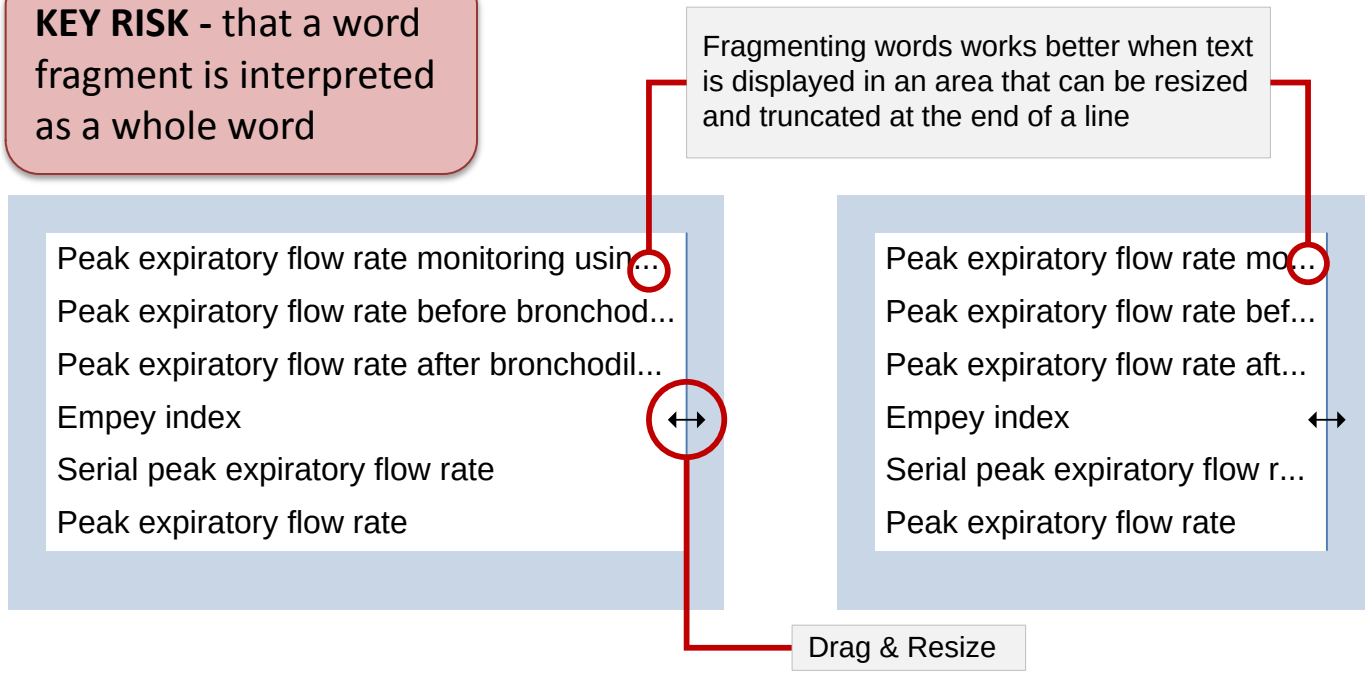
Theme 3

FRAGMENTING WORDS

Fragmenting words – dynamic width

Fragmenting words works best with dynamic truncation – since the truncation point can move one letter at a time as a text area is resized

KEY RISK - that a word fragment is interpreted as a whole word



A fragmented word may be more noticeable than truncated text in which whole words are preserved

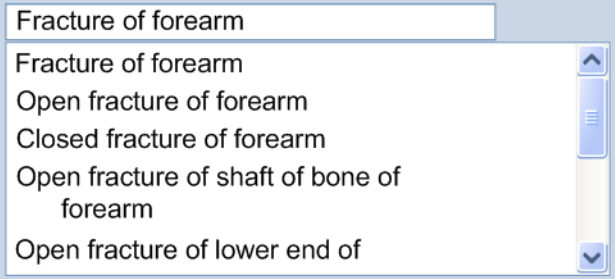
Fragmenting words – contexts

Truncation rules may need to be different depending on the context since it may be acceptable or even necessary to fragment words in some contexts

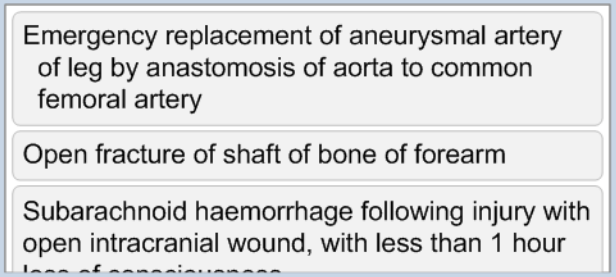
Tables

Col 1	Col 2	Col 3
12-Oct-2009	Emergency replacement of aneurysmal artery of leg by ...	Dr JH
17-Jul-2005	Open fracture of shaft of bone of forearm	Dr PA
09-Jul-2005	Accidental poisoning by carbon monoxide from incomplete ...	Mr CJD

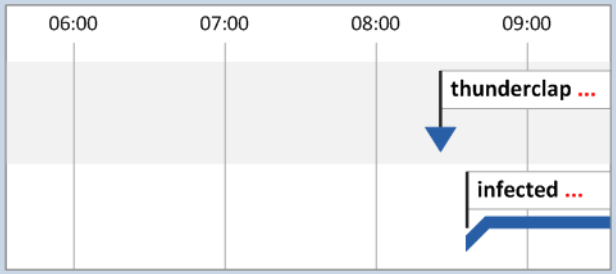
Selection Boxes



Text - Lists and Journals



Timelines and Charts



Summary

1. Fragmenting words works best with dynamic truncation because the truncation point can move one letter at a time as a text area is resized and more of the text is visible than when a whole word is truncated at a time

2. A fragmented word may be more noticeable than truncated text in which whole words are preserved

3. A fragmented word might look like a whole word. Similarly, fragmented numbers may be interpreted as whole when it is missing one or more digits

4. Hyphenation can be used to maximise the quantity of text that can be displayed on each line but creates fragmented words

5. When words are preserved, there may be greater space at the end of truncated text

6. In views (such as a timeline, chart or graph) where text cannot wrap onto a new line, it may be more appropriate to truncate and to fragment words in order to preserve as much visible text as possible

Fragmenting words

Emerging Recommendations	Evidence
Do not truncate such that characters or digits are missing from numbers or units	• Removal of digits from numbers creates new numbers • Separation of numbers from units may lead to the units being guessed • Truncation of a unit (such as millilitres) may create or imply a different unit (such as milli... or ...litres)
Do not fragment words when truncating text that is displayed in a fixed-width area	• For similar reasons that clinical terms should not be truncated in fixed-width lists. Ease of access to the full term is important here

Areas / questions for further study

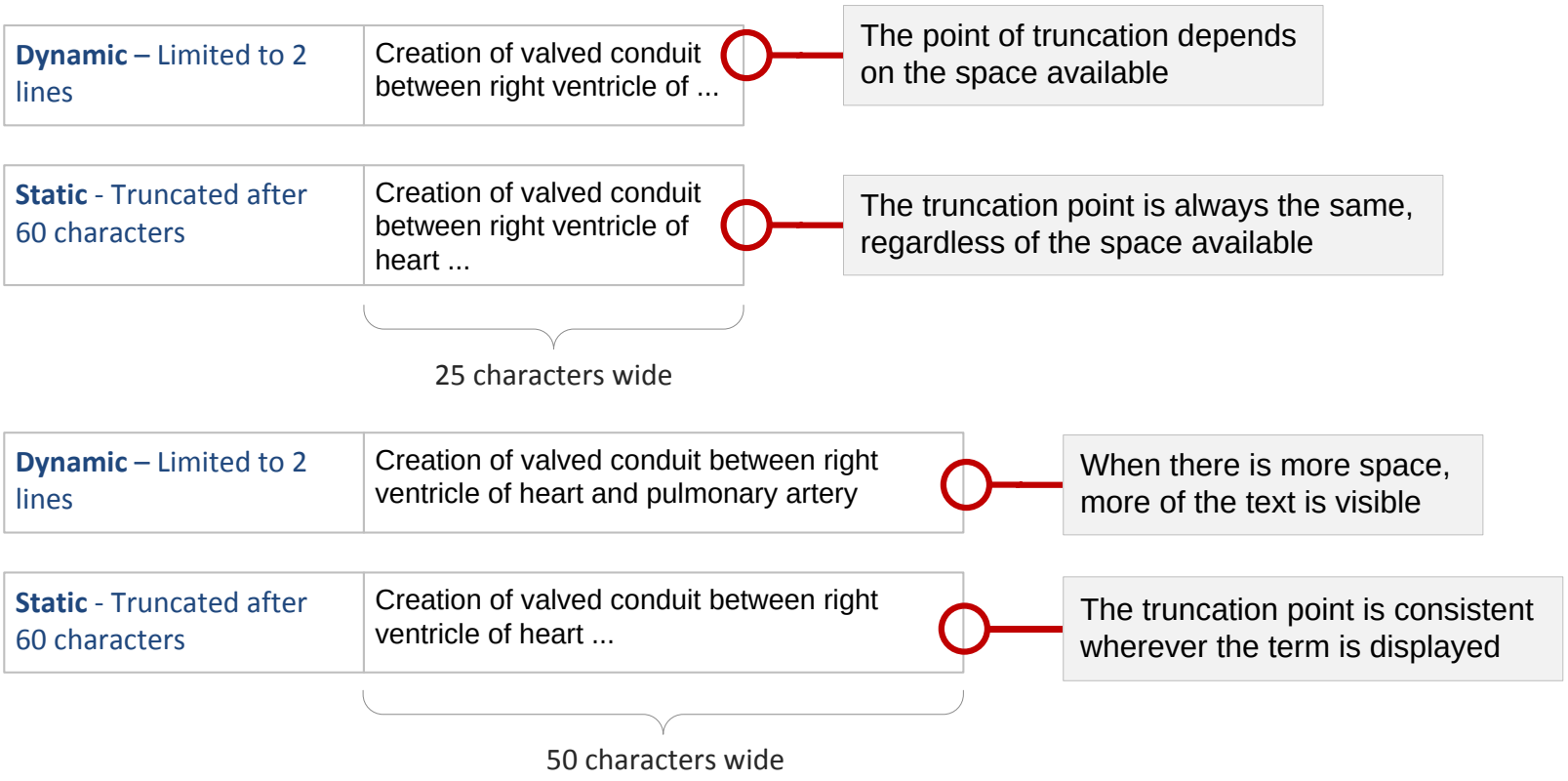
- *Emerging recommendations can be used to inform further work on fragmenting words*

Theme 4

DYNAMIC versus STATIC TRUNCATION

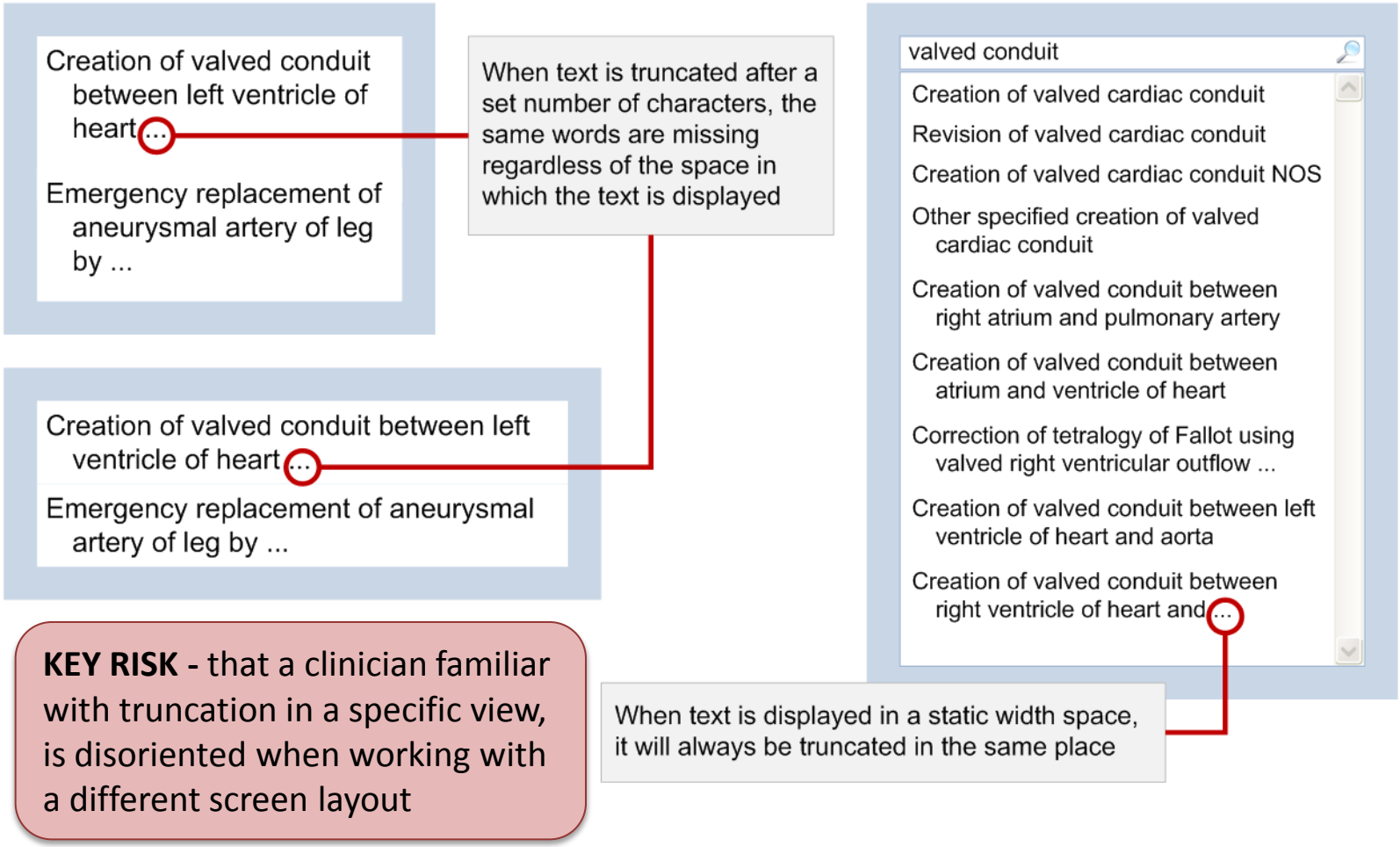
Dynamic versus static truncation

When truncation is dynamic, the truncation point depends on the space available to display the text. When truncation is static, each term is always truncated at the same point in the text, regardless of the space available



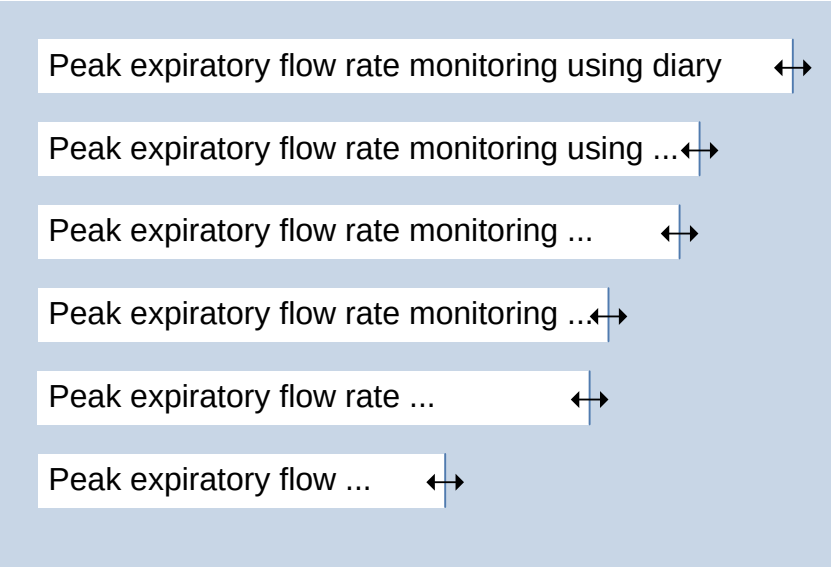
Dynamic versus static truncation

When a space has fixed dimensions, the text will always be truncated at the same point



Dynamic versus static truncation

If the width of a selection list can be changed, it may be possible to increase the width until none of the items are truncated. When words can be fragmented, resizing may appear smooth as the text is truncated one letter at a time. Truncating whilst preserving whole words causes whole words to disappear when a width is reduced



Dynamic versus static truncation

Summary

1. When using static truncation, such as truncating after a fixed number of characters
   a) If an area is a set size, the truncation point will always be the same
   b) Truncation after a set number of characters may leave a lot of white space (thus not making full use of the available space)
   c) It may be easier to use more sophisticated methods of indicating truncation when the truncation point is static, since the location of the point at which the text is truncated is more predictable
2. When using dynamic truncation, such as number of lines to wrap in a variable width space
   a) Truncating whole words might create a jerkiness as words are replaced with the truncation marker
   b) It is more difficult to draw attention to apparent duplicates or text that is open to misinterpretation as a result of the truncation because the truncation point (and thus whether it is duplicated or not) changes
   c) When truncating within cells, applying truncation to one column may not make best use of space if truncation is not also applied in other columns
   d) Using a single line limit with a variable width makes it easier to scan a list but it is less effective for selecting from a list when a large number of list items are truncated

Dynamic versus static truncation

Emerging Recommendations	Evidence
Do not use a set number of characters as a rule for determining an appropriate truncation point	• A set number of characters is likely to be appropriate to a specific context. Since one of the benefits of using a set truncation point is consistency, it becomes irrelevant if the chosen point is not effective in all contexts
Do not provide a horizontal scroll bar for a view containing terms that are truncated at a set point	• If it is possible to scroll so that the point of truncation is off screen, it is more likely that a truncated term is misinterpreted as being whole

Areas / questions for further study

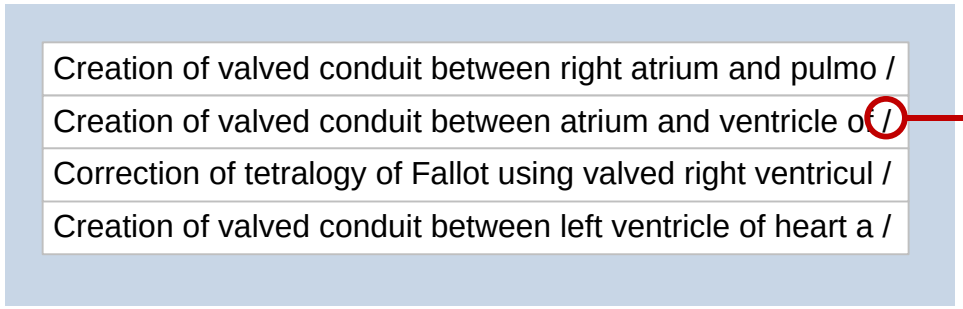
- *Emerging recommendations can be used to inform further work on dynamic versus static truncation*

Theme 5

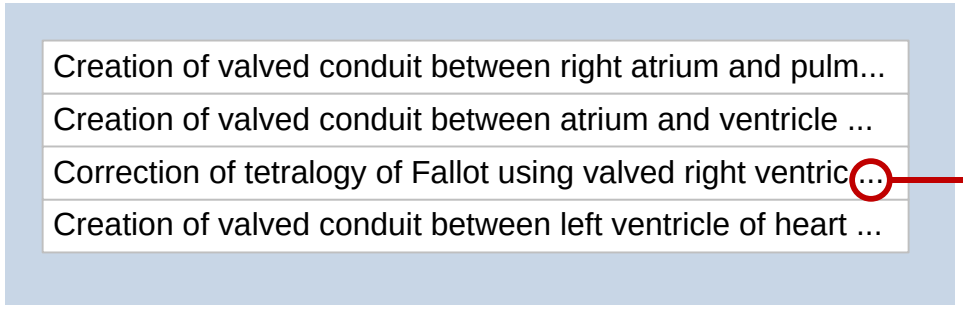
TRUNCATION MARKERS

Truncation markers

Text markers can be placed at the point of truncation and may be easier to implement than icons or images. Some text markers could be misread as letters or numbers



Text markers such as "/" or ">" may be easier to notice than an ellipsis but may also be misinterpreted as letters or numbers

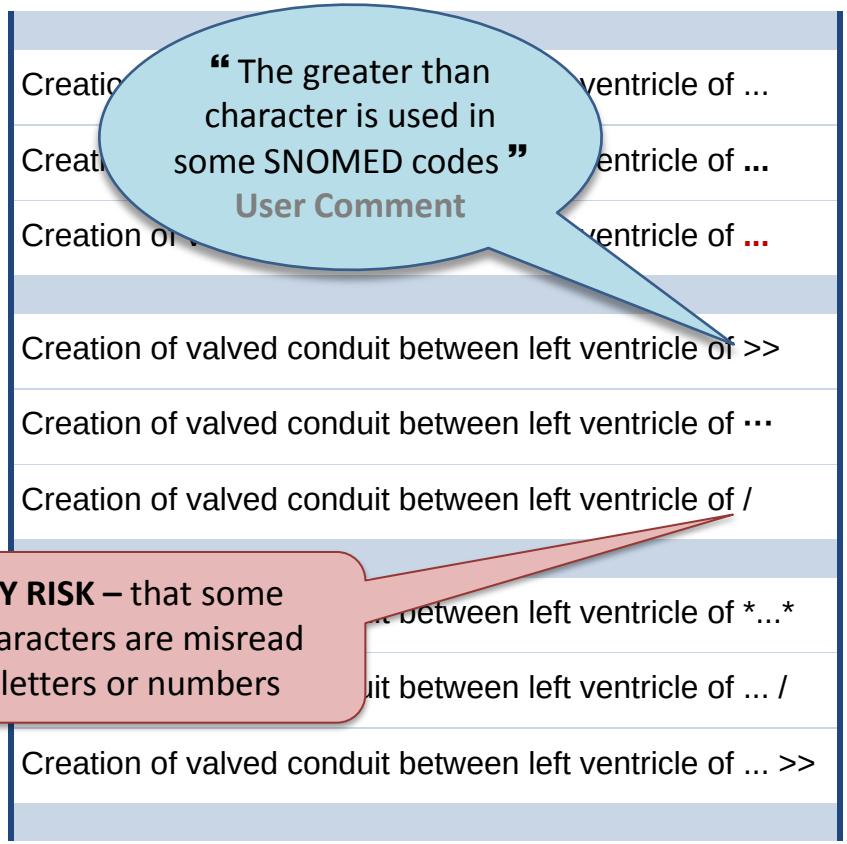


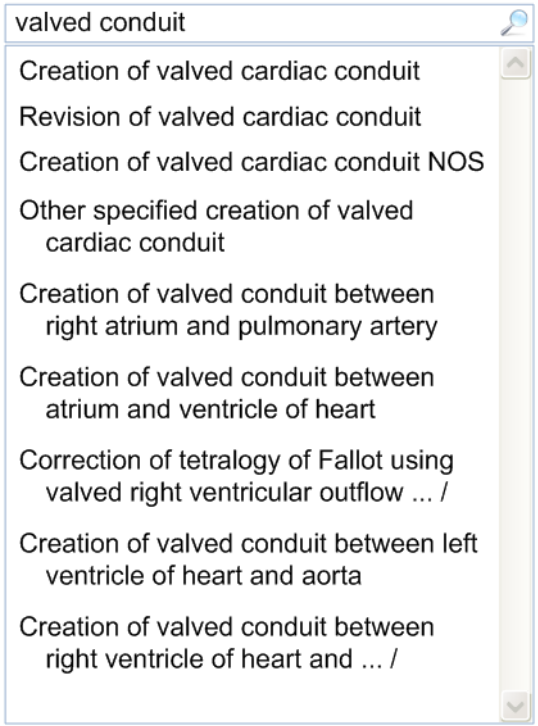
Text markers, such as this ellipsis, can be placed at the point of truncation and will move with the text if the line wraps

KEY RISK - that lack of familiarity with the concept of truncation affects the term that is selected

Truncation markers

A sequence of text characters, such as '… >>' or '*… /' may be easier to notice than a text marker such as an ellipsis '…'





Symbols, icons or controls may be more noticeable than an ellipsis
They may also take up more space (so more text has to be truncated)

Truncation markers

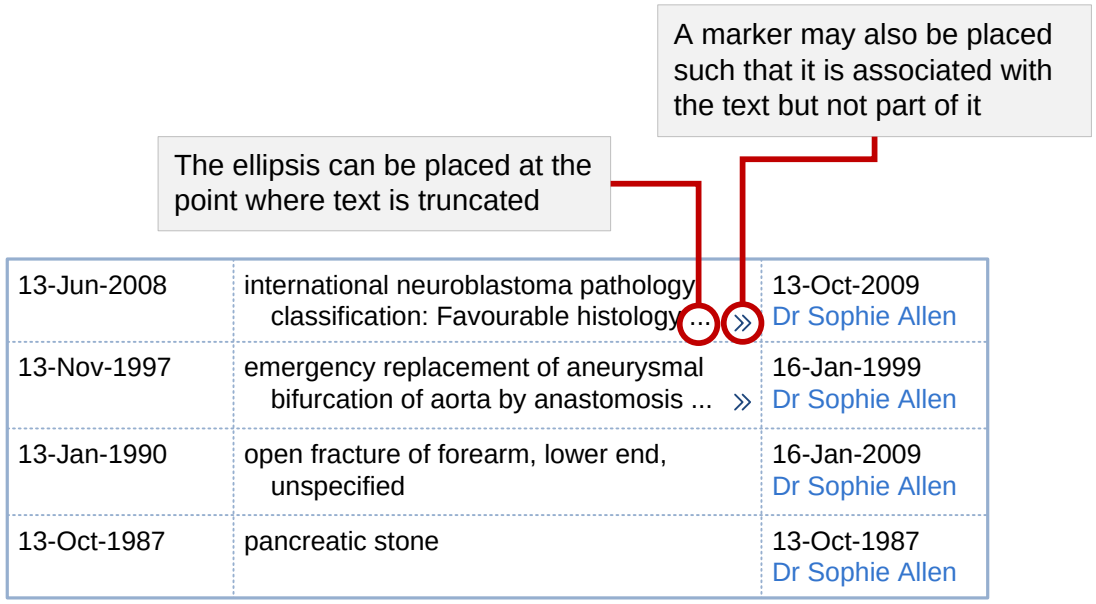
Icons or controls may distract too much from the text itself, especially if there are many of them in one view

KEY RISK - that hidden information (with any kind of truncation marker) is assumed to be unimportant

13-Oct-2009	1 day diarrhoea. Liquid ... »	History of current condition ... »	13-Oct-2009 Dr Sophie Allen
	Shortness of breath ... »	History of current condition ... »	13-Oct-2009 Dr Sophie Allen
	No haemoptysis	History of current condition ... »	13-Oct-2009 Dr Sophie Allen
Past	No hist[illegible] of MI/ Stroke/ ... »	Past medical history Known absent: Epilepsy	13-Oct-2009 Dr Sophie Allen
	Mild aortic stenosis	Past medical history Aortic stenosis - Mild	13-Oct-2009 Dr Sophie Allen
	No cancer	Family history Known absent: ... »	13-Oct-2009 Dr Sophie Allen
2008 (calculated)	Father died of MI aged 55	Family history Known present: ... »	13-Oct-2009 Dr Sophie Allen
1997	L index finger, PIP joint ... »	Past surgical history Joint injury, Open ... »	02-Feb-2007 Dr Tim Smith

Truncation markers

Markers can be placed at the point where text is truncated or in association with the text item



Summary

1. Text markers:
   a) Ellipses are used in typography to mark omission from speech or writing of a word or words that are superfluous or able to be understood from the context. It is also the term for a set of dots (…) used to indicate such an omission
   b) A text marker may be easier to implement and to place at the point of truncation than an icon or control
   c) Text markers, such as '>>' or '/', may be easier to notice than '…' but may also be misinterpreted or mistaken for text
   d) A sequence of text characters, such as '*…*' or '/ … /', may be easier to notice than a single character such as the ellipsis '…'
   e) Bold or colourful truncation markers may draw attention away from the text
   f) Placing a space between the text and truncation marker may cause the marker to wrap to the beginning of a new line
2. Symbols, icons and controls:
   a) May be useful if a control for displaying the full text is to be placed near the truncated text
   b) May distract too much from the text itself
   c) A symbol or icon may be more noticeable than an ellipsis
   d) The use of larger markers or controls may take up more space and result in more text being truncated

Truncation markers

Emerging Recommendations	Evidence
When text is truncated at the end, display (at least) an ellipsis at the point of truncation	• An ellipsis is more noticeable when displayed at the end of a line of truncated text (than in the 'middle') • Truncation without a truncation marker is easily missed • Without a truncation marker truncated text may not be noticed in a dynamic width list in which text is cut off by the right hand edge of the area. If the user does not realise that the area can be resized, the truncation may never be discovered.
If truncation is used in a selection list, supplement the ellipsis with a symbol for each truncated list item	• Positive feedback in user testing and risk assessments • *The completion of further work in this area should include a review of this recommendation since it depends heavily on the contents of the list, the type of task it is designed to support, the type of truncation used and whether it can be resized. A guidance point would need to be more specific than this*

Truncation markers

Emerging Recommendations	Evidence
Do not support the use of the ellipsis as a control (such as a button) for accessing the full text of a truncated term	• Derived from the Windows Style Guide • The ellipsis is not commonly used as a control so this function is not likely to be sufficiently discoverable

Areas / questions for further study

- A more detailed study of revealing full text in selection lists containing other types of data is needed to determine whether there is a generic approach that can be used in other contexts
- *Emerging recommendations can be used to inform further work on truncation markers*

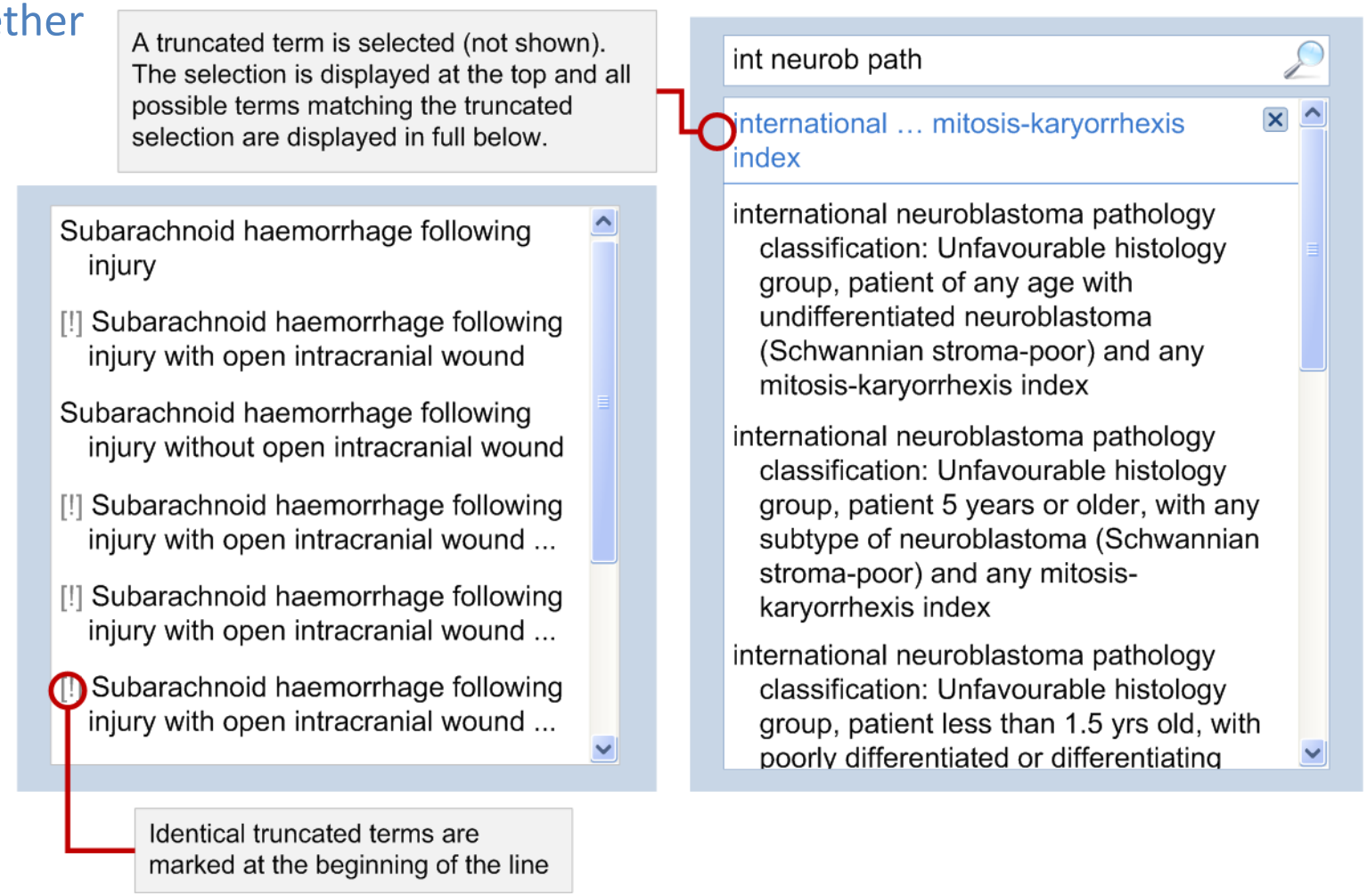
Theme 6

IDENTICAL TRUNCATED TERMS

Where ‘identical terms’ are ‘apparent duplicates’ created by the truncation

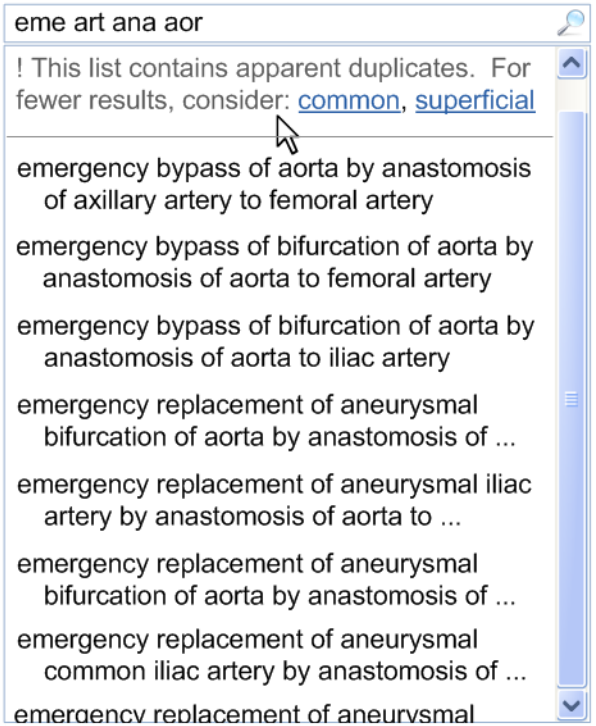
Identical truncated terms

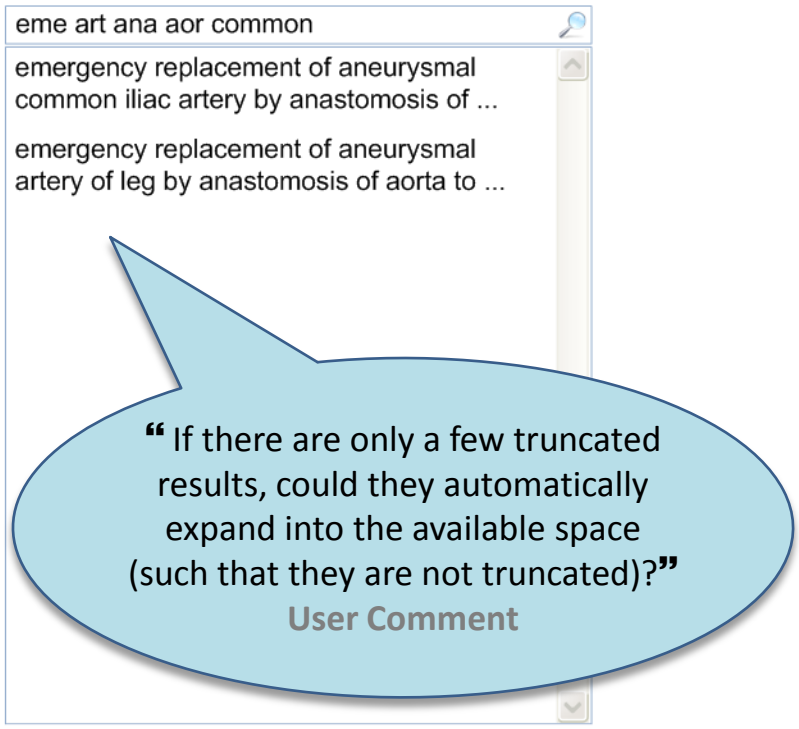
When truncated, some terms may be identical. These apparently duplicate terms can be either marked, consolidated into one item or avoided altogether



Identical truncated terms

If the presence of identical truncated terms in the list is easily avoided by changing the search criteria, a system could suggest words that would reduce the number of duplicates in the search results. A similar approach could be used to avoid the need for truncation altogether





Note: Identical truncated terms do not necessarily appear next to one another in the list

Identical truncated terms

Summary

1. When truncation causes identical terms to be displayed in a selection list:
   a) it may be necessary to draw attention to each
   b) it may be possible to consolidate them so that they are only displayed once
2. If the presence of identical truncated terms is easily avoided by changing the search criteria, a system could provide prompts to support narrowing the search results
3. An improved search process can support access to shorter lists in which identical terms are much less likely
4. Progressive disclosure can help to mitigate apparent duplicates since they can be expanded in context
5. A rule that requires identical truncated terms to be expanded automatically would create a potentially confusing mixed list with some expanded and others truncated
6. When many terms are truncated, it is more likely that there are similar (truncated) terms in a list, thus increasing the risk of mis-selection even when they are not identical

Identical truncated terms

Emerging Recommendations	Evidence
For fixed-width lists, when a list contains identical truncated terms (and when this can be determined) display the list without truncation by default	• An expert user familiar with the list can choose to re-apply truncation (so this still allows truncation to be used but only in certain circumstances) • *This recommendation is as close as possible to a rule stating that lists should never contain truncated text if they can contain duplicate items (without being unnecessarily restrictive). It should be tested further*
For fixed-width lists, when it is not possible for the system to determine whether a list contains identical truncated terms, provide a notification warning of the presence of identical truncated terms	• *This recommendation is a reminder that when it is possible for identical truncated terms to appear in a list, a way of mitigating the associated risks is needed*

Identical truncated terms

Areas / questions for further study

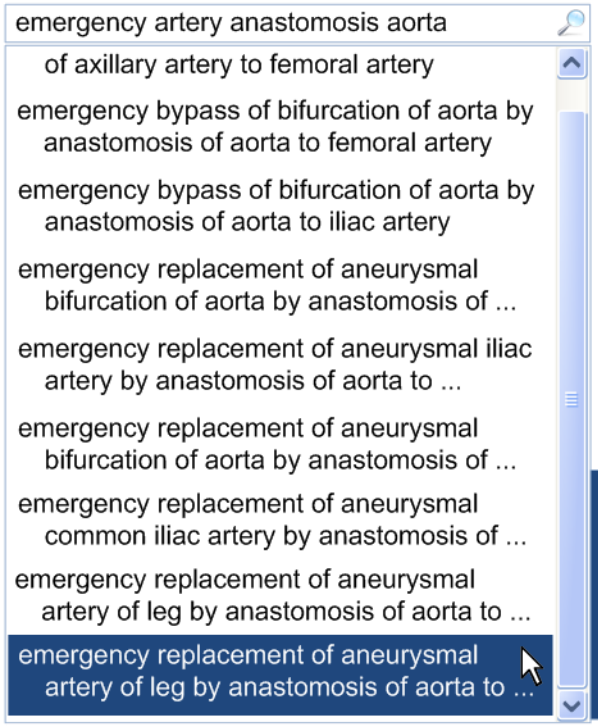
- Many of the recommendations refer specifically to fixed or dynamic-width lists. This repetition implies that further work is needed to clarify the priorities and the scenarios in which truncation must be excluded
- *Emerging recommendations can be used to inform further work on identical truncated terms*

Theme 7

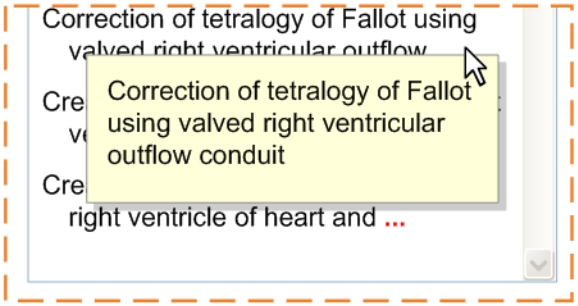
ACCESS to **FULL TEXT** for truncated terms

Access to full text for truncated terms

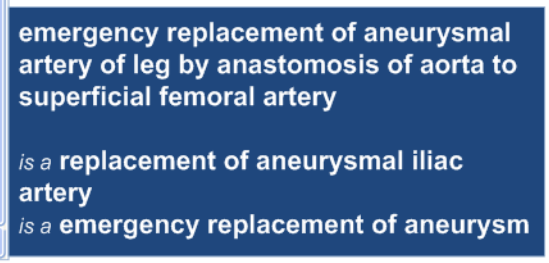
When a selection list contains truncated terms, the full term must be easily available to support the task of comparing and making a selection



Full text in a pop-up tooltip



Full text in a fly-out

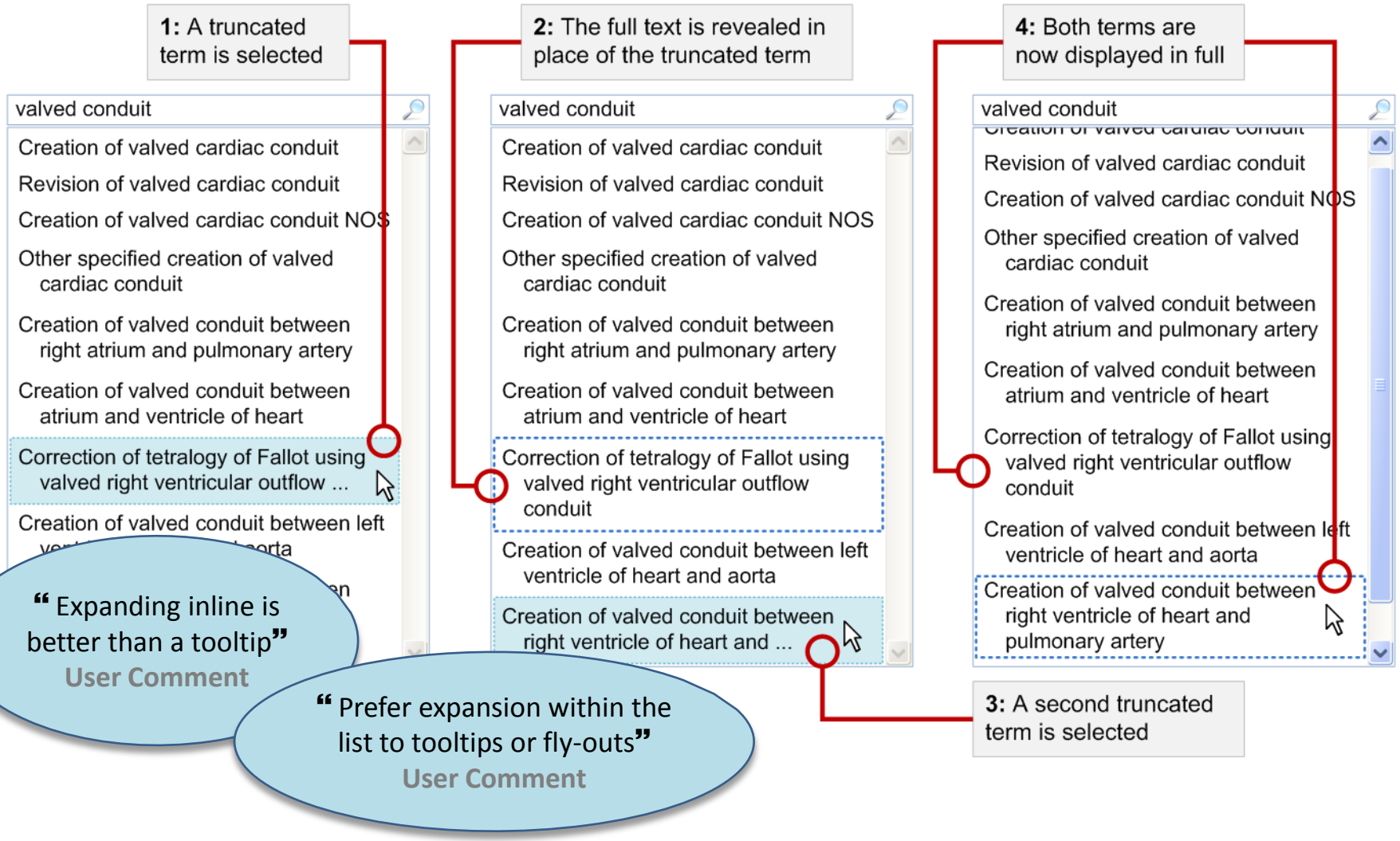


KEY RISK - clinicians may select incorrect or sub-optimal entries, or stop encoding because they do not have time to hover over every possibly relevant item in the list

A fly-out for a selection list takes more space than a tooltip but does not obscure other information in the list

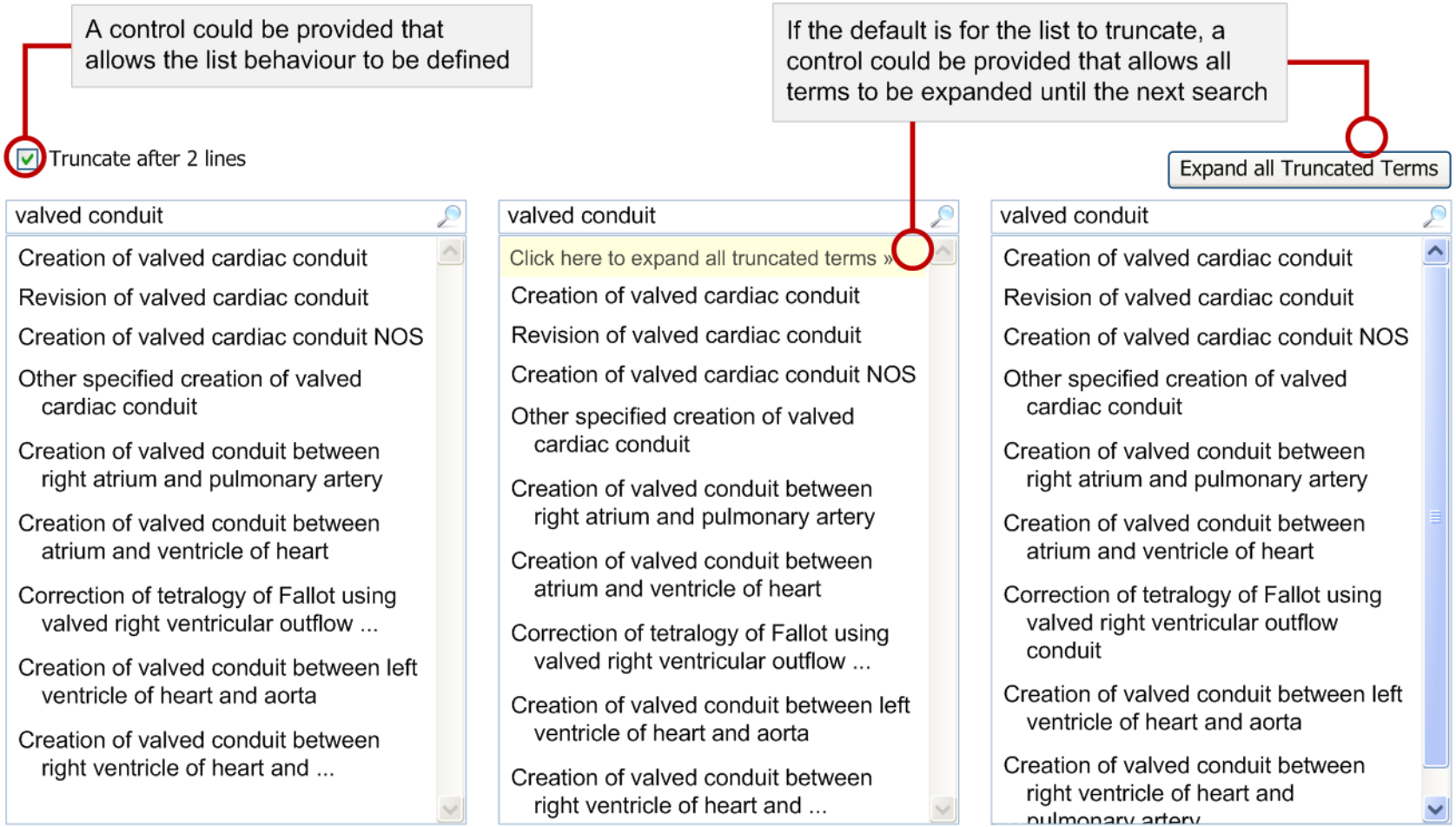
Access to full text for truncated terms

Progressive disclosure can allow more than one truncated term to be displayed in full without obscuring other information



Access to full text for truncated terms

A control could be provided that allows all truncated terms in the list to be revealed



Summary

1. Fly-outs and pop-ups
   a) Show the full text in place of or in close proximity to the truncated text
   b) Hover is used to highlight an item in a selection list (immediately) and display a fly-out (with a delay)
   c) A fly-out for a selection list takes more space but does not obscure other information in the list
   d) A tooltip obscures other information in the same list or table
2. Expand inline
   a) Allows more than one item to be displayed in full
   b) Allows an item to be expanded in context without obscuring other information
3. Expand all truncated terms
   a) A control could be provided that allows all truncated terms in the list to be expanded, either just this once or as a setting for the search results list

Access to full text for truncated terms

Emerging Recommendations	Evidence
If it is possible that a list may contain truncated terms, allow the user to display the list without truncation	• If a list contains truncated terms, but the user is sufficiently familiar with those terms and they are truncated in places that allow them to be differentiated without revealing the full text, then it may be acceptable to work with the truncated list. If the user is not familiar with the terms, they may choose (and it is safer for them) to view the list without truncation
If it is possible that a list may contain truncated text, give the user control over the width of the list	• In many cases, this allows a simple and direct method of removing the truncation by resizing the list • Larger lists may be appropriate when reviewing long terms • When a list is resized, more text is displayed within them • *This recommendation aims to encourage the provision of dynamic-width lists as far as possible until more work is completed that can generate more specific recommendations or guidance*

Access to full text for truncated terms

Emerging Recommendations	Evidence
Ensure that the full text of a truncated term is displayed and acknowledged before an action can be carried out on the selected term	• This recommendation aims to ensure that the full text of a term is reviewed actively before any action is carried out on the selection

Areas / questions for further study

- Assuming that the need to access full text for a truncated term is expected to be infrequent, are the methods of accessing full text explored here too complex?
- When assessing design alternatives for accessing full text, consider the full process including the steps immediately before and after the display of truncated terms
- The primary purpose of accessing full text is to support the process of comparing and selecting so there should be a focus on considering mis-selection risks
- *Emerging recommendations can be used to inform further work on access to full text for truncated terms*