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Title: ICD-10-XM

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Purpose: for discussion

Recommendations:

- develop a staged approach to ICD-10-XM which accommodates the activities outlined in the abstract
- use the clinical problem areas outlined in the paper by Roberts & Rust (2004) (Updating/revising specific clinical topics in ICD-10)
- use the Chronicle to document changes made to specific codes and terms in ICD-10 updates, clinical modifications, and specialty adaptations
- harmonize these changes
- produce an international clinical modification
- use the harmonized changes to inform the next revision of ICD (which may or may not be the same as the international clinical modification)

Abstract:

This paper will describe previous proposals from the authors to develop an ICD-10-XM. The aim of this work is to determine if different modifications and specialty adaptations can be harmonised and to decide what form ICD-10-XM should take. The alternatives or stages would be:

- to provide electronically a description of changes made to specific codes and terms in ICD-10 updates, clinical modifications, and specialty adaptations
- to harmonize these changes
- to produce an international clinical modification
- to use the harmonized changes to inform the next revision of ICD.

The work should be done in a relational database. Consideration must be given to proposed use and users of ICD-10-XM, resources and expertise required, relationship with clinical terminologies, language versions, format in which candidate classifications are held, and management of updates of the included classifications and of ICD-10-XM.

This paper is closely related to that describing the process for updating special clinical topics in ICD-10. The tools developed for management of these topics could be applied to an ICD-10-XM or to establish the feasibility of creating an ICD-10-XM.

For two years there has been discussion about the development of an ICD-10-XM, a compilation of the existing clinical modifications of ICD-10 with the aim

- to investigate the potential for harmonization between the different modifications and
- to move towards an international clinical modification that could be used by countries without the necessary resources to create their own modification.

It might be helpful to look not only at the existing clinical modifications but to add also the specialty-based adaptations of ICD-10 and other members of the WHO-FIC. A paper presented by the Nordic Collaborating Centre in 1998 at the Center Heads Meeting in Paris mentioned certain problems and inconsistencies between ICD-10 and its specialty-based adaptations and also between different adaptations in areas of clinical overlap (M. Virtanen, Specialty-based Classifications – Problems and Advantages. WHO/GPE/ICD/C/98.27)

This paper discusses some technical aspects of the development of an ICD-10-XM and analyses the potential input of an ICD-10-XM for the updating and revision of ICD-10.

Technical Aspects

A compilation of clinical modifications should be done in a relational database. Such a database can be set up in several steps:

1. Start with codes and self-containing titles of the WHO version of ICD-10 in English (ICD-10-WHO).
Codes and self-containing titles are available for ICD-10-WHO since 2003. Titles as listed in the Tabular List of ICD-10 are not sufficient for the database, as the full meaning of a code cannot always be taken from the title, e.g. C00.0 has the title “External upper lip”, however, the code stands for “Malignant neoplasm of external upper lip”. An identifier for the source must be added to this file. It is also important to identify which codes are valid and which are invalid.
2. Add codes, self-containing titles, and source identifier from various clinical modifications.
At present it is not known whether such files are available for all existing clinical modifications.
3. Add codes, self-containing titles, and source identifiers from various specialty-based adaptations.
At present it is not known whether such files are available for all existing specialty-based adaptations.
4. Add inclusion notes
Steps 1 to 3 must be repeated for the inclusion notes of ICD-10-WHO, of the clinical modifications and the specialty-based adaptations.
Inclusion notes will create problems, as not in all electronic files access to self-containing texts is possible.
E.g. at C00.0
Upper lip:

- NOS
- lipstick area
- vermilion border

should be available in an electronic format that allows to produce texts like

Upper lip: NOS
 Upper lip: lipstick area
 Upper lip: vermilion border

or even better:

Malignant neoplasm: Upper lip: NOS
 Malignant neoplasm: Upper lip: lipstick area
 Malignant neoplasm: Upper lip: vermilion border

Furthermore, e.g. at A09

Colitis } NOS
 Enteritis } haemorrhagic
 Gastroenteritis } septic

should be available in an electronic format that allows to produce texts like

Colitis: NOS
 Enteritis: NOS
 Gastroenteritis: NOS
 Colitis: haemorrhagic
 Enteritis: haemorrhagic
 Gastroenteritis: haemorrhagic
 Colitis: septic
 Enteritis: septic
 Gastroenteritis: septic

At present it is unknown, whether such files are available for the clinical modifications and the specialty-based adaptations.

5. Add exclusion notes and notes
 The requirements for the exclusion notes and notes are not as high as for the inclusion notes. Simple text fields in the database might be sufficient.
6. Add alphabetical indexes
 The alphabetical indexes of the clinical modifications and specialty-based adaptations raise severe problems as the format of the existing indexes aims mainly at book readers and not at computers. Self-containing texts are not available due to the non-essential modifiers and the indented format.

E.g.

Diabetes, diabetic (mellitus) (controlled) (familial) (severe) E14.-
 – acetonemia – *code to* E10-E14 with fourth character .1

should be available as

Diabetes E14.-
 Diabetes mellitus E14.-

Diabetic acetonemia – *code to* E10-E14 with fourth character .1
Etc.

Tabled index entries also need to be addressed carefully.

Nevertheless, terms from the index will be absolutely necessary for the development of an ICD-10-XM.

Alternative approach

NCCH Australia has developed a database tool called the ICD-10-AM Chronicle which summarises changes made to ICD-10 to create the first and subsequent editions of ICD-10-AM. It describes how and why changes between editions are made, is searchable by code, disease, procedure and coding standard and is available from NCCH website (www.fhs.usyd.edu.au/ncch/). The Chronicle consists of three hyperlinked files: a code list, details of the change and background to the change. A similar tool has been built as NCCH Brisbane to accommodate changes made to ICD-10 by the Update Reference Committee.

A database tool similar to the Chronicle could be applied to the development of ICD-10-XM and harmonization of clinical modifications and specialty adaptations of ICD-10. Until this work has been done, it is difficult to measure the extent to which clinical modifications diverge from ICD-10 and from each other. An example of how the Chronicle might inform ICD-10-XM diabetes codes is included in the proposal for this meeting for managing changes in structure and content of specific clinical areas (Roberts R, Rust J 2004).

Potential Input of ICD-10-XM for the Updating and Revision of ICD-10

1. Identify areas where ICD-10 is out of date, e.g. diabetes mellitus.
The differences between ICD-10 and its modifications will allow to identify areas where ICD-10 does no longer cover the current clinical knowledge.
2. Identify hot spots where further detail is needed for clinical medicine.
At areas where the clinical modifications use more subdivisions then ICD-10-WHO, the detail of ICD-10-WHO is probably not sufficient for clinical medicine.
3. Identify structural changes made for clinical modifications.
Some clinical modifications have made considerable changes to the structure of the classification. E.g. at ICD-10-CM the dagger/asterisk system has completely been replaced by subdivisions at the aetiology codes. ICD-10-CM distinguishes two types of exclusion notes, one that is identical to the exclusion notes of ICD-10-WHO and another one that has the function of a “code also” note. Such structural changes indicate that the structure of ICD-10-WHO might need changes for the future.
4. Identify new terms used in clinical practice.
New terms used in clinical practice might be available in the inclusion notes and in the alphabetical indexes. They must find their way into ICD-10-WHO.
5. Identify inconsistencies between ICD-10-WHO and the specialty-based adaptations.
The ICD-10-XM will allow the identification of inconsistencies between ICD-

10-WHO and the specialty-based adaptations and also inconsistencies between several specialty-based adaptations in areas of clinical overlap. Such inconsistencies can be avoided in the future, if specialty-based adaptations are produced from ICD-10-XM.

6. Identify areas with a potential for harmonization

Conclusion

At present it is unknown whether suitable files are available for the clinical modifications and specialty-based adaptations and which quality they have. But even if high-quality material is available it must be stressed that the technical work is only a small part compared with the intellectual work that has to follow.

The database is mainly a tool to assist in reading the ICD-10-XM and to draft a harmonization. The analysis of the differences between modifications and adaptations and the gain of input for updating and revision of ICD-10 are intellectual processes that will need extensive human resources.

Another word of caution! If clinical modifications proliferate and do not converge or harmonize, it will be an enormous task to maintain a database of successive editions of international clinical modifications for the whole of ICD. Such a task would be similar to that undertaken by the National Library of Medicine for UMLS. Decisions about the adoption of a harmonized clinical modification cannot be taken until the changes are documented and understood.

When this issue was discussed in Helsinki in April 2004, it was suggested that ICD-10-XM may take over the role of updating ICD-10 for morbidity coding purposes. It was considered then that it may become a major input not only for the update but for the revision process.