WHO-FIC NETWORK MEETING

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Progress report on pilot for revision trial of ICD-10 Ch XX on external causes of injury

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Background

Following the decisions of the WHO-FIC Network Meeting 2004 in Reykjavík and as part of the process for ICD revision toward ICD-11, a process of developing revision trial frameworks for specific clinical topics was initiated. The Nordic Centre for Classifications in Health Care agreed to co-ordinate the discussion on the pilot trial regarding revision of ICD-10 chapter XX on external causes of injury.

The "Steering Group for Revision Trial of Specific Clinical Topics Projects Team" held a teleconference in February 2005 to discuss progress and a proposed common reporting template for the specific topics projects. The common elements of the trial process are:

1. Identify scope and nature of problem
2. Identify relevant changes made in clinical modifications for ICD-10 and to ICD-10 itself
3. Examine other related classifications and terminologies
4. Identify relevant expert clinical groups or individuals internationally, stakeholders, end-users/application of the data
5. Establish time scale
6. Establish small group with responsibility for each clinical topic (each team leader to nominate)
7. Circulate topic specific material
8. Document responses
9. Devise and circulate draft solutions
10. Hold teleconference/face-to-face meeting to discuss problems and achieve consensus
11. Document outcome and recommend to URC/WHO-FIC

Summary of international meeting in Copenhagen

An international meeting was held June 16 2005 in Copenhagen to discuss the workplan for the Special Topics Project on External causes. The meeting attempted to cover items 1-3(4) of the common work template for the pilot projects: to find out which changes are necessary, how the process should be performed, and the availability/need of resources (persons, funding).

Meeting participants were Marijke de Kleijn (WHO-FIC CC Netherlands, ICECI Maint & Coord Group), James Harrision (by Internet phone) (ICECI Maint & Coord Group, Australia), Susan Mackenzie (CIHI, Canada), Gerard Pavillon (WHO-FIC CC France), Bertrand Thélot (Institut de Veille Sanitaire, France), Lars Age Johansson (Mortality Reference Group, Sweden), Robert Jakob (WHO CAT), Birthe Frimodt-Møller (Nordic WHO-FIC CC, Denmark), Martti Virtanen and Kristina Bränd Persson (Nordic WHO-

FIC CC).

Summary of meeting topics and discussion

ICD revision process and relation of ICD to other classifications in health information systems

- An overview of WHO-FIC classifications and needs in health care information systems
- The external causes classification constitutes a part of ICD but should also work quite independently
- How to collect detailed information with ability to aggregate to ICD-level
- Need for double coding must be avoided
- Terminology for ICD is included in ICECI and NCECI and the area is not covered by SNOMED

External causes in cause of death registration and mortality statistics

- Data from the WHO database on mortality indicated that about 1/3 of all deaths are reported to WHO
    - Approx. 7% of deaths are coded by Chapter XX, and within transport accidents 45% of codes were "unspecified"
    - 13 out of 70 countries do not use the 4th character
    - Approx. 400 codes are never used.
- Multiaxial system may cause problems for mortality statistics in continuity
    - For Mechanism and Intent a partial multiaxiality exists in ICD-10
    - One option is a single code classification for underlying cause with a multiaxial classification for more detailed needs
    - Several axes are implicit in Ch. XX, which allows for recoding of data
    - A practical solution is needed; a multiaxial classification can be used to create a list for mortality. Multiaxiality should not be seen as a code problem. As with intent and mechanism, several other axes are valuable, e.g. position of the victim.
    - The needs and corresponding structure should be made clear before codes are considered
- Instructions on Ch. XX use must be improved (inclusions, exclusions, coding instructions).
    - Distinction between "undetermined intent" and "intent unspecified"
    - Some intermediate level information should be permitted

- An algorithm for the selection of underlying cause code is needed

WHO needs for External Causes

The revised ICD

- easy to use and implement
- spectrum of needs of multiple cultures and different levels of development
- external causes of injury compatible with the ICECI
- drugs in ICD in line with ATC and WHO-ART

Three main streams of different levels of detail and different focuses:

- *scientific stream*, with a need for a very high degree of detail in classification
- *clinical stream* with similar subjects but less detail and different emphasis
- *public health stream* which includes the needs in mortality, morbidity and prevention

Working groups in WHO directly involved with the External Causes include "Injury and Prevention", "Drug monitoring" and the "International Programme on Chemical Safety".

The different levels of detail to be represented and to be accessible in the future ICD should be expandable and allow aggregation like the parts of a telescope.

Experiences from ICD-10 Chapter XX in the (clinical) modifications (e.g. ICD-10-AM, ICD-10-CA, Nordic versions)

ICD-10-AM

- national process based on user suggestions
- has not influenced mortality coding
- ICECI group has submitted suggestions for revision of AM

According to WHO instructions deaths are to be reported according to the international version of ICD, not national modifications.

ICD-10-CA

A document on modifications of ICD-10 in ICD-10-CA (2003) was presented. The CA modifications have been developed by CIHI. The section on sports is based on ICECI but has been expanded.

- Documents summarising modifications should be available for all modifications. Countries have been asked by WHO to provide information on modifications as part of the ICD-XM project.

Nordic ICD-10 versions

Common Nordic view is that the level of detail in Chapter XX is too high which

means that many cases end up in rest groups. Similar problems are reported from Germany and Canada. A telescopic effect is needed where, at some level, you must switch to some other classification, such as for instance ICECI.

- The level of detail in Ch. XX is a problem, but there is also a problem to isolate e.g. traffic accidents. This is cumbersome since traffic accidents are very frequent and should be clearly defined to avoid miscoding.

The injury matrix developed by the CDC (for ICD-9) works with ICECI in summarising cause of death. However, the development of ICECI was subject to some constraints due to the linkage with Chapter XX.

- New version of Ch. XX of similar detail could be developed in consultation with countries to get the optimum amount of categories.

Structure of external cause classifications - basic principles (ICECI)

- ICECI version 1.2 from June 2004 is available in English from [http://www.ICECI.org]. ICECI
- ICECI Coordination and Maintenance Group is the custodian
- structure is multiaxial and hierarchical
- 7 core modules with additional modules (Violence, Transport, Place, Sports and Occupational).

Relation to ICD-10

- Documentation for v1.2 includes overview of ICECI in relation to ICD
- Mapping of modules for Mechanism and Intent according to ICECI is also shown
- In Ch. XIX the classes/terms is a mix of injuries and external causes
- In analysis of ICECI vs. ICD one should use the matrix and analyse the terms/concepts. Some ICECI terms differ and some are the same as in ICD but they should all be compatible with ICD (Chapter XIX, XX and V (drugs)).

Ch. XX is a separate axis of ICD

- Problem in differentiation of Ch. V and intoxications - intoxication can be caused by psychiatric illness

The design of core modules in ICECI was based on existing structure of Ch XX

- a separation of mechanism and intent
- link to the mortality matrix was made in cooperation with ICE
- a minimal coding bridge to ICD-9/10 from ICECI exists but a more robust bridge is needed

The problem in making a flat projection is that the structure in ICD-10 is not logical.

- logical structure can be created from the multiaxial approach

Inventory

- make an inventory of what we want to know today, and maybe also possible future needs, even if such assumptions are difficult, e.g; nosocomial infections, sudden infant death

Initial work on criteria and finding the needed classes and items is substantial but the second phase can be automated

- items will probably not differ much. Need to look at subcategories.
- detailed mapping of ICECI to ICD would reveal the needed characteristics
- for mortality the approach would be to select the essential core modules and make lists of items needed.
- some concepts need to be combined if the needs of most countries are to be accommodated

Compatibility issues and evidence based approach

- How will restructuring of Ch. XX change the statistics and could there be crosswalks? For compatibility issues it is essential to look at the data actually reported. Some categories are more important than others.

In Central and South America there are some examples of use of ICECI based instruments and testing of subsets of classifications derived from ICECI. This is an evidence based approach that could be used to get more information on the need in developing countries. It could be used to develop a relatively short list of causes of death that could be used in countries currently not reporting mortality data.

To get basic data for developing countries does not necessarily mean that the classification should be simple. A detailed classification may be needed.

The ICECI network includes participants from many developing countries. This could be a good forum to get more information on possible improvements to Ch. XX. The piloting work group should liaise with these groups. There are other international groups that could relevant to the revision of Ch. XX as a whole.

Mapping external cause classifications to ICD-10 Chapter XX (NCECI)

NCECI vs. ICD-10

- different purposes of the classifications
    - public health aspects (ICD)
    - comparisons in time (ICD)
    - use for prevention (NCECI)
- occupational accidents are only available as optional 5th character (usually

not registered)

- crosswalk between NCECI and ICD-10 is possible

Possible improvements of ICD system:

- public health needs to be emphasized, e.g. place of occurrence + activity of victim
- consider the possibility to map a basic data set, e.g. 1st digit level of hierarchical codes in multiaxial classifications
- need to develop short list to be used in several countries
- need to define concepts, especially "injury mechanism"

  For example: W68 Drowning, submersion following fall into swimming-pool

  - o in NCECI fall is regarded as the beginning of the process that led to the injury (drowning)
  - o objective is to describe "what went wrong" (deviation) for which two axes are needed.

"Underlying cause of injury" and “underlying cause of death”

- how far back in the chain of events to go?
- which is the event that could be prevented?

Summary and next steps

After discussion the meeting resulted in a Draft workplan with action items. The draft workplan (below) is being put forward to the WHO-FIC Network Meeting 2005 for further discussion.

Step 1: Main principles and plan for pilot process

- A classification with a worked-out terminology such as ICECI is needed for the most detailed level. It should be possible to link to ICD categories on a more aggregated level (within ICD there will exist different levels of aggregation)

- A model to be used globally should be considered, meaning that it should be useful in all cultural and socioeconomic settings.

- Establish coordination group and subgroups

- Identify and liaise with international contacts for general information collection and further work on subtasks (public health (prevention, mortality, morbidity), clinical use, scientific use)

- Collect information on existing modifications to Chapter XX in (national) ICD modifications and current use for morbidity and mortality statistics. Information on public health aspects also derived from the ICD-XM project

- Explore the need for categories and subcategories on country level using a selection of a detailed classification and an existing WHO model for reporting (mortality data) as starting point

- Develop a list of aggregated level ICD categories based on the information collection, including definitions and examples

- Need for Index based on list of terms?

- Develop algorithm for selection of underlying external cause, if multiple external causes occurred

- Establish a public access point for information exchange at the WHO-FIC website

Step 2: Develop draft list of existing/proposed categories

- Draft list of categories according to ICD, ICECI/NCECI including WHO list for mortality data reporting and CDC matrix.

- First draft by July 2005 (Marijke de Kleijn)

- Additional input from Birthe Frimodt-Møller, James Harrison, Gerard Pavillon, Lars Age Johansson

- Draft framework finalized by Sept 2005 (Marijke de Kleijn) (Appendix 1)

Step 3: Identify and liaise with national contacts and international groups/networks to participate in further work along the three main streams

- Public health: prevention, mortality and morbidity statistics

- Clinical use

- Scientific aspects

Step 4: Proposed action plan & draft framework to be discussed by WHO-FIC Network Meeting 2005

- Report of pilot plan for the WHO-FIC Network Meeting 2005 (Nordic Centre)

- Meeting to consider workplan, timeline as well as resources/funding issues

- Formation of main workgroup and subgroups

Step 5: Conduct survey to collect information from countries & interest groups by using proposed framework

- Priority setting for public health (prevention, morbidity, mortality), clinical use, scientific

- Missing information?

- Missing detail?

Appendix

Draft Framework for Inventory of priority setting of external causes issues

(Draft version)

Form completed by:

Name ……

Organization ……

Address ……

Phone ……

Fax ……

e-mail ……

Form completed for application area (please select one):

☐ General

☐ Public health (prevention, morbidity)

☐ Clinical setting

☐ Mortality

☐ Scientific

☐ Other (please specify) ……

In the following table, please select one priority for each item. Under other items, new items may be proposed. Please mark their priority too.

Item	High priority for ICD	Low priority for ICD	Priority only for additional detailed classification	Remarks
Core modules				
Intent				
Mechanism of injury				
Object/substance producing injury				
Place of occurrence				
Activity when injured				
Alcohol use				
Psychoactive drug or substance used				
Additional modules				
Violence				
Transport				
Place				
Sports				
Occupational				
Other modules				
?				
?				
?				